PARTICLES AND PARTICLE-VERB CONSTRUCTIONS IN ENGLISH AND OTHER GERMANIC LANGUAGES

by

Darrell Larsen

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics

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by

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ABSTRACT

This dissertation examines the lexical semantics of particles and the syntax of particles and particle-verb constructions. I argue against the notion that there are distinct types of particles (e.g. resultative versus idiomatic versus aspectual), claiming instead that they are semantic predicates consisting of an often metaphorical spatial meaning and, with a few exceptions, an unpronounced GROUND argument. As a result, particle verbs are argued to be semantically compositional. The syntactic behavior of particle verbs is primarily explained through the adoption of the following major claims: (i) particles are optionally projecting syntactic heads whose topmost projection merges with a verbal head to form either a complex head or a resultative-like structure; (ii) nonprojecting particles (which combine with verbs to form complex heads) remain *in situ*, the verb raising out of the complex via phonological head movement; and (iii) objects raise to receive Case by LF, but they may do so overtly or covertly. These claims are shown to account for the behavior of the particle-verb construction when interacting with a wide range of other phenomena. The adoption of a further claim—(iv) ECM subjects of small-clauses preferably or obligatorily (depending on the speaker) raise out of the small clause overtly, whereas ECM subjects of IPs need not—is then shown to be able to explain the pattern of grammaticality and acceptability judgments encountered in the so-called 'complex' particle-verb constructions. Finally, the ability of particle verbs to undergo various word-formation processes is considered within the context of these theoretical assumptions.

Chapter 1

INTRODUCTION

1.1 The Issues

The topic of the present study is a peculiar construction known as, among other names, the particle-verb construction. The particle-verb construction in English is most well-known for the ability for the particle and object to appear in either order with respect to each other with no apparent difference in meaning. This is demonstrated below.

(1) a. The jokes cracked up the audience.

b. The jokes cracked the audience up.

Following Dehé (2002), I will refer to the order in (1a), where the verb and particle (here, *up*) are adjacent, as the 'continuous' order and the non-adjacent order in (1b) as the 'discontinuous' order.

Particle verbs are often described as lying on the border of morphology and syntax. On the one hand, particle verbs appear to consist of two syntactically independent words in examples like (1b), where the verb and particle appear as discontinuous morphemes. On the other hand, particle verbs appear to behave like single words in other constructions, such as the examples below involving gapping and coordination. In the gapping construction below, the particle must be gapped together with the verb, while the coordination construction below, where the particle verb and simplex verb share the same object, shows that particle verbs may be coordinated with individual verbs.[1]

[1] I use curly brackets similar to their use in SPE notation Chomsky & Halle (1968); specifically, they indicate the possible positions in which a lexical item or items may appear. This contrasts with parentheses, which I follow the standard syntactic convention in using to indicate that a lexical item is optional.

(2) John ate up pie, and Bill, {*up} the cake {*up}.

(3) John looked up and read the word's definition.

Furthermore, the meaning of many particle verbs is not entirely transparent and may be considered idiomatic, such as *make out* 'engage in heavy kissing' in *John made out with Mary*. Some have taken this as an indication that particle verbs are words rather than phrases.

If the verb and particle form a word, a further question is whether the word is formed in the morphology or the syntax. Particle-verb constructions are able to participate in some word-formation processes which have been claimed by some to take place in the morphology. Some examples in English include compounding and adjectival passive formation, shown below.

(4) John's freak-out at work cost him his job.

(5) John failed to steal the locked-up bicycle.

Other Germanic languages also have constructions resembling the English particle-verb construction, but they exhibit differences that demand an explanation. For example, the VO Germanic languages (English and the Scandinavian languages) all place particles after the verb except in special contexts, but they differ in the position of the particle relative to the object of a transitive particle verb. Whereas English, Icelandic and Norwegian allow the particle to precede or follow the object, Danish requires the particle to follow the object, and Swedish usually requires the particle to precede the object. This is demonstrated by the following example.[2]

---

[2] In the citation Author (2000:43), the number following the colon indicates a page number where the data is found in the original source. In rare instances where the original example number is include, it is placed in parentheses (e.g. Author 2000:(30)). When I provide several examples from a single source, such that they share a number enumeration and are distinguished by letter sub-enumerations, I cite the source after the last example only, as in (7).
As a general rule, I use the term 'adapted' when I make changes in formatting to maintain consistency within this dissertation, or when I make changes to glosses for consistency. Examples of common formatting changes including removal or additional of font effects and addition of hyphens to indicate morpheme boundaries not indicated in the original examples, which generally reflect actual spelling. I use the term 'modified' for changes which are more than significant than those marked with 'adapted.' This includes the addition or deletion of glosses and translations, the addition or deletion of syntactic bracketing in examples, the addition or removal

(6) Ég gerði {upp} nokkra bíla {upp}. (Icelandic)
I fixed up some cars up
'I fixed up some cars.' (Svenonius 1996a:60, modified)

(7) a. Vi slapp {ut} hunden {ut} (Norwegian)

b. Vi slap {*ud} hunden {ud} (Danish)

c. Vi släpte {ut} hunden {*ut} (Swedish)
we let out the.dog out
'We let the dog out' (Svenonius 1994:Ch. 3, p. 8, adapted)

The counterpart to the English particle-verb construction in OV Germanic languages (i.e. the West Germanic languages excluding Modern English) is often known as the separable prefix or separable complex verb. As this name suggests, particles typically precede the verb in OV Germanic languages in non-V2 contexts, but they are unlike other prefixes in that they are stranded by the verb in V2 constructions. These prefixes often correspond in meaning and function to particles in English, and diachronic studies of the English particle-verb construction (e.g. Elenbaas 2007) show that the English particle was a separable prefix when English exhibited OV word orders.[3] The following sentences from German demonstrates that the verb and prefix in separable-prefix constructions in German may be nontransparent, adjacent or discontinuous, and may participate in word-formation processes, as in English.

(8) a. Wie hört man mit dem Rauchen auf?
How listen one with the smoking on
'How does one quit smoking?'

b. Wie kann man mit dem Rauchen aufhören?
How can one with the smoking on.listen
'How can one quit smoking?'

c. An-sag-er 'announcer' (cf. Er sagt an, dass... 'He announced, that...')

---

of words (without significantly changing the sentence or affecting what it illustrates), instances where I have combined two examples into one, and so on. It is unlikely that I have maintained complete consistency in distinguishing 'adapted' from 'modified'.

[3] See Blom (2005) and Los et al. (2012) for a comparison of Dutch and English particles. They show that although English particles are semantically similar to one class of Dutch particles, Dutch particles are derived from a wider range of sources than English particles.

In addition to the ability of separable prefix verbs to undergo word-formation processes, Dutch exhibits the Verb Raising construction that suggests separable prefix verbs are single words, shown in (9). The ability of particles to move rightward with verbs in this construction is commonly treated as evidence that verbs and particles form syntactic heads in this instance (see §4.4.2 for more). The underline represents the original position of the verb *bellen*.

(9) ... dat Hans zijn moeder {op} ___ wilde {op} bellen
that Hans his mother up wanted up call
'...that Hans wanted to call up his mother.' (Booij 2002:22, modified)

Accounting for the syntax of particle-verb constructions (of which I consider separable prefix verbs one type) has resulted in a vast literature starting with some of the earliest generative grammar literature (e.g. Chomsky 1957:§7.4); however, despite the frequency with which these constructions have been discussed, there remains significant disagreement about the proper syntactic treatment of particle verb constructions. A review of the range of syntactic accounts of particle-verb constructions will be provided in Chapter 2, and my own analysis is provided in Chapters 4 and 5.

Particle verbs are interesting not only for their syntactic characteristics, but also for their semantic characteristics. The meanings of particle verbs range from entirely predictable based on the words' literal senses (e.g. *jump up*) to those in which neither verb nor particle is used in a literal sense (e.g. *make out*, meaning 'engage in heavy kissing'). Of these, particle verbs which are not obviously compositional are more interesting. It is well-known that particle verbs may exhibit a different valency and/or selectional restrictions from the use of the verb contained within them in other contexts. With the more literal particle verbs, these facts might be easily explained by relating particle-verb constructions to resultative constructions, which do not always require the same arguments as the verbs contained within them otherwise do. Particle verbs with seemingly idiomatic interpretations, however, do not immediately lend themselves to being treated as resultatives. Together with the fact that they frequently have different selectional restrictions than their individual parts, this has been used to support claims that particle verbs are morphological constructs. On the other hand,

it has been argued that even particle verbs with somewhat obscure meanings can be treated as compositional, with one or both parts of the particle verb contributing a conventionalized, non-literal meaning. Support for this conception of particle verbs is found when comparing long lists of particle verbs containing the same particle, where it becomes apparent that particles typically have several systematic meanings that arise in a number of verb+particle combinations. I will later argue that this latter conception is correct, and more specifically, I will argue that particle-verb constructions are similar to resultative constructions (though not always identical), with the meanings of particles often being metaphorical extensions of one of the particles' literal senses.

A second reason particles are interesting from a semantic perspective is because they sometimes appear to do little more than alter the aspect of the verb (phrase), such as *up* in *eat up*. Such particles are often depicted as nothing more than aspectual markers, though they behave syntactically like other particles. In some cases, the aspectual effects of some particles have led to some author positing the existence of aspectual projections as part of their syntactic treatment of particles in general. I argue against the existence of purely 'aspectual' particles below, suggesting that any aspectual effects that particles appear to have on the verbs they occur with follows from the underlying meanings of the particles. These meanings, I claim, are typically metaphorical extensions of one of the particles' literal senses.

One final reason the semantics of particles is of interest is that we can see a syntactic distinction between transparent and nontransparent particles. Specifically, transparent particles are able to occur in a broader range of syntactic contexts than nontransparent particles. For example, transparent particles may appear with nPs in the absence of a verb, whereas nontransparent particles may not.[4] This is demonstrated in the sentences below.

(10) a. Mr. Cruise put on his tin foil hat on. With his hat on, he felt safe from the aliens.

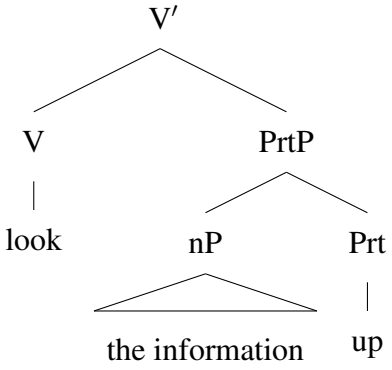
b. Timmy ate his dinner up. *With his dinner up, he asked for dessert.

[4] I use nP rather than DP to refer to the outermost functional projection of a noun.

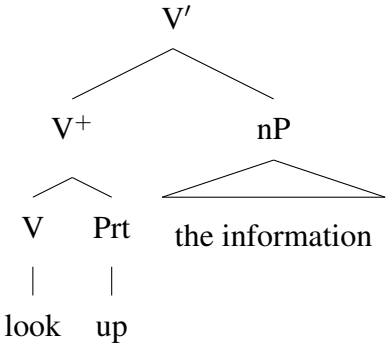
1.2 Overview of Analysis

This dissertation aims to provide a detailed look into the syntax and semantics of particles and particle-verb constructions and to offer a unified, cross-linguistic view of particle-like constructions. The primary claims of the present analysis are the following.[5] Particles are optionally projecting or non-projecting syntactic heads. A particle or its projection merges directly with a verbal head to create an ECM/raising structure. Particles differ from other constructions sharing this base configuration (e.g. resultatives) in that particles need not project. When a particle projects, the particle-verb construction resembles the class of broadly defined resultatives (as in Goldberg & Jackendoff 2004[6]) both syntactically and semantically, with the particle heading a small-clause PrtP and taking an nP in the specifier of its outermost layer, as in (11a). A particle-verb construction containing a nonprojecting particle is syntactically distinct, with the particle merging directly with a verbal head V^0 to form another verbal head V^0, as in (11b) (I generally label syntactically complex heads V^+ for purely expository purposes). Non-external arguments of particle-verb constructions merge as the complement of this complex head.

(11) a.



b.



Unlike most accounts I am aware of that make use of (syntactically or morphologically) complex heads, I argue that the particle never undergoes head movement as a unit with the

[5] This dissertation assumes the reader is familiar with Government & Binding Theory (Chomsky 1981) and Minimalism (Chomsky 1993, 1995b).

[6] Goldberg & Jackendoff (2004) assume a very broad definition of resultative which is not a universally accepted. While the use of the term 'resultative' may be misleading as a description of the range of the constructions it is meant to encompass there, I believe that the set they describe can be treated as a unified set based primarily on syntactic criteria. See §4.4.2.2.

verb. At the same time, I adopt an account of head movement which inherently allows us to explain why the verbal portion may raise without the particle without requiring the adoption of additional grammatical machinery like excorporation.

With respect to the word-order alternation found in English and some VO Germanic languages, I argue that this is due to the interplay of the structures above with the requirement that nPs receive Case by LF. In English, it is argued that nPs may receive Case overtly or covertly, thereby allowing us to derive both orders when a particle does not project (cf. the structure in (11b)). In contrast, I argue that a projecting particle may only derive the discontinuous word order.

Semantically, I argue that particles are associated with their own meanings, all of which are spatial or metaphorical extensions of the particles' literal, spatial senses. The nonliteral meanings are slightly more restricted in their syntactic distribution, and I argue this is because the nonliteral meanings are available only when particles are used in combination with specific sets of verbs or verbs carrying specific sets of features and when the particle and verb are in a specific syntactic configurations.

The present account is also set apart from much (but not all) of the previous literature in the range of data examined. While many analyses are able to account for the basic syntactic data, they often fail to account for much of the more problematic data, such as the complex behavior of the particle in double-object constructions (see §5.3). The present analysis attempts to run the gamut of constructions in which particle verbs appear in order to tweak the analysis to account for (and in some cases provide an explanation for) the patterns we see, as well as to determine compatibility with existing analyses of other constructions.[7]

[7] The decision to cast such a wide net was at least partially triggered by a statement in McIntyre (2007:351), where it is stated that "No single study in the copious particle literature offers [a near-exhaustive taxonomy of relevant phenomena], relevant discussions being scattered throughout various sources..." While I fear I have also not been able to provide a near-exhaustive taxonomy of relevant phenomena (e.g. my discussion is relatively limited to English), I hope that I have been able to at least highlighted the importance in addressing many of the phenomena scattered through the literature and the issues they bring with them.

1.3 What Is a Particle?

Underlying this paper is the idea that there exists such a thing as a 'particle'. Despite the existence of a vast literature on particles, and although linguists appear to share a general idea of what a particle is, it is not easy to define. It is especially difficult to find a definition that holds crosslinguistically or in an atheoretic manner. For example, a common delineation of English particles is the set of words which may immediately precede or follow a non-heavy, non-pronominal, accusative-marked nP, in constructions where this combination immediately follows the verb (i.e. those words participating in the word-order alternation exemplified in (1)). Crosslinguistically, this definition is insufficient. In Swedish, for example, particles must typically precede the relevant nP argument, while in Danish particles must follow it. In OV Germanic languages, particles are found in the so-called 'separable prefix verbs', but they necessarily follow the relevant nP.

Even in English, such a definition is insufficient, as it only applies to transitive particle-verb constructions. There are many verb + preposition combinations which do not take an object, but where the prepositional element is still generally considered to be a particle (e.g. as opposed to a pure adverb). There are good reasons for grouping such prepositions together with other particles. One reason is that a number of particle verbs have optionally overt objects and exhibit that the word-order alternation when the object is overt. Similarly, other particle verbs participate in the unaccusative/causative alternation, where the latter use allows the transitive word-order alternation.

(12) a. The baby threw up.

b. The baby threw {its lunch} up {its lunch}.

(13) a. The soup cooled down quickly.

b. John cooled {his soup} down {his soup} by blowing on it.

Furthermore, words like *on* and *away* are typically considered to be particles, even though

they are generally believed to be incompatible with nP objects in some of their most productive uses.

(14) a. John sang (*the song) on.

b. John pounded away at the wall.

It is clear that a definition of particles which only picks out those which occur in transitive constructions is insufficient.

It is also common to limit discussion of particles to words which are homophonous with prepositions. While such particles do seem to occur most frequently in English, there is good reason to not exclude other types of words in a definition of particles. It has frequently been noted that some adjectives, and even the non-finite form of the verb *go* in *let go*, behave like particles in that they may precede or follow an object nP.[8]

(15) a. He cut {open} the melon {open}.

b. He let {%go} the reins {go}. (Bolinger 1971:20, adapted)

(16) a. They set {free} the slaves {free}.

b. He wiped {clean} the window {clean}.

c. They cut {short} the meeting {short}.

When all is considered, I do not believe it is possible to provide an atheoretical definition that encompasses everything that linguists commonly refer to as particles; for this reason, I propose and defend the following theoretical conception of particles.

(17) Particles are syntactic heads which need not project phrases and which may merge directly with a verbal head.

This definition consists of a number of distinct theoretical assumptions. First, particles are syntactic heads rather than nonsyntactic, morphological units. Second, by saying that "particles need not project phrases", I intend to include both words that never project phrases

[8] Nonprepositional particles are discussed in more detail in §4.6.4, where I provide examples from other languages. In addition to adjectival and verbal particles, discussion of nominal particles is provided.

and words that optionally project phrases in my definition of 'particle'. Only words that must project phrases are excluded. For example, canonical resultative secondary predicates are excluded, even though they otherwise have a similar syntactic distribution as projecting particles in my analysis below. Finally, I have two purposes in saying that particles are heads which "may merge directly with a verbal head". One is to exclude any non-projecting or optionally projecting word that cannot occur with verbs (e.g. there may be nonprojecting heads that combine with nouns). The second purpose is that it allows us to capture words which are often considered particles but which appear in clauses lacking a verbal element. For example, it is normal to call the preposition *out* in *Out with it!* a particle, even though it is not accompanied by a verb. In my definition, we can call this a particle because this same word may occur in constructions like *spit it out*, where I argue it merges directly with a verbal head.[9] In combination with the syntactic structure I propose for the particle-verb construction, the definition above picks out most words crosslinguistically which have been called particles.[10]

Finally, I wish to clarify for the reader what I do not intend to claim by providing the above definition. In line with most analyses, I do not claim that particles are a distinct lexical category alongside nouns, verbs and so on. I also do not claim that particles are necessarily the only optionally projecting heads; there may be optionally projecting words which do not merge with verbal heads. Last of all, it should be noted that the term 'particle' is multiply ambiguous in linguistics. In addition to the class of words defined above, the term is commonly used to refer to 'discourse particles' such as *you know* or *well*, and it can also refer to a range of Case-marking suffixes and other postpositions in languages such as

[9] Crucially, *out* has the same meaning in both of these examples as well.

[10] There is at least one major instance where my definition might not capture words that are typically referred to as particles. It is possible that Danish does not have any particles based on this definition. In VO Germanic languages, the ability for particles to occur in the continuous order is only possible when particles do not project phrases in the account I provide below. Danish 'particles', however, are claimed to not occur in the continuous order. In my account this does not necessarily mean they are always projecting heads, though, as both the continuous and discontinuous orders can be derived from nonprojecting particles in my account. I have not examined Danish data to determine whether other distributional data can show Danish 'particles' to be obligatorily projecting or not, so I leave this question open. Nonetheless, if Danish 'particles' obligatorily project, then they simply are not particles.

Korean or Japanese. I make no claims regarding these other types of particles, other than to say that they are distinct from the type of particle under investigation.

1.4 Outline

Chapter 2 examines previous accounts of particle constructions. Where possible, analyses are grouped together by type both out of convention and to highlight specific advantages and problems faced by each type. Individual analyses are also examined, with advantages and problems of the accounts highlighted.

Chapter 3 examines the semantics of particles and particle-verb constructions in English. The chapter argues that particles have systematic meanings, and by extension that particle verbs have compositional meanings. I claim that particles used in a nonliteral sense are (metaphorical) extensions of one of the particle's literal, spatial senses. Throughout the chapter, I also argue that particles in English are almost always predicated of overt FIGURE arguments corresponding to the lowest nP in a particle-verb construction, with a few exceptions that I discuss.[11] The analysis of particles as semantic predicates presented in Chapter 3 is intended to support the syntactic treatment of particle-verb constructions.

Chapter 4 provides the syntactic analysis of the particle-verb construction and explores its interaction with a range of syntactic data. The chapter begins with an overview of the crucial syntactic data to be accounted for and a preview of the main points of my analysis, after which the analysis is described in detail and applied to said data. The analysis is then extended in Chapter 5 to the set of complex particle-verb constructions.

Chapter 6 is split into two primary sections, both dealing with the morphosyntactic properties of particle verbs and related constructions. The first compares particle verbs with constructions bearing various types of prefixes, including 'prepositional' prefixes, particles that have been prefixed in some Scandinavian languages, and other prefixes that interact with particle verbs in various ways. The second section focuses primarily on English and

[11] I use of the terms FIGURE and GROUND to refer to the roles of prepositional arguments with respect to the preposition. I borrow this term from Svenonius (1994) and later works, himself adopting the term from Talmy (1978). Note that the FIGURE argument is not always the object of particle verb, as it generally corresponds to the subject of an intransitive particle-verb construction.

examines several word-formation processes involving suffixation or zero-derivation in which particle verbs participate, demonstrating how the proposed syntactic analysis can handle the data while at the same time highlighting some of the complexities in the data and suggesting explanations for them.

Finally, Chapter 7 concludes.

Chapter 2

PREVIOUS ACCOUNTS OF PARTICLE-VERB CONSTRUCTIONS

This chapter reviews the various analyses that have been proposed to account for the word order patterns seen in the particle-verb construction. I split the analyses up into small-clause analyses (§2.1), complex-head analyses (§2.2), analyses treating particles as syntactically independent non-projecting heads (§2.3), accounts in which the PF-interface plays a significant word in the word order (§2.4), and a host of additional accounts (2.5).

2.1 Small-clause Analyses

Small-clause accounts of particle-verb constructions argue that the particle heads a small clause whose subject corresponds to the 'object' of the particle verb. More specifically, small-clause analyses typically relate the particle-verb construction with the resultative construction, capitalizing on their similar syntactic and semantic properties, while attempting to account for the additional peculiarities associated with the particle-verb construction (e.g. the word-order alternation). Let us consider first the similarities in terms of their meaning, and then consider their similarities in syntactic behavior.

It is widely accepted by both SC-proponents and non-SC-proponents alike that many particle-verb constructions involve a resultative semantics. In many instances, the particle quite clearly indicates a result state; for example, if one *sends the boys away*, the result is that the boys are away from some salient location. Numerous particles also alternate with (what are arguably) small clause resultative secondary predicates headed by transitive prepositions with little apparent difference in meaning, with the exception that one of the arguments of the preposition is null: *John wiped {off} the dust {off}* vs. *John wiped the dust off the table*. These semantic similarities suggest that these particle-verb constructions should receive a similar (though certainly not identical) analysis as resultative constructions.

Syntactic similarities between particle-verb constructions and small clauses also serve to justify a similar treatment of the two constructions, though these similarities are predictably restricted to the discontinuous order. For example, the coordination of the subject and predicate of two small clauses is possible, as is coordination of two [nP prt] strings (provided the particles are highly transparent).

(18) a. America elected [Obama President] and [Biden Vice-President].

b. Bill switched [the TV on] and [the light off]. ((b) from Svenonius 1992:98)

A second example comes from Kayne (1985), who points out that subextraction from the left branch is prohibited in the cases of small clauses and discontinuous particle-verb constructions alike.

(19) a. The cold weather has gotten John's sister quite depressed.

b. * Who has the cold weather gotten the sister of quite depressed?

(Kayne 1985:103)

(20) a. The cold weather has worn John's sister out.

b. * Who has the cold weather worn the sister of out? (Kayne 1985:103)

Small clauses and particle-verb constructions also pattern alike in failing certain constituency tests, including topicalization and clefting, as noted in Svenonius (1992).[1]

(21) a. * It was [the safe undamaged] that the blast left ___.

b. * [Bush President], the fools elected ___. (Svenonius 1992:95)

(22) a. * It was [the formula up] that Gretchen looked ___.

b. * [The article out], Dirk cut ___. (Svenonius 1992:95)

Finally, both resultative small clauses and transitive particle-verb constructions may license unselected arguments; that is, they may license objects not otherwise selected for by the matrix verb.

[1] This is really only true of resultative small clauses. As pointed out by Farrell (2005:110f), some (non-causative) SCs can undergo topicalization (*Him in a kimono, I can hardly imagine*; example from Farrell) and clefting (*It is (just) him in a kimono that I want to see*).

(23) a. * John drank the pub.

b. John drank the pub dry.

(24) a. * John ran a few copies.

b. John ran a few copies off.

Although particle-verb constructions resemble small clauses in many regards, there are several complications that arise for such analyses. One of the main problems for the small-clause approaches is that they have not provided an account for the many cases in which a verb and particle undergo various types of word-formation processes. When small-clause proponents do mention word formation, the discussion is very limited both in the number of types of word-formation processes discussed (usually limited to *-ing*$_{of}$ nominalizations) and in the length at which the processes are discussed.

Let us consider some types of nominalizations particle verbs can be found in and relate them to nominalizations with resultative constructions (since SC analyses tend to related particles with resultative secondary predicates). First, many (though not all) particle verbs regularly occur in compound nominals, and there are many attested examples involving both transparent and nontransparent particles. To my knowledge, there are no cases where a verb and the (non-prepositional) head of its small-clause complement may be used as a compound nominal. This suggests that particle-verb constructions either do not head complements of SCs at all, or that they may optionally occur in a second, distinct structure. Examples are provided below.[2,3]

(25) V + Prt as compound nominal

a. a quick hand-off, a secret drop-off, a boorish show-off, a difficult break-up, a daring hold-up, an unfortunate set-back (Farrell 2005:103, adapted)

b. surface run-off, an illegal shake-down, give a shout-out (to one's fans)

[2] There does not seem to be any consistent convention for writing combinations of [verb + particle] as zero-derived nominals. In some cases, they remain separated by a space, sometimes a dash is place between them, and in other cases they are written together. There is also some variation among speakers for the same lexical items. I use dashes between the two roots.

[3] See Fraser (1976:27ff) for many more examples.

(26) V + SC head as compound nominal

a. * Causative: *the hammer-flat, the beat-dead, the paint-red*

b. * Noncausative: *the consider-intelligent, the watch-fall, ...*

A second type of nominalization which English particle verbs readily undergo is -*ing*$_{of}$ nominalizations. In -*ing*$_{of}$ nominals, the object of a particle verb follows the particle unless the particle is transparent, in which case some speakers allow the object to precede the particle. This contrasts with resultative small clauses occurring with derived nominals, where the object is generally required to precede the small-clause head, if it is allowed at all.

(27) a. John's calling up of the girl surprised me.

b. * John's calling of the girl up surprised me. (Fischer 1971:16)

(28) a. John's letting out of the cat surprised me.

b. % John's letting of the cat out surprised me. (Fischer 1971:16, fn 2, adapted)

(29) a. % The hammering of the metal flat is the most important step.

b. * The hammering flat of the metal is the most important step.

a. The placing of gifts underneath (a tree) is part of the Christmas tradition.

b. * The placing underneath (a tree) of gifts is part of the Christmas tradition.

As was the case for compound nominals, particle verbs in -*ing*$_{of}$ nominalizations behave differently from V + SC combinations, suggesting that particle verbs have a distinct structure. The behavior of transparent particles, which (marginally) occur in the same word order as SCs in addition to the order found with nontransparent particle verbs, leads to additional complications not addressed by SC analyses (see §6.2.2 for my own analysis).[4]

Particle verbs are also able to occur in pre-nominal adjectival passives, whereas resultative constructions may not. Note that both constructions may occur in adjectival passives

[4] The *ing*$_{of}$ nominalization and other nominalizations have not be entirely ignored by the small-clause accounts. Hoekstra (1988:114f) and den Dikken (1995:42) claim that nominalizations are impossible for particle-verb constructions and SCs alike, though they only give examples of *ing*$_{of}$ nominals in the [Ving of DP prt] order. Kayne (1985:102, 128ff) discusses nominalizations involving both orders.

involving raising verbs. This pattern has not received an account in any small-clause analysis of particle-verb constructions.

(30) a. the locked-up bicycle

b. the bicycle appears locked up

(31) a. * the hammered-flat metal

b. the metal appears hammered flat

Turning away from word-formation data, recall that I noted in the introduction that particle verbs may coordinate with a simple verb while sharing the same object, providing the example repeated below. I suggested that this was evidence that the verb and particle are able to form a complex head.

(3) John looked up and read the word's definition.

One might argue that this is really VP coordination with PF-deletion of the particle verb's object (=the small clause's subject) or perhaps involving rightward Across-the-Board movement of the object. That this is not the case is shown below, where we see that particle verbs with modified particles cannot be coordinated with simple verbs. This is reinforced in (33), where we see that while the particle verb *put on* can be coordinated with a simple verb, its counterpart with a transitive preposition cannot.

(32) a. John [picked up] and [kissed] his daughter.

b. * John [picked right up] and [kissed] his daughter.

(33) a. John [put on] and [adjusted] his hat.

b. * John [put ___ on his head] and [adjusted] his hat.

cf. John put his hat on his head and adjusted it.

As we see, the ability to coordinate particle verbs with simple verbs does not receive a straightforward analysis in small-clause accounts.

Dutch presents another complication for small-clause analyses. In the Verb Raising construction, unmodified particles may shift rightward with verbs whereas resultative

secondary predicates may not, as shown in (34). Den Dikken's (1995:78) small-clause analysis addresses this construction, arguing that particles may overtly incorporate into verbs in Dutch (but not English), but this runs into the inflection problem I will criticize many complex-head approaches for in the following section. Specifically, (35) shows that when the infinitive marker *te* is present in Verb Raising constructions, the particle cannot come between *te* and the raised verb. On the assumption that the infinitive marker is picked up as the verb raises into I^0, it should prefix onto the particle if the particle raises as part of a complex head with the verb.

(34) a. dat Jan is de informatie {op} t_i wilde {op} zoeken$_i$
that John is the information up wanted up search
'that John wanted to look up the information'

b. dat Jan zijn fiets {oranje} t_i wilde {*oranje} verven$_i$
that John his bike orange wanted orange paint
'that John wanted to paint his bike orange.' (Los et al. 2012:61, adapted)

(35) a. * dat Jan zijn pap niet ___ heeft proberen te op-eten.

b. dat Jan zijn pap niet ___ heeft proberen op te eten.
that Jan his porridge not has tried up to eat
'that Jan has not tried to eat up his porridge'

(den Besten & Broekhuis 1992:26, modified)

A final problem for small-clause accounts that treat particle-verb constructions as a special type of resultative construction is that particle verbs often lack a clear resultative meaning on the surface. For example, after one *looks a word up*, it is not possible to say that *the word is up*. Many particles have also be called 'aspectual'; for example, the particle *up* in constructions like *clean up one's room* has been called a marker of completion. But if particles are not uniformly resultative, then one must ask whether it is appropriate to treat them all in the same manner, and specifically whether it is appropriate to treat them all as a type of resultative. I wish to point out that although I state this as a problem for the small-clause analyses (those reviewed here do not address this matter in any detail), the semantic analysis of particles I provide in Chapter 3 argues that all particles are semantic predicates

and that particle-verb constructions can generally be viewed as a type of (broadly defined) resultative construction.

2.1.1 Kayne (1985)

Kayne (1985) offers one of the first small-clause accounts of particle-verb constructions, and it stands out for emphasizing the importance of complex particle-verb constructions. I begin, however, by reviewing his account of simple particle-verb constructions.

2.1.1.1 Simple Particle-verb Constructions

Kayne argues that the particle in a particle-verb construction is the head of a small-clause complement to the verb, with the object NP base-generated in the specifier position of the small clause. This is also the surface structure of the discontinuous order.

(36) $[_{IP}$ John $[_{VP}$ $[_{V'}$ looked $[_{SC}$ $[_{NP}$ the information] $[_{SC'}$ [up]]]]]]

The continuous order involves extraposition of the NP, which adjoins to $\bar{\text{V}}$.[5] This extraposition is due to a type of Heavy-NP Shift (HNPS) determined by relative weights assigned by Kayne, as formulated in (37).

(37) In ...[e]$_i$ X NP$_i$..., where NP$_i$ binds [e]$_i$ NP$_i$ must be at least as heavily weighted as X

Weightings: heavy NP=2, ordinary NP=1, pronoun=0, particle=1, right+Prt=2

(Kayne 1985:127)

The stipulated weights of pronouns and particles accounts for the requirement that pronominal objects precede rather than follow particles in normal circumstances, since lighter material cannot extrapose across heavier material (shown in (38)). Additionally, the stipulation that *right* + Prt is heavier than an ordinary NP accounts for the fact that *right*-modified particles may only follow object NPs (shown in (39)).

[5] Kayne (1994:76f) abandons this account with the proposal of his Antisymmetry approach to syntax, which bars rightward movement. If we do not adopt Antisymmetry, rightward movement remains a possibility.

(38) John looked {*up} it {up}.

(39) John looked {*right up} the word {right up}.

Kayne's HNPS account of the word-order pattern has been criticized by Svenonius (1992) and den Dikken (1995), who note that if the object NP undergoes extraposition, it should be able to appear to the right of other modifiers within VP. This is, however, not the case. NPs in the discontinuous order appear directly after the particle but precede other modifiers under normal circumstances (e.g. when unfocused, non-heavy).

(40) a. Jason lined up the bottles on the wall.

b. Jason lined [the bottles up] on the wall.

c. * Jason lined [___ up] on the wall the bottles.

((b)-(c) from Svenonius 1992:107)

2.1.1.2 Complex Particle-verb Constructions

As mentioned above, Kayne focuses considerable attention the complex particle-verb constructions; specifically, Kayne attempts to explain the patterns in the sentences below.[6]

(41) a. John turned {out} intelligent {*out}. (Kayne 1985:107)

b. He ended {up} a linguist {*up} (Kayne 1985:107)

c. They handed {*?down} John {down} the tools{*down}. (Kayne 1985:116)

d. They're trying to make {*?out} John {out} a liar {*out}. (Kayne 1985:108f)

Kayne assumes that each structure above involves a small clause which takes a particle-headed small clauses as its subject. Thus, the examples in (41) all share the structure in (42).[7]

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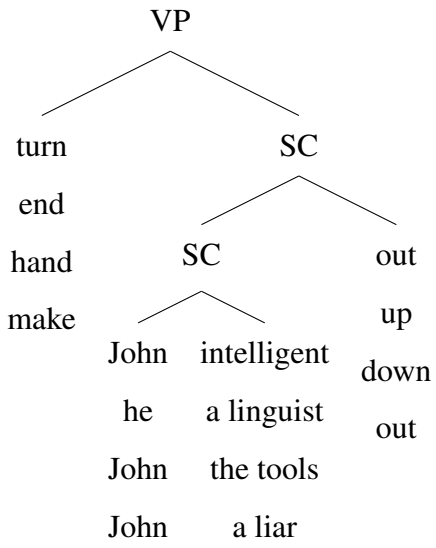
[6] I ignore Kayne's attempt to account for various *wh*-extraction data from these complex particle-verb constructions. See also footnote 1 in Chapter 5.

[7] I have not found speakers who allow the *make out John a liar* construction, regardless of the order of the particle. Nonetheless, speakers agree with the relative judgments Kayne provides, and the order in which the particle appears between both objects is sufficiently attested online to confirm that people do use this construction. A more appropriate judgment label for the order *make John out a liar* would be %.

(42)

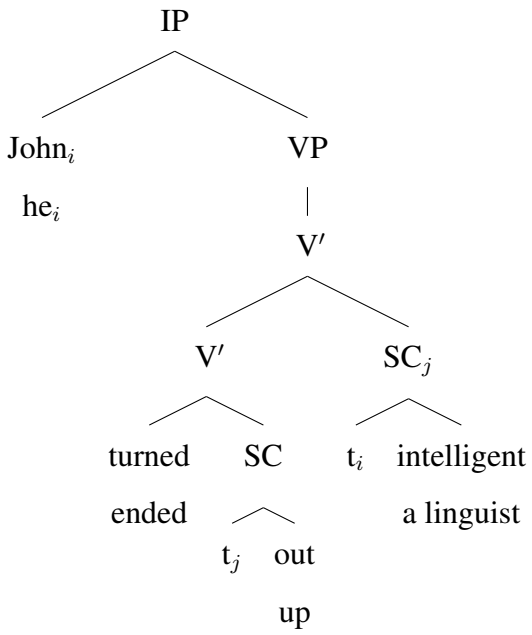


Crucial to the structure above is the presence of two maximal small-clause projections, which is claimed to prevent government by the verb into the embedded small clause. In the case of (41c) and (41d), the particle-final order is bad because the verb does not govern *John*/*he* across the two small-clause boundaries in the structure in (42); as a result, it cannot assign Case to *John*/*he*. In the case of the raising constructions in (41a) and (41b), the ungrammaticality of the particle-final order results instead from an ECP violation, as neither the subject antecedent nor the verb can govern the trace of the moved NP across two small-clause boundaries. The ungrammatical structure of the particle-final order for these two examples is provided below.

(43) * [$_{IP}$ John$_i$ [$_{VP}$ turned [$_{SC}$ [$_{SC}$ t$_i$ intelligent] out]]]

To derive the grammatical orders for the raising constructions, Kayne claims that the inner small clause is extracted and adjoined to $\bar{\text{V}}$. From here, the NP subject of the inner small clause can raise to subject position, and the verb—now separated from the subject's trace by only one small clause boundary—can properly govern the subject's trace.

(44)



To derive the grammaticality (for some speakers) of (41d) when the particle appears between the two objects, Kayne argues that *a liar* moves rightward, adjoining to $\bar{\text{V}}$ or the outer SC, as represented in (45). In doing so, Kayne claims that the inner small clause is no longer a barrier to government due to what he calls the L-containment requirement, which he formalizes as in (46).

(45) ... make [[John [e]$_i$] out] a liar$_i$ (Kayne 1985:110)

(46) In [$_\alpha$ ...Y...], α can count as a barrier to government for Y only if ... ... contains lexical material (Kayne 1985:113)

The claimed ungrammaticality of (41d) when the particle precedes both objects is accounted for as follows. The entire inner SC must be moved rightward to derive the post-particle word order, thus it adjoins to either the outer SC or $\bar{\text{V}}$. If it adjoins to the outer SC, *John* is still separated from *make* by two maximal projections and cannot receive Case. Likewise, if the inner SC adjoins to $\bar{\text{V}}$, *John* is not in the right configuration with respect to *make* to receive Case.

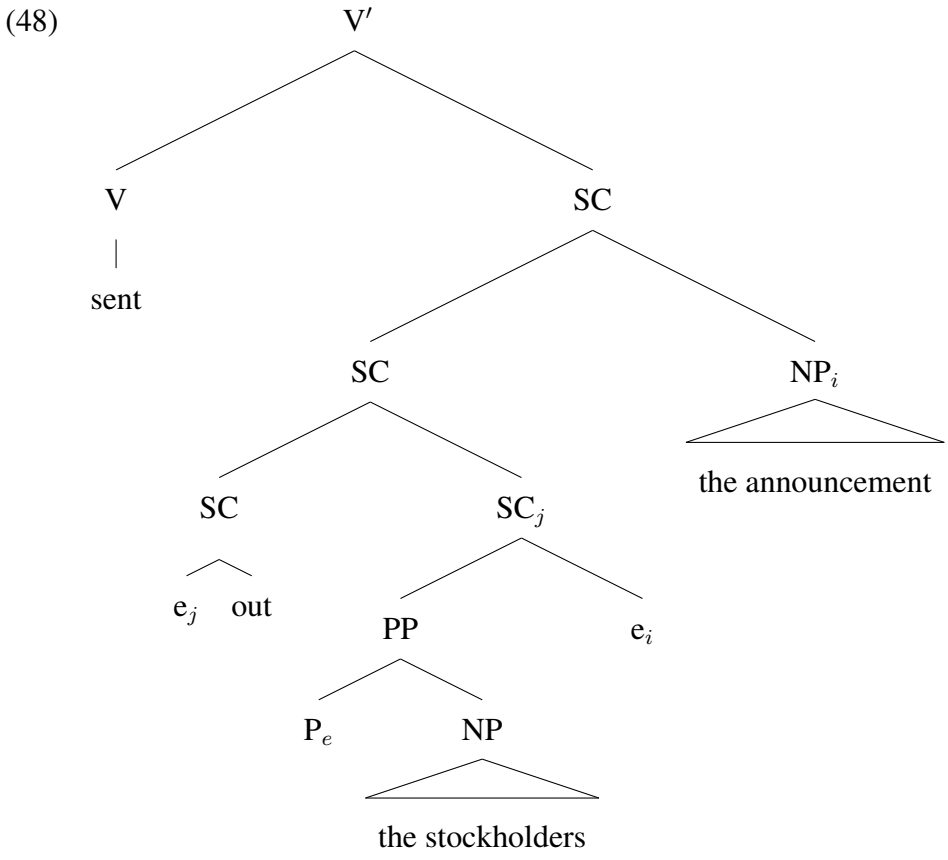
The double-object construction in (41c) is accounted for in a similar fashion to (41d), though Kayne proposes that *John* is actually contained within a PP headed by a null preposition indicating possession. Case is assigned by the verb to the null-headed PP, which transmits Case to *John*.

Finally, Kayne revises the judgment *? in (41c) when the particle precedes both objects, noting that some speakers find such sentences grammatical.

(47) % The board sent out the stockholders an announcement (Kayne 1985:120)

Kayne hypothesizes that the variation in judgments in examples like (47) is due to added complexity in their derivation, which he claims involves two rightward movements, as shown in the following tree. Note that Case is transmitted to *the stockholders* via P_e. Crucially, the L-containment requirement provided above makes it possible for both NPs to receive Case from the verb.

(48)



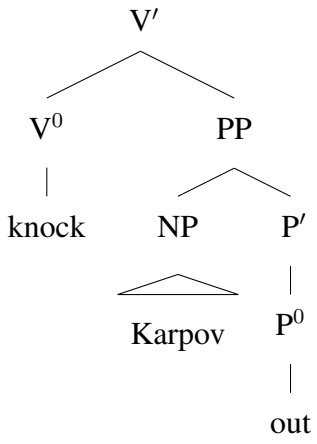
In addition to the problems with extraposition described in the previous section, there are several problems with Kayne's analysis of complex particle-verb constructions. Den Dikken (1995) highlights several theory-internal problems with Kayne's account, at least one of which remains valid in more recent frameworks. Whereas Kayne's account crucially relies on the ability of small clauses to extrapose, den Dikken (1995:47) points out that small clauses are unable to move as a unit; for example, topicalization or rightward movement of *John a fool* in the grammatical sentence *I do not consider John a fool* yields an ungrammatical sentence: **John a fool, I do not consider* and **I do not consider currently John a fool*.

An additional problem relates to Kayne's treatment of the small clause of possession in the double-object construction in (41c) as the subject of the particle in the same manner as the small clauses in the other constructions in (41). As a result, one must treat the entire proposition *John (have) the tools* as being 'down' in some sense, rather than the more plausible interpretation of *the tools* being 'down', which is the natural interpretation. Note that the other constructions in (41) do not run into the same problem; for example, if one is attempting to *make John out (to be) a liar*, it is the claim *John (be) a liar* that one is attempting get *out* (cf. *shout out the truth* / *shout out that John is a liar*).

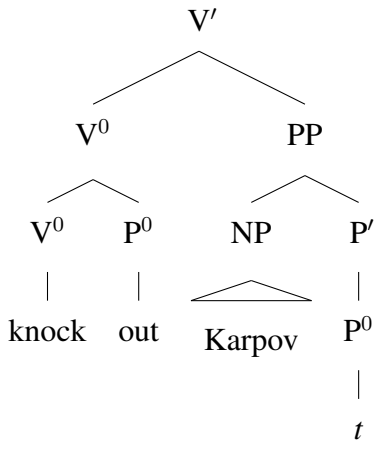
2.1.2 Svenonius (1992)

Svenonius (1992) follows Kayne (1985) in taking particle-verb constructions to involve a particle-headed small-clause complement of a verb, where the particle verb's object originates in the subject position of the small clause; however, Svenonius differs is that he does not assume Heavy-NP Shift to be the source of the word-order alternation. Instead, Svenonius claims that the particle optionally right-adjoins to the verb, leading to the continuous word order. The discontinuous and continuous orders as Svenonius derives them are represented in the structures in (49a) and (49b), respectively.

(49) a.



b.



(Svenonius 1992:104)

Svenonius accounts for the different behavior of particles and transitive prepositions with respect to their ability to appear in the continuous word order by tying the derivation of the continuous order above in to Baker's (1988:122) Case Frame Preservation Principle. This principle prevents a complex verb derived via incorporation from assigning more or different Cases from the underived verb. Consider the effects of this principle on the following sentence, which contains both a FIGURE and GROUND argument (in the sense of Talmy (1978)), and which does not allow the preposition to right-adjoin to the verb.

(50) a. Jeff broke a stalactite off the ceiling.

b. * Jeff broke off a stalactite __ the ceiling. (Svenonius 1992:109)

Although Svenonius assumes that (50a) has essentially the same structure as (49a), because it additionally has a complement which requires Case, the preposition may not incorporate into the verb; otherwise, it would be unable to assign Case to its underlying complement.

To account for the ability of particles to be modified by *right*, Svenonius assumes that *right* is a bare head that adjoins to $\bar{\text{P}}$. *Right* may not appear after a particle (e.g. **blurted out the answer right*) as it would prevent the V + particle complex from governing the particle's trace, since *right* would be a closer potential governor (assuming Rizzi's (1990) definition of government).

Finally, Svenonius provides an account for the appearance of Subject Condition effects in discontinuous particle-verb constructions and the lack thereof in continuous particle-verb constructions, as demonstrated in the following examples.

(51) a. ?* Who did you tear a picture of ___ up?

b. ?* What have you poured a bottle of ___ out? (Svenonius 1992:111)

(52) a. Who did you tear up a picture of ___?

b. What have you poured out a bottle of ___? (Svenonius 1992:111)

Svenonius follows Chomsky (1986) in treating the Subject Condition effects above as a violation of Subjacency, since the *wh*-phrase must have crossed two barriers (PP and NP) in (51) in his account. In order to prevent subjacency from being violated in the continuous order while allowing it to be violated in the discontinuous order, Svenonius builds an explanation based the ability or inability to L-mark the subject of a small clause. He takes as a necessary condition for L-marking θ-marking under c-command. In (51), the θ-assigner P is unable to L-mark the NP in its specifier because P does not c-command the NP. In contrast, when the particle incorporates, the V + particle complex c-commands the object NP, and the particle is able to θ-mark—hence L-mark—the object NP. As a result, there is no Subjacency violation in the examples in (52) and the sentences are correctly predicted to be grammatical.

By claiming that a particle overtly incorporates into the verb, Svenonius runs into the common problem of lacking an explanation for how and why verbal inflection attaches to the verbal portion of the complex head rather than the particle. Related to this same claim, Svenonius' account does not explain why a verb and particle may (presumably must) be split up in the Northern Irish English sentence below (see §4.4 for other relevant examples).

(53) Take you out them clothes to the kitchen! (Svenonius 1994:Ch. 3, fn 4)

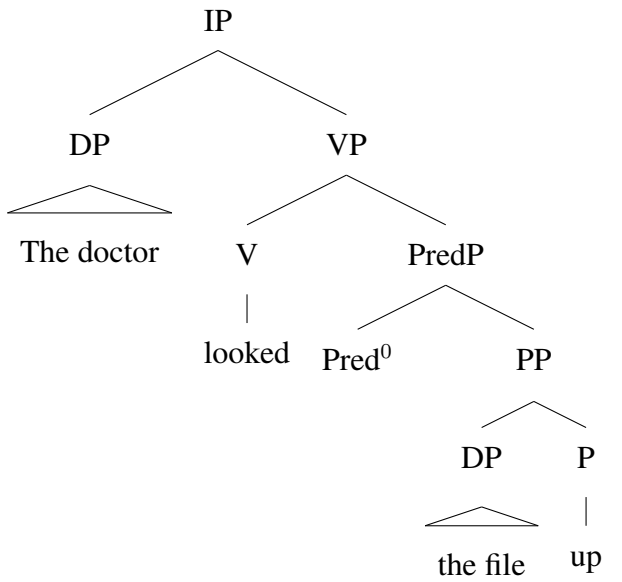
Here, the particle must have incorporated into the verb to get into pre-object position; the verb, then, must be able to excorporate, but this mechanism itself is problematic (see §4.1.1.2.2).

2.1.3 Svenonius (1994) through Ramchand & Svenonius (2002)

In this section, I discuss the structures of particle verbs argued for in Svenonius (1994), an account which is defended in Svenonius (1996a), Ramchand & Svenonius (2002) and other papers during this time period. Although some of the assumptions about the relationship between semantics and syntax may have changed over this time period, the syntactic structure has remained essentially unchanged.

Svenonius (1994) contains number of significant differences from Svenonius (1992). First, Svenonius follows Bowers (1993) in claiming that small clauses contain a functional head, which Svenonius labels Pred(icate)P. The particle verb's object DP is taken to originate in the specifier position of the particle-headed PP complement of Pred^0. A representation of the underlying structure is provided below.

(54)

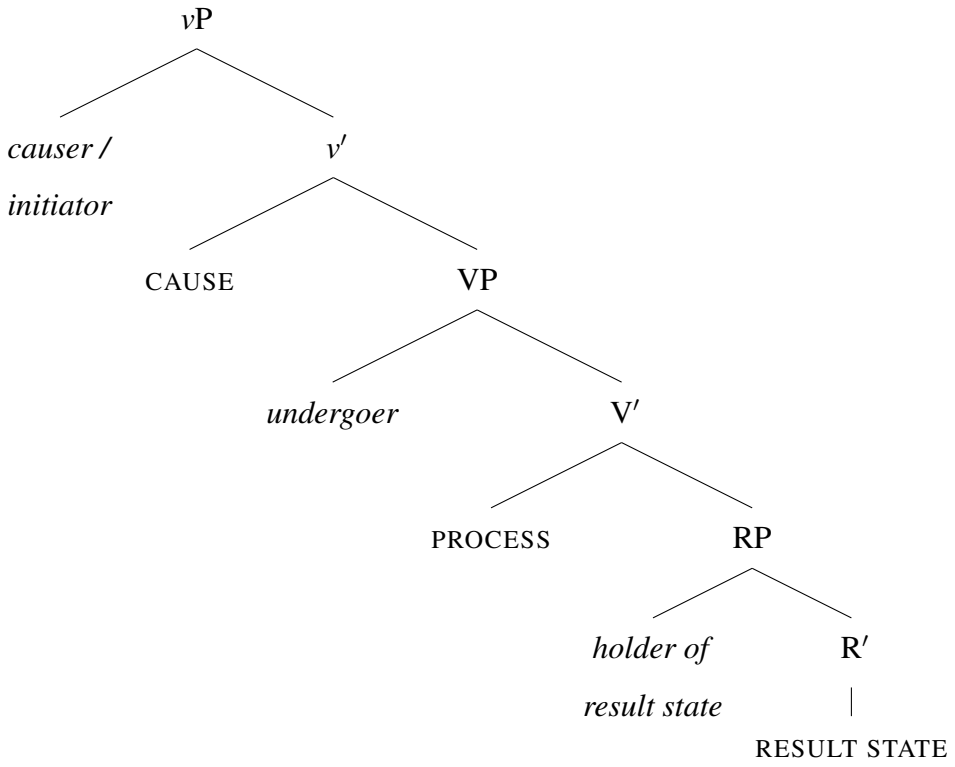


(based on Svenonius 1994:Ch. 3, p. 28)

In more recent work, Ramchand & Svenonius (2002) argue that particle-verb constructions, and resultatives in general, involve a complex event represented within a single argument structure. They assume that events are maximally decomposed into three heads, each associated with a particular subevent: *v*P is associated with the causing subevent, VP with the process subevent, and RP with the result state. DPs occupy the specifier positions of

these heads, where they receive the interpretations of causer/initiator (*v*P), undergoer (VP), and holder of result state (RP).

(55)



Other than tying a semantic representation of complex events to the syntax, and the use of an extended-VP-style analysis, the relative structures of the particle-verb construction remain essentially the same. The particle heads a PrtP complement to R^0, corresponding the PP and $Pred^0$ in the 1994 structure.

Despite the slightly different structures, the word-order difference is accounted for in the same way in both structures above, and I will describe the alternation based on the 1994 structure. Unlike many accounts of particle-verb constructions, which treat one order as the underlying order, both word orders are claimed to involve movement of either the particle or the object DP (in a transitive particle-verb construction). In the discontinuous order, shown in (56a), the DP raises to SpecPredP, while the particle raises to $Pred^0$ in the continuous order. Because both moves are equally 'short', neither order violates Chomsky's (1993) Economy principles which would otherwise rule out 'optional' movements. Here and below, I use *e* to

indicate a phonologically empty position, which is not necessarily semantically empty.[8]

(56) a. Discontinuous

1994: [$_{IP}$ The doctor [$_{VP}$ looked [$_{PredP}$ the file$_i$ [$_{Pred'}$ *e* [$_{PP}$ t$_i$ up]]]]]

2002: [$_{vP}$ AGT throw-*v* [$_{VP}$ UNDR t_V [$_{RP}$ the rat R [$_{PrtP}$ t_{DP} [$_{Prt}$ out]]]]]

b. Continuous

1994: [$_{IP}$ The doctor [$_{VP}$ looked [$_{PredP}$ *e* [$_{Pred'}$ up$_i$ [$_{PP}$ the file t$_i$]]]]]

2002: [$_{vP}$ AGT throw-*v* [$_{VP}$ UNDR t_V [$_{RP}$ HOLDR out-R [$_{PrtP}$ the rat [$_{Prt}$ t_{Prt}]]]]]

(2002 examples from Ramchand & Svenonius 2002:394)

Svenonius (1994, 1996a) and Ramchand & Svenonius (2002) suggest movement of the particle or DP may be triggered by the existence of a type of EPP feature, labeled [N] in Svenonius (1996a), located in PredP which can be satisfied by either type of movement. Nouns have the feature [N] by default, and Svenonius suggests that particles obtain the feature by incorporating an abstract nominal complement. While the [N] features on Pred^0 are strong, requiring movement of either the particle or DP, the [N] features on the particle and DP are weak, thus neither is specifically required to raise.[9,10]

Svenonius (1994) demonstrates how this analysis is able to quite successfully account for the distribution of a number of phenomena when used with the particle verbs, including

[8] Svenonius (1996a) and Ramchand & Svenonius (2002) both assume additional movement at LF. In Ramchand & Svenonius (2002), DPs are allowed to occupy more than one specifier position throughout the derivation, receiving a different theta-role at each level in the structure (55) they occupy. Thus, in *throw the dead rat out*, the DP *the dead rat* fulfills the roles of both 'undergoer' and 'holder of result state'. The particle-verb object originates as the specifier of the PrtP, and by the end of the derivation, it must raise into the specifier position of each subevent for which it fulfills a role; for example, in *throw the dead rat out*, *the dead rat* must raise all the way to SpecVP by LF.

[9] Svenonius (1994) initially suggests an alternative motivation for movement which is based on the object DP's need for Case, but this is abandoned in Svenonius (1996a). In this alternative account, the DP would receive Case by raising to SpecPredP, or alternatively the particle would form a 'Case-chain' with the verb if it raised to Pred^0 and be able to assign Case to the DP in SpecPP.

[10] As an alternative, Ramchand & Svenonius (2002) suggests that there might be a requirement that subevents must be identified by overt lexical content, as proposed in Ramchand (2002).

right-modification, *completely*-modification, quantifier-float, the inability of non-DP 'arguments' to precede the particle, etc. These successes carry over to the more recent analysis, and although I will not review his analyses of these here, some of his arguments and data will be brought up in my own account later.

In addition to the successes highlighted in Svenonius (1994), one piece of support for the analysis in Ramchand & Svenonius (2002) is that when a particle and verb appear to assign θ-roles to the same argument, it is always the lowest argument which receives the two θ-roles. For example, in *John jumped up*, *John* gets a θ-role from *jump* and *up*, but in *John wiped the dust off*, *the dust* gets a θ-role from *wipe* and *off*. There are no transitive particle-verb constructions in which the verb and particle assign θ-roles to the verbal subject while the verb assigns an additional θ-role to the object (as we can see in some depictives). This follows naturally from the structure provided in Ramchand & Svenonius (2002).

Despite its successes, Svenonius' account has its shortcomings. The first problem regards the motivation of particle movement based on the EPP. As support for this claim, Ramchand & Svenonius (2002) remind us that transitive prepositions, unlike particles, do not participate in a word-order alternation with verbal objects, because they have not semantically incorporated an abstract GROUND element, and thus they have no way to receive the feature responsible for checking the EPP feature in PredP/RP. While this seemingly provides a nice distinction between particles and prepositions, it is not clear why prepositions with (plausibly) overtly incorporated nouns, such as *upstairs*, do not behave as particles, as the following example shows.[11]

(57) I sent {*upstairs} the employee {upstairs} to check the stock room.

A second problem involves the motivation for particle or DP movement, which runs into a problem when we examine *-ing*$_{of}$ nominalizations. Svenonius (1994) assumes that some particles are only optionally intransitive, such as that in (58). In (58), *the melted cheese* occupies the same position as the subject of any other particle, while *the toast* is the particle's

[11] On the other hand, their explanation would explain why the so-called a-adjectives (e.g. *aboard*, *abaft*) exhibit the word-order alternation of particles. They consist of a prepositional head *a-* (historically from Middle English *on* or French *à*, depending on the word) and an overt nominal element, at least when viewed historically.

complement. Svenonius refers to the preposition in the transitive cases as a particle, even though the particle's position is fixed when the complement is present.[12] The only structural difference, then, is that intransitive particles simply lack a complement.

(58) We scraped the melted cheese off (the toast). (Svenonius 1994:Ch. 3, p. 28)

Unlike intransitive particles, the transitive particles are not able to raise to Pred^0, as the following demonstrate.

(59) a. * We scraped off the melted cheese the toast.

b. * They chased in the kangaroos the house.

c. * I pushed out the cow of the house.

Svenonius claims that because the (transitive) particle already assigns Case to its complement, it cannot enter into a Case chain needed to assign Case to its 'subject' DP (see Ch. 3, p. 36 and references therein; see also fn. 9 in this section). Alternatively, because transitive particle lacks an [N] feature (since it has not incorporated its complement), raising it to Pred^0 would not check Pred's [N] feature. Thus, in order for the [N] feature in PredP to be checked (or for the 'subject' DP to receive Case, as in Svenonius' original argument), Svenonius' argumentation would require the first object DP in the examples above to raise to the specifier position of PredP.

Now, consider the distribution of particles in -*ing*$_{of}$ nominalizations.

(60) a. the scraping of the melted cheese off the toast

b. * the looking of the information up

c. the looking up of the information

[12] This claim is not unique. Åfarli (1985:79) and Taraldsen (2000:102) claim that there are PPs in Norwegian which may behave like particles, as the following example suggests. If this is a particle, then it poses a problem for the account I will pursue below.

(i) Vi tok {av oss} jakkene {av oss}
we took off us coats.the off us
'We took the coats off us' (Åfarli 1985:79, modified)

Example (60a) shows that the transitive particle does not need to raise to Pred^0 in nominalizations to check the EPP feature in PredP; instead, the DP *the melted cheese* has apparently risen to SpecPredP. Contrast this with nominalizations with nontransparent intransitive particles, which are only grammatical when they precede the object.[13] If *the melted cheese* in (60a) raises to check an EPP feature and is able to be Case-marked by *of* in SpecPredP, it should be able to do so in (60b) as well, but this is not the case.[14] If instead neither the DP nor the particle move in -*ing*$_{of}$ nominalizations, the discontinuous order in (60b) should arise, contrary to the actual data.

A third problem with Svenonius' account is the set of complex particle constructions highlighted by Kayne (1985), which Svenonius does not discuss. Consider the *make out* + SC construction, exemplified below with Kayne's judgments. The underlying structure these would presumably receive in Svenonius' account is provided in (62).

(61) a. * We made John a liar out.

b. *? We made out John a liar.

c. We made John out a liar.

(62) [$_{VP}$ made [$_{PredP}$ *e* [$_{Pred'}$ *e* [$_{PP}$ [$_{SC}$ John a liar] [$_{P'}$ out]]]]]

The ungrammaticality of (61a) suggests that *John* is unable to receive Case *in situ*, nor is it able to raise to SpecPredP. (61b), somewhat better than (61a), could be derived if the particle raised to Pred^0, but presumably it has difficulty transmitting Case into the specifier of the specifier of its head. What is now entirely unexpected is the grammaticality of (61c) for some speakers. This would require both *John* and the particle *out* to raise into PredP, which is not motivated in Svenonius' account. Moreover, if *John* could raise into SpecPredP in (61c), there is no obvious reason this should not be possible in (61a).

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[13] When the particle is transparent, the post-object placement of the particle becomes better for some speakers, with a great deal of variability. The pre-object order is always preferred.

[14] If the motivation for the particle to raise is to allow Case transmission to an object, as originally argued in Svenonius (1994), then there is no motivation for particle movement in (60c), since the DP already receives Case.

Another aspect of Svenonius (1994) and Ramchand & Svenonius's (2002) account that seems problematic is their treatment of adjectival resultatives *vis à vis* resultatives involving particles or prepositions. In the latter type of resultatives, the 'subject' of the PrtP/PP is taken to originate in the specifier position of the head's projection (i.e. SpecPrtP or SpecPP). In the former type, however, the 'subject' is taken to originate not in SpecAP, but rather in SpecRP, despite the adjectival head projecting an AP complement of R^0. While this successfully renders movement of the adjectival head unnecessary (the EPP feature in RP is checked by the DP base-generated in SpecRP) and distinguishes particle-headed resultatives from other resultatives, it fails to account for the existence of adjectival particles such as *open* and *short* (let alone nominal and possibly even verbal particles found in some Germanic languages). Treating prepositional resultatives as somehow exceptional is insufficient.

Finally, Ramchand & Svenonius (2002) briefly note that there are some nontelic particle verbs which do not involve a resultative semantics, which is problematic on their assumptions, where RPs force telic readings. They briefly suggest, and reject, a nontelic projection SP in complementary distribution with RP. Part of their reason for rejecting the projection is the supposed rarity of nontelic particles. But despite the frequency of the claim that particles are markers of telicity, this is quite often not the case. There are a large number of atelic particle uses, just a few of which are exemplified below.

(63) a. John slowly turned down the volume for 10 seconds. Then he turned it up again.

b. It was too hot, so I cooled down the house for 20 minutes.

c. We slapped around the new recruits for a few minutes before beginning the meeting.

d. John pounded away at the wall for several hours.

It would seem that Ramchand & Svenonius (2002) do need something like SP to account for atelic particles.

2.1.4 Den Dikken (1995)

2.1.4.1 Simple Particle-verb Constructions

Den Dikken (1995) argues that particles in particle-verb constructions head small-clause complements to V, but unlike the accounts found in Kayne (1985), Svenonius (1992) or Svenonius (1994), he claims that particles are ergative, taking the 'object' of the particle verb as their complement rather than their specifier.[15] Although den Dikken (1995:24-27) suggests that the apparent optionality of the word order alternation in English might be derived by the presence or absence of functional structure, he adopts the following representation of simple particle-verb construction throughout.

(64) $[_{VP}$ looked $[_{SC}$ $[_{PP}$ $[_{P'}$ up $[_{NP}$ the information]]]]

In the structure above, the NP is not in a Case position, the particle being ergative. The discontinuous order is rather straightforwardly derived by raising the NP into the specifier position of SC, where it is able to receive Case directly from the verb via Exceptional Case Marking. In contrast, the continuous order involves the structure in (64) in the overt syntax, accompanied by incorporation of the particle into the verb at LF. By incorporating the particle, the governing domain of the verb is extended in accordance with Baker's (1988:64) Government Transparency Corollary, allowing the verb to transmit Case to the complement of (the trace of) the particle at LF.

We have noted above that particles may only take *right*-modifiers in the discontinuous order. Den Dikken (1995:106ff) claims that it is the obligatory reanalysis of the verb and particle in the continuous order that prevents particle-modification from occurring. Although he explores several possible ways to ensure this, the 'most felicitous' one (which he adopts in den Dikken 2010) is based on an analysis by Koopman (1993). Koopman suggests that (the Dutch equivalent of) *right*-modifiers head their own phrases (e.g. DegP) between a verb and particle. Because this head intervenes between the verbal head and particle head, incorporating the particle into the verb would violate Relativized Minimality (cf. Guasti 1991). This means that the object NP must raise to SpecSC in order to receive Case, so

[15] Guéron (1990), which I do not review here, has also argued that particles are ergative.

only the discontinuous order will arise when *right* modifies the particle. I return to *right*-modification when I discuss complex particle-verb constructions below.

(65) $[_{VP}$ V $[_{SC}$ ... $[_{XP}$ $[_{X}$ right] $[_{PP}$ Prt]]]] (den Dikken 1995:110)

Den Dikken's account is certainly one of the most well-known accounts of particle-verb constructions, and numerous critiques have been raised about den Dikken's treatment of simplex particle-verb constructions (see e.g. Svenonius 1994:§2.7). Here, I focus only on his claim that particles are ergative. Svenonius (1994) and Ramchand & Svenonius (2002) point out that, despite den Dikken's strict adoption of Baker's (1988) UTAH, by treating particles as ergative den Dikken violates UTAH by failing to account for the FIGURE-GROUND distinction in PPs. For example, in the sentences below, *his hat* has the same role in both the sentence headed by the transitive preposition and the particle-verb construction. In (66a), *his head* is presumably the complement of the transitive preposition *off*, which leaves only the specifier position of a projection of *off* available for *his hat*. In contrast, den Dikken's account would treat *his hat* in (66b) as the complement of the preposition. Thus, the same θ-role is assigned to different positions of the projection of P in the structures below, contra UTAH.

(66) a. John took his hat$_{figure}$ off his head$_{ground}$

b. John took {off} his hat$_{figure}$ {off}.

Den Dikken (2003:4) has since modified his stance on the ergativity of the particle, based on sentences like those in (66). Instead, den Dikken says, "It would presumably be wrong, therefore, to insist that particles are *systematically* unaccusative/ergative—but that does not mean that they never are..." (p. 4). If we grant that at least some particles are unergative, den Dikken's account is unable to account for the continuous word order. This is because object NPs of these unergative particles would be generated in the specifier of SC, to the left of the particle which incorporates into the verb only at LF.

2.1.4.2 Complex Particle-verb Constructions

Den Dikken (1995) is one of few authors other than Kayne (1985) to seriously examine complex particle-verb constructions. Among the constructions he examines are the following. Judgments provided are his.[16]

(67) a. They turned *out* (to be) **intelligent**.

b. They painted {*?up} the barn {up} **red** {*up}

c. They put {down} the books {down} **on the shelf** {*down}.

d. They made {*?out} John {out} **a liar** {*out}.

e. They made {(?)out} John {out} **to be a liar** {*out}.

(den Dikken 1995:36, 55f, adapted)

While den Dikken claims that the complement of a particle in simple (transitive) particle-verb constructions is a NP, in complex particle-verb constructions like those above, he argues that the particle's complement is a small clause or an infinitival clause. The underlying structure den Dikken proposes for the complex particle-verb constructions in (67) is provided below (den Dikken (p. 60) treats *to*-infinitival phrases as PPs).

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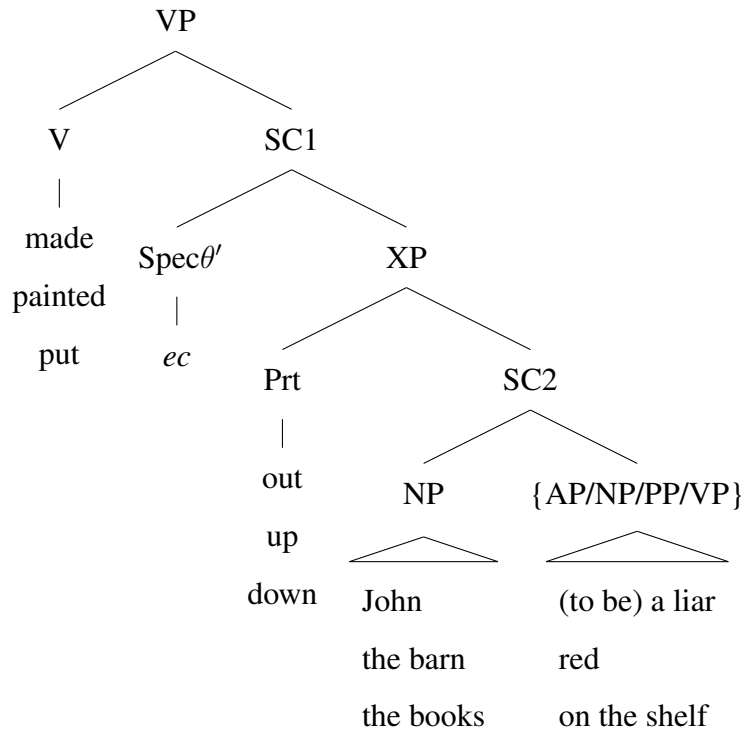
[16] Den Dikken (1995) also proposes an analysis of particle verb in double-object constructions and prepositional datives, but I do not discuss these here.

(68)



The complex particle-verb construction in (67a) is unaccusative, thus only one order appears, with the NP presumably raising from SpecSC2 to SpecIP. Den Dikken proposes that the object NPs in (67b) and (67d) obligatorily raise to SpecSC1 because the particle is unable to assign Case across SC2 in these cases, which is a barrier to government. Specifically, Den Dikken (p. 56) treats particles as non-lexical prepositions, so they are unable to L-mark their complements (here, SC2) (see Chomsky 1986 on Barriers and L-marking). Den Dikken argues that NP traces are not subject to the ECP (pp. 8ff), so raising the NP does not violate the ECP.

Even if we accept these claims, there are several problems with this account. First, the XPs *John (to be) a liar*, *the barn red* and *the books on the shelf* are all treated as if they had the same relation to the particles they are paired with, but this is not the case. In the *make out* construction, the proposition *John (to be) a liar* is what goes *out* (e.g. *a rumor that John is a liar got out*; *the news is out*), so it is the semantic 'subject' of *out* (i.e. its FIGURE argument). In contrast, in the *put down* construction, it is *the book* rather than *the books* BE *on the shelf* which ends up *down*. A strict view of UTAH should require these to have

different structures.[17]

Second, *right*-modification does not appear to be possible in constructions like (67a) or (67e) (e.g. *they turned (*right) out to be intelligent*). This is unexpected in den Dikken's analysis, because *right* modification was ruled out by den Dikken only when the particle raises, which it does not do in these constructions.

Third, the analysis does not account for the contrast between the order where the particle precedes the object NP and when it follows the entire complex. In fact, the order in which the particle precedes the object NP is actually possible, at least in examples like (67b) (e.g. *cut up the onions real small* is well attested), so not only should the aforementioned contrast be accounted for, but the pre-object order should not be ruled out syntactically (this will be discussed with additional examples in §5.4).

2.2 Complex-head Analyses

Whereas the small-clause analyses in the previous section might be said to focus on the phrasal properties of particle verbs, the complex-head analyses—which claim that the verb and particles together form a single word—take advantage of the word-like properties of particle verbs. The apparent word-like properties of particle verbs include the often opaque meaning of particle verbs when compared to the literal meanings of their parts (e.g. *make out* 'engage in heavy kissing'), the differences in valency and selectional restrictions found with verbs and particle verbs they occur in (e.g. *drown an animal/*a sound* vs. *drown out a sound/*an animal*), the ability of particle verbs to participate in various word-formation processes (e.g. *a locked-up bicycle*), and certain syntactic behaviors that suggest particle verb are at least sometimes syntactic heads (e.g. the coordination pattern in (3)). Many of these properties do not, in fact, require a treatment of particle verbs as words, and the evidence that particles are syntactically separable from the verb strongly suggests that any

[17] The relationship between the XP *the barn red* and the particle *up* is less straightforward, but I claim that *the barn* receives a FIGURE role from the particle. A partial examination of *up* is provided in §3.2.2.3.11, and my treatment of constructions like (67b) is found in §5.4.

analysis of particle verbs which adopts only a complex-head structure will fail to capture all of the relevant facts.

A number of the apparent word-like characteristics of particle verbs that have served as support for various complex-head analyses turn out to be applicable to phrases as well, and thus do not provide strong evidence that particle verbs are words (see Los et al. 2012 for similar argumentation). The fact that many particle verbs lack transparent meanings does not require them to be treated as words, given the existence of many phrasal idioms, including those with movable parts (e.g. *let the cat out of the bag* / *the cat got out of the bag*). Moreover, scholars have become aware that many or most particles have one or more regularly occurring meanings that arise in combination with sets of verbs, such that particle verbs may be viewed as having compositional meanings rather than simply noncompositional, purely idiomatic meanings.

The ability of particles to alter the valency or selectional requirements of a verb also does not indicate a word-like status. For example, combining a verb with a resultative secondary predicate may force the construction to take an 'unselected' argument, such as in the sentence *John ran the soles of his shoes *(bare)*. Despite this type of effect, few would argue that the verb and resultative secondary predicate form a single word. Most scholars appear to accept that at least some particle verbs are resultative(-like), so it is not entirely surprising that they should exhibit valency and selectional effects similar to those found in resultative constructions.

The ability of particle verbs to participate in word-formation processes also fails to serve as evidence of their status as single words. The general idea behind this claim is that word-formation processes take place in a separate morphological component that precedes and serves as the input to the syntax. But this is not a necessary assumption, and there are several frameworks which explicitly do without such an assumption (e.g. Halle & Marantz's 1993 Distributed Morphology, Jackendoff's 1997a; 2002b 'tripartite architecture', or Borer's 1991 Parallel Morphology).

Although some of the well-known arguments in favor of complex-head analyses do not hold, there is some syntactic data which provides stronger support for the claim that

particle verbs are words. I noted already that verbs and particle verbs may be coordinated while sharing a single object, as shown in the repeated example below.

(3) John looked up and read the word's definition.

Furthermore, the ability of a particle to seemingly raise with the verb in Verb Raising constructions and in the *aan het*-INF construction are frequently provided as evidence that the verb and particle form a single word.[18] Even some non-complex-head analyses (e.g. den Dikken 1995:78; Zeller 2001:271ff) ultimately adopt a complex-head analysis for the Verb Raising construction. (Although this pattern is often claimed as support for complex-head approaches, I show in §4.4.2 that moving the verb and particle as a single unit in Verb Raising constructions runs into the inflection problem highlighted later in this section, among other problems.)

(9) ... dat Hans zijn moeder {op} __ wilde {op} bellen
that Hans his mother up wanted up call
'...that Hans wanted to call up his mother.' (Booij 2002:22, modified)

(69) Jan de informatie {op} __ aan het {op} zoeken
John the information up at the up search
'John is looking up the information' (Los et al. 2012:61, adapted)

The quotative inversion construction has also been used to justify treating particle verbs as syntactic words, as the particle appears to be able to raise in front of the subject with the verb.

(70) a. "This won't work," shouted out John angrily.

b. "This won't work," shouted John out angrily. (Toivonen 2003:176)

I wish to point out that I do not adopt the standard analyses of the constructions above (excluding the coordination example), though my analysis still relies on the claim that particles may merge as nonprojecting heads.

[18] The *aan het*-INF construction is, unfortunately, one which I do not provide an analysis for. This is not because it is necessarily problematic for my own claims below, but rather because I have not been able to investigate the structure in any detail. It is not clear to me what its structure should look like regardless whether a particle is present or not.

Keeping in mind that there are syntactic reasons to believe verbs and particles at least sometimes form complex heads, let us next consider a number of problems such analyses often face.

Two of common critiques of the complex-head analysis are that it violates both Williams' (1981) Right-hand Head Rule (RHR) in VO Germanic languages and the Lexical Integrity Hypothesis (LIH) (cf. Lapointe 1980; Di Sciullo & Williams 1987). Williams' RHR states that the head of a morphologically complex word is the rightmost member; however, in the case of particle verbs in VO languages, the particle is the rightmost member despite the verbal element being the head. Assuming the RHR holds, this poses a problem for complex-head approaches that assume English particle verbs are formed in the morphology, though the problem is avoided in the accounts that combine nonprojecting particles with verbal heads in the syntax, such Neeleman & Weerman's (1993a) account of English particle verbs.

The LIH states that syntactic processes may not alter the internal structure of a word. Because verbs and particles in both OV and VO languages sometimes appear in non-adjacent positions, the syntax must be able to access both heads individually. Splitting up a verb and particle would violate the LIH if they form a pre-syntactic, morphological construct. If verbs and particles form heads in the syntactic component, there is disagreement about whether the LIH would be violated. Groos (1989) forms particle verbs in the syntax specifically to avoid violating the LIH, which she assumes operates only in the morphology. In contrast, Booij (1990) appears to consider the LIH operative at the X^0 level and below (including head-adjunction structures that may be formed in the syntax), and proposes a new layer X* above X^0 but below the first $\bar{X}$ where arguments are introduced to avoid violating the LIH. Neeleman & Weerman (1993a) explicitly reject the principle altogether, and it has been challenged by many other authors as well (Zeller 2001:61 cites Lieber 1992; Neeleman 1994; Ackema 1995; McIntyre 2001b). There are also frameworks like Distributed Morphology, which conflates morphology and syntax into the same module, where the LIH could not hold without being reformulated. In the end, although violation of the LIH has frequently been brought up as a problem for morphological approaches, it does not actually appear to be a

strong argument against them. At the same time, it is possible for complex-head approach to maintain the LIH, provided they do not claim that the complex heads are formed in the morphology.

The complex-head approach does not provide an obvious solution to the subextraction problem mentioned earlier, nor have I seen it discussed in such approaches. Recall that subextraction was allowed when the object of a particle verb preceded the particle but not when it following the particle, as the example below, repeated from above, shows.

(51) a. ?* Who did you tear a picture of ___ up?

b. ?* What have you poured a bottle of ___ out? (from Svenonius 1992:111)

(52) a. Who did you tear up a picture of ___?

b. What have you poured out a bottle of ___? (from Svenonius 1992:111)

Whereas Svenonius (1992) showed this could follow naturally from at least some SC analyses, this difference does not directly follow from the complex-head approach.

One of the most significant problems for complex-head approaches is accounting for modifiers like *right* (cf. *pal* and *vlak* in Dutch), which may modify prepositions and particles but not verbs. If verbs and particles always form complex heads, it is not clear where the modifiers adjoin. If they adjoin in the morphology, then we should find word-like uses of particles which also include *right*-type modifiers (e.g. **a locked-right-up bicycle*), but I am not aware of any such instances. If they adjoin in the syntax, they would need to adjoin to a verbal projection, but then they should be able to occur as verbal modifiers outside the particle-verb construction as well, which they do not.

Another significant problem for complex-head approaches is the fact that inflectional (tense/aspect) morphology always occurs between a verb and particle in both VO and OV languages (e.g. *-ed* in *showed up*). This is true even in the Verb Raising and quotative inversion constructions highlighted above. If the morphemes in question are attached in the syntax or at PF, as I assume, then the complex-head approaches must either have a mechanism for inflectional morphology to identify the verbal portion of a particle verb and attach suffixes to that portion, or they must allow the verb to split away from the particle (as Johnson 1991

does). Note that if words are inserted into the syntax fully inflected, as in some varieties of Minimalism, this is less problematic.

Additional issues are raised by Zeller (2001), including the behavior of some particles in gapping and topicalization constructions. Zeller (2001:83ff) shows that while gapping must delete an entire finite verb (including an inseparable prefix, if present), it does not need to delete a particle, suggesting that it is syntactically distinct from the verb.[19] He also shows (pp. 88ff) that some particles may topicalize, which is a behavior limited to phrases. Neither of these facts appears easy to account for if particles are part of the verbal head.

Finally, many complex-head approaches lack a good explanation for why particles must be stranded in certain constructions in both OV and VO languages, such as V2 constructions. At least two attempts have been made to account for this, but both are problematic. Neeleman & Weerman (1993a) and Neeleman (1994) attempt to account for this with a Complexity Constraint, but Zeller (2001:63) points out that their constraint incorrectly prevents other complex verbs from raising to C. Groos (1989), who builds complex heads in the syntax, claims that V2 targets the [TENSE] feature and only the lower V^0 in $[_{V^0}\ V^0$ Prt] bears the relevant [TENSE] feature, but her explanation of percolation is dubious.

Despite the many problems with complex head approaches, the account I adopt below makes use of a complex head in addition to a SC analysis. I demonstrate that by combining the two approaches, we can overcome the problems raised in this and the previous section.

In the subsections below, I examine specific complex-head approaches in some detail.

2.2.1 Groos (1989)

Groos (1989) argues that Dutch particle verbs involve adjunction of particles to V in the syntax (at D-structure), arguing that if particle verbs were formed in the morphology the syntax would not have access to its individual parts. That the syntax must be able to access the individual parts of a particle verb is apparent in V2 constructions, where the verbal head

[19] Johnson (1991) used the gapping construction as evidence for a complex head approach, claiming that the particle must be stranded with the verb in English. Johnson, however, only considered gapping with the use of a nontransparent particle. When transparent particles are used, English allows gapping to strand a particle in the discontinuous order.

strands the particles as it raises to C^0. Groos explains why the verb raises alone by claiming that V2 only looks for features on the verbal head (e.g. [TENSE]). These features, Groos claims, do not percolate to adjunction structures, thus only the lower V^0 can be targeted.

Although Groos argues that particle verbs are formed in the syntax, she also claims that they may be independently formed in a separate morphological component of the grammar, again via adjunction. She claims that particle verbs found in 'compounding' structures such as *[aan-drijv]-ing* '(a) drive; lit. PRT-drive-ing' are formed in the morphological component.

While Groos explanation of head movement explains why only verbal heads may appear in C^0 and solves the inflection problem that plagues other complex-head approaches, it fails to explain the phrasal behavior of particles, such as their ability to be modified by *right*-type modifiers. Moreover, with respect to percolation of features, Groos claims that features may percolate only to "projections of heads" (p. 52) and not to adjunction structures. This suggests that percolation of features may skip intermediate X^0 levels created via adjunction, thereby complicating the computation. It would be preferable if we can do without this claim.

2.2.2 Booij (1990)

Booij (1990), focusing on Dutch, claims that a particle head and a verbal head combine to form a complex between the word and phrase level, which he labels V*: [$_{V*}$ [$_{Prt}$ op] [$_{V}$ bellen]]. He distinguishes this from inseparable prefix verbs, to which he assigns the structure [$_{V}$ [$_{Prt}$ x][$_{V}$ y]]. In addition to introducing V* to distinguish separable from inseparable prefixes, Booij argues against treating particle verbs as V (morphologically or syntactically formed) in large part to avoid violating Lapointe's (1980:8) Principle of Lexical Integrity (=the LIH). As Booij interprets it, this principle would make everything below V inaccessible to the syntax. If a verb and particle constituted V, they would be prevented from splitting up, contrary to the behavior of particle verbs in both VO and OV Germanic languages.

Booij's account emphasizes the fact that particle verbs sometimes behave as separate words and separate phrases, while inseparable prefix verbs only behave as words (see §6.1.1 for a brief overview). Though he provides few details on where the verb raises in various constructions, it is clear that when the verb moves away from the particle, movement targets V, while its word-like properties (e.g. valency changes) are determined at V*. There is, however, at least one instance where both the verb and particle appear to optionally move together in Dutch: Verb Raising. Booij assumes that Verb Raising may target either V or V*, while other movements, such as raising in V2 contexts, may only target V.

Despite arguing for the formation of a complex head at a later point in the syntax than some other approaches in this section, Booij's account retains many of the same problems. To highlight one example, it does not provide a position for particle-modifiers like *right* (cf. *pal* and *vlak* in Dutch). The obvious solution is to adjoin *right* to P prior to creating V*, but this is problematic for at least two reasons. First, V* can serve as input to lexical rules, but when particle verbs undergo word-formation processes *right* is not allowed. Additionally, if a particle is modified by *vlak* or *pal* in Dutch, it is unable to raise with a verb in Verb Raising constructions (see §4.4.2), which would not be predicted in this account. Booij also does not extend his account to English, where the difference between the continuous and discontinuous orders must be accounted for, as well as the different behaviors associated with the two orders (e.g. the subextraction problem).

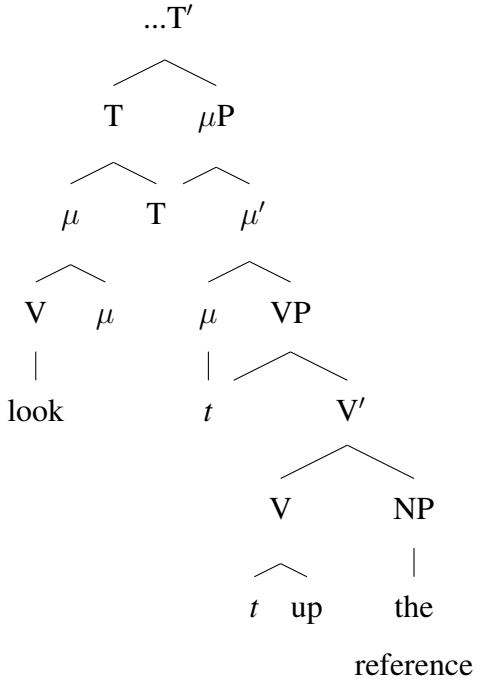
2.2.3 Johnson (1991)

2.2.3.1 Simple Particle-verb Constructions

Johnson (1991) provides a more detailed structural analysis of the particle verb than the complex head accounts reviewed above. He argues that the verb and particle are inserted together in the syntax as a complex head. The object of a transitive particle verb merges as its complement but raises to at least SpecVP in order to receive Case, which is assigned by a higher functional projection μP (the object can optionally raise to SpecμP). The verbal head must raise to T, but because the particle is incapable of hosting inflectional morphology, the verb must excorporate from the complex head either at the D-structure position V

(deriving the discontinuous order) or at the intermediate position μ, before the verb raises to T (deriving the continuous order). The former option is demonstrated in the structure below.

(71) (Johnson 1991:603)



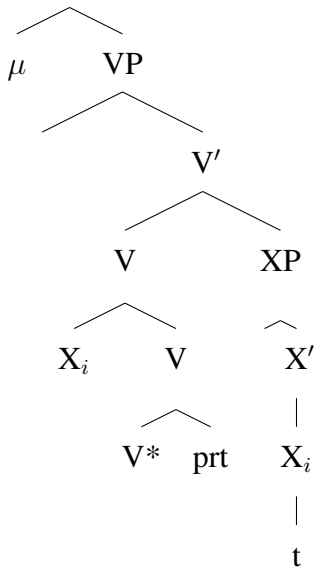
reference

With respect to excorporation, Johnson's analysis faces at least two problems. The lesser of the two problems is that he must reject the LIH, given that he allows the syntax to access the individual parts of words formed in the morphology. More significant that this is that he must make use of excorporation. Not only is there debate about whether excorporation is needed in language at all, but there are theoretical problems with his use as well. Given the structure [$_X$ X Y], Johnson argues that X (the verb) excorporates. Although Roberts (1991) defends excorporation of either X or Y from this structure, (Roberts 2010:207) rejects excorporation of X as a violation of the A-over-A Principle. Note that Johnson further allows the complex verb [$_X$ X Y] to raise as a unit prior to excorporation, creating a structure like [$_Z$ Z [$_X$ X Y]] from which X must excorporate, violating the Minimal Link Condition.

Another specific problem for Johnson's analysis is his treatment of *right*-modification. Recall that *right* may only precede the particle in the discontinuous order. Johnson assumes that *right* incorporates into the particle verb from the structure below (where X_i represents

the modifier), thereby 'anchoring' the particle *in situ*. The verb and NP raise to their respective surface positions as usual, though it is not clear where the object originates now given this structure.

(72) ..μ' (Johnson 1991:626)



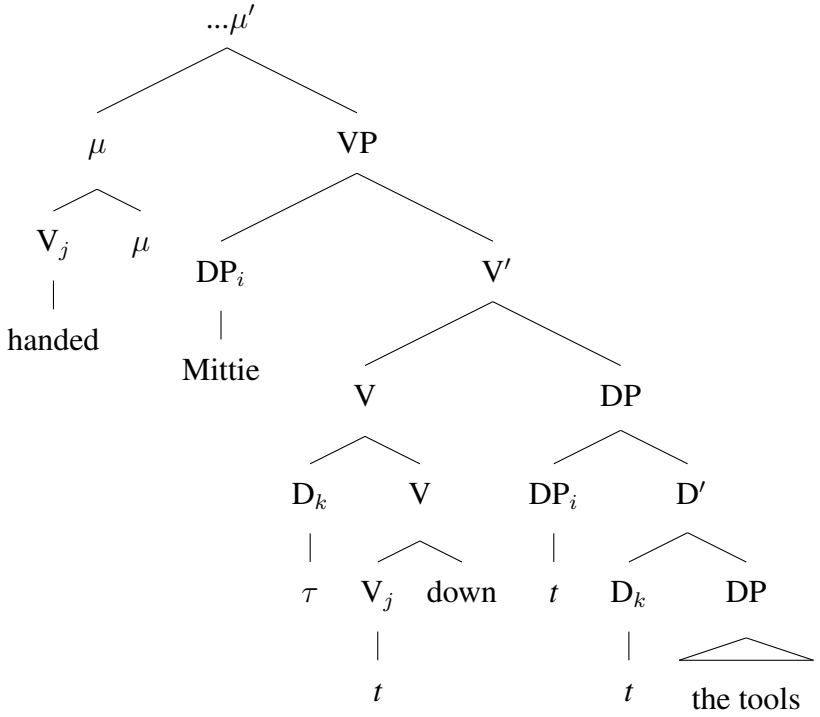
This argument is problematic for several reasons. First, modifiers like *right* and *straight* are only able to modify prepositional phrases. In Johnson's structure, however, the modifier's projection XP adjoins to a $\bar{V}$, with the modifier further incorporating into the verb. If *right* and *straight* can adjoin to $\bar{V}$, they should also occur with regular verbs, but this is not the case. Second, the modifier *on* can occur with a particle even in a position preceding the object (e.g. *heat on up the stove*). Johnson provides no account for the contrast (nor does anyone else). Presumably, *on* actually does adjoin to a head, thereby allowing it to move with a particle. To differentiate it from *right*-modifiers, then, Johnson has only one choice: allow it to adjoin to prt^0. Even so, Johnson offers no explanation for why a *right*-modifier 'anchors' the particle, and it is not immediately obvious why *on* should not do likewise on his account.

2.2.3.2 Complex Particle-verb Constructions

Johnson also provides accounts for double-object particle-verb constructions, which he suggests can be extended to the *make out* + SC construction as well. He proposes that

in double-object constructions, a DP headed by τ takes the indirect object as its specifier and the direct object as its complement, to which it assigns Case. The indirect object raises to SpecVP/μP to receive Case. The small-clause DP itself also needs Case, so its head incorporates into the verb to satisfy the Case Filter (cf. Baker 1988). This DP, however, is obligatorily stranded here when the verb raises. The partial structure of a sentence like *Sam handed Mittie down the tools* would be the following.

(73) (Johnson 1991:623)



The derivation above represents the most widely accepted ordering of the particle in the double-object construction, but not the only possible ordering. For some speakers, the particle may occasionally follow both objects. Johnson claims that this is possible only if both objects are both weak pronouns, noting that this matches the pattern found in Mainland Scandinavian Object Shift. He, therefore, offers the same solution in both cases. Here, he claims that τ does not incorporate into the verb, raising instead to SpecVP/μP, where it gets Case from μ. The first (indirect) object is Caseless, so it must cliticize onto the verb where it receives Case (cliticization being a type of incorporation according to Johnson, following Kayne 1989). Johnson's account of the particle-final order in the double-object construction cannot be maintained, however, if for no other reason than the fact it is not actually the case

that both objects must be weak pronouns (e.g. den Dikken 1995:173; see also §5.3.2), so an explanation relying on cliticization is unlikely.

Johnson also rules out constructions in which the particle to precede both objects. He claims that the incorporation of τ into the verb allows only the verb stem to move. After the indirect object raises to SpecVP/μP, we are then left with the linear order [V DP Prt DP] and unable to derive the order [V Prt DP DP]. This is quite problematic, however, as there are many speakers who allow particles to precede both objects in a double-object construction. In fact, it is generally preferred to the order [V DP DP Prt] that Johnson's account allows.

2.2.4 Neeleman & Weerman (1993a)

Neeleman & Weerman (1993a) focus on the similarities and differences between particle-verb constructions and resultative constructions, attempting to capture these in their proposed morphosyntactic structures. They claim that particles in Dutch are X^0s which adjoin to V^0s in the morphology, while resultatives are XPs adjoined to V^0s in the syntax. In contrast, they claim that English particles are XPs that adjoin to V^0 in the syntax. They explicitly assume that syntax has access to morphological structure. The structures below represent the Dutch structures.

(74) a. Particles b. Resultatives (Neeleman & Weerman 1993a:435)

By placing particles in a similar structural relation with the verb as resultative secondary predicates, this analysis captures the resultative meaning of many particle-verb constructions. The structure also allows the authors to explain why both particles and resultative secondary predicates in Dutch appear verb-adjacent (in non-V2 clauses) and do not scramble like other verbal complements or adverbials in Dutch.

Despite these similarities, Neeleman & Weerman also report a number of differences between particle-verb constructions and resultatives which are captured in this analysis. For example, particle-verb constructions may undergo certain word-formation processes while

resultative constructions may not. At least two of the claimed differences they make, however, do not seem correct, posing a problem for their syntactic claims. First, the authors claim that particles and resultatives are mutually exclusive, ruling out the possibility of co-occurrence through their *Complexity Constraint*, which states that "X^0 should either be a lexical head or have a lexical head" (p. 460). Den Dikken (1995:76) argues that there are, in fact, constructions in Dutch which combine a particle and resultative.[20] Likewise, I demonstrate in §5.4 below that particles and resultatives may co-occur in English (e.g. *John painted {up} the barn {up} red*), and I provide an account which predicts that they should be able to co-occur. The Complexity Constraint has also been shown by Zeller (2001:63f) and Stiebels & Wunderlich (1994:915f) to rule out attested patterns, including compounds such as *superfederlicht* 'super-featherlight'.

Another problem for Neeleman & Weerman (1993a) is their claim that resultatives and particles differ in that only the former may topicalize. If true, this would support their claim that resultatives are full XPs while particles are only heads, as only XPs are generally claimed to undergo topicalization. Other authors, however, have demonstrated that topicalization of particles is possible, provided the particle has a certain degree of semantic transparency (e.g. Zeller 2001:88ff for Dutch and German, Cappelle 2002 and Cappelle 2005:118 for English; see also §4.5.3 below). Since at least some particles can topicalize, it is not possible to claim that particles necessarily lack phrasal structure. In fact, Neeleman & Weerman (1993a:468) provide an example of a particle fronting in a locative inversion construction in English, treating this as evidence that particles adjoin to V in the syntax in English (in contrast with morphological adjunction in Dutch), which to them seems to indicate that particles are XPs.[21] If so, then the ability of particles to topicalize in Dutch should lead to the same conclusion.

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[20] Den Dikken (1995) argues against claims in Neeleman & Weerman (1993a:437, fn. 4) and Neeleman (1994:331f, fn. 7) that apparent instances of the co-occurrence of particles and resultatives do not really involve secondary resultative predicates. Zeller (2001:101, fn. 29) provides an example from German which may be analyzed as the co-occurrence of a particle and resultative, though he does not analyze it as such.

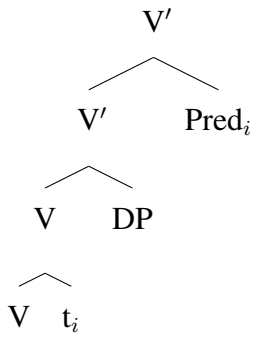
[21] Neeleman & Weerman (1993a) do not represent particles as phrases in their tree on p. 469, but they state elsewhere (pp. 465-466) that in some languages particles "are adjoined in the syntax and are therefore XPs".

As noted already, Neeleman & Weerman claim that English particles, unlike Dutch particles, adjoin to V^0 in the syntax as XPs. They note that particles may move in English (to derive the discontinuous order), and indicate that the inability of particle verbs to take derivational suffixes (**call up-able*, **look up-ing* (p. 468)) as evidence. If English particles are XPs that adjoin to verbs, they should behave just like resultative secondary predicates, to which Neeleman & Weerman assign the same structure. But despite some similarities, however, there are clear differences between the constructions. Most obviously, particle-verb constructions but not resultative constructions occur in both a continuous and discontinuous order.

2.2.5 Neeleman (1994)

Following the claim in Neeleman & Weerman (1993a), Neeleman (1994) claims that particle-verb constructions and resultative constructions alike originate as a type of syntactic complex head, with the particle or resultative secondary predicate merging with V to form a head-level category rather than a bar-level category. Neeleman (1994) differs from the earlier work, however, in claiming that predicate phrases in English are extracted rightward around the object. This extraction is driven by the need to satisfy a Case Adjacency condition in English, prohibiting the intervention of an XP between the verb and its Case-dependent argument (p. 184).[22]

(75) (Neeleman 1994:4)



[22] Neeleman (1994:231ff) ultimately treats Case Adjacency as a PF-constraint. This is maintained in later works, including Neeleman & Weerman (1999) and Neeleman (2002), and I postpone discussion of this point until §2.4.2. One of the primary differences between Neeleman (1994) and these later works is that the claim that projecting predicates are extracted rightward is not kept in the later works. For this reason, I focus primarily on this aspect of Neeleman (1994) in this subsection.

To explain why particles but not canonical resultative secondary predicates are able to occur in the continuous order, Neeleman claims that particles optionally project phrases. When they do not project, they do not cause a violation of the Case Adjacency condition (since they are not XPs), so they are not extracted rightward; rather, they remain *in situ*.

Given that projecting predicates must be extracted rightward in this account, the question that arises is what prevents the predicate from raising past anything but the object DP. Phrases extraposed due to Heavy NP Shift, for example, may follow other right-adjuncts, but both resultative secondary predicates and particles must immediately follow the object DP.

(76) a. John bought t_i yesterday for his girlfriend [the most expensive diamond ring he could find]$_i$.

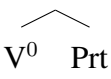
b. John hammered the metal (*yesterday) flat (yesterday).

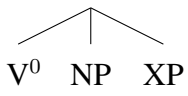
c. John looked the word (*yesterday) up (yesterday).

Another problem Neeleman's account faces is the inflection problem with respect to the Verb-Raising construction, as Neeleman assumes the verb and particle raise rightward as a complex head.

2.2.6 Toivonen (2003)

Toivonen (2003) focuses primarily on Swedish particles, which she argues are non-projecting syntactic heads which merge with verbal heads to create complex verbs. This contrasts with her analysis of nonprojecting particles in English, which she claims combine with verbal roots to form complex heads in the morphological component. The structure in (a) below represents the structure of a (nonprojecting) particle verb in Swedish, while that in (b) represents the structure of a resultative, as well as that of a projecting particle (in which case, Toivonen does not (usually) call it a particle). I return to the structure in (b) later.

(77) a. 

b. 

(Toivonen 2003:2f)

Evidence for the claim that Swedish particles are nonprojecting comes from a number of distributional patterns. One strong piece of support for this claim is that verb + particle combinations can be conjoined with simplex verbs in pre-object position.[23]

(78) IOK har tystat **ner** och begravt dopingfall tidigare.
IOK has silenced down and buried doping.cases before
'IOK has silenced and buried doping cases before.' (PAR) (Toivonen 2003:98)

Toivonen, however, argues that Swedish particles are always nonprojecting. To support this claim, she states that they always appear in pre-object position and cannot be modified in this position, as shown in (79) and (80), respectively.

(79) Simon kastade {ut} soporna {*ut}
Simon threw out garbage.the out
'Simon threw out the garbage.' (Toivonen 2003:19, adapted)

(80) * Olle sparkade längre bort bollen.
Olle kicked further away ball.the
'Olle kicked the ball further away.' (Toivonen 2003:21, adapted)

Toivonen points out that some words are "optionally particles" (p. 21), meaning that they optionally project a phrase (projection or nonprojection being specified lexically). When they project, they may follow the object and be modified, as demonstrated by comparing the following example with (80).

(81) Olle sparkade bollen längre bort .
Olle kicked ball.the further away
'Olle kicked the ball further away.' (Toivonen 2003:21, adapted)

Noting their similar with resultative phrases, both in form and in meaning, Toivonen claims that examples like that in (81) above are, indeed, resultatives and assigns them the structure in (77b) above.

Note that Toivonen's claim that particles can never follow the object or be modified is circularly based on her definition of particles as nonprojecting words.[24] Assuming that

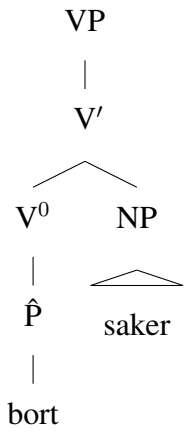
[23] Examples followed by PAR come from the PAROLE corpus.

[24] At other times (e.g. p. 23), Toivonen refers to nonprojecting and optionally projecting words alike as particles, adding to the confusion.

words may project, optionally project or never project, what appears to be the actual case in Swedish is that optionally projecting particle-like words are transparent while nonprojecting particle-like words are often less transparent. Such an observation is made by Vinka (1999) (see §2.5.4), who distinguishes between 'predicative' and 'nonpredicative' particles in Swedish. If we consider both non-projecting and optionally projecting particle-like words to be particles, then Swedish seems less unique. In fact, OV/VO distinction excluded, it closely resembles Dutch on some accounts (e.g. Los et al. 2012), where it has been claimed that nontransparent particles never project (since they cannot be modified or topicalize), while some transparent particles optionally project. Both Toivonen (2003) and Los et al. (2012) further claim that economy considerations prevent optionally projecting particle-like words from projecting unless necessary (e.g. because they are modified) in Swedish and Dutch, respectively. Though Toivonen does not explicitly discuss Dutch, she does claim that her account can be straightforwardly extended to the related language German, which behaves quite similarly to Dutch.

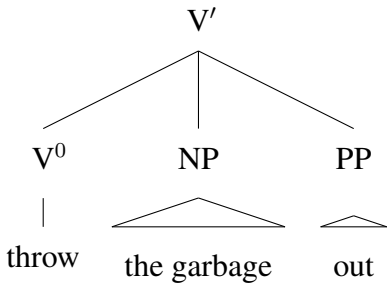
If we ignore the terminological disagreement over what constitutes a 'particle', assuming that both structures Toivonen's two structures in (77) are available for particles that optionally project, Toivonen's analysis is able to account for some of the problems commonly faced by complex-head approaches. For example, it explains why only post-object particles may be modified, as only they have phrasal structure capable of hosting a modifier. On the other hand, within the theoretical framework I adopt, Toivonen's analysis retains one of the main problems with other complex head approaches: it does not explain the position of inflection morphemes. To be sure, within the LFG framework Toivonen adopts, inflection might not be problematic. LFG lacks head movement, but it allows a head to merge in other positions. In (82), for example, the verb could be directly merged in I^0 in Swedish. Toivonen (2003:85) represents the structure of the particle in a verbless VP as in (83).

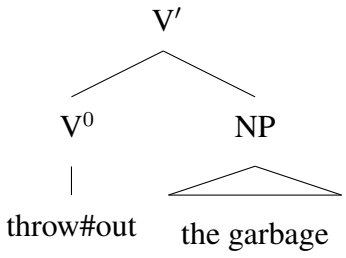
(82) Sofia kastar often [$_{VP}$ **bort** saker].
S. throws often away things
'Sofia often throws things away.' (Toivonen 2003:85, adapted)

(83) 

(Toivonen 2003:85)

In contrast to Swedish, Toivonen claims that English particle verbs, when appearing in the continuous order, are formed morphologically and inserted into the syntax as a unit, represented by (b) below. The structure in (a) is that of a resultative and will be returned to shortly.

(84) a. 

b. 

(Toivonen 2003:171)

Toivonen's basis for making this distinction between Swedish and English is her claim that "English particles that immediately follow the verb seem to have a tighter connection to the verb than Swedish particles do" (p. 169). For example, Swedish allows the coordination of [particle nP] constituents, whereas English does not. Such data does not necessitate her conclusion that English and Swedish form particles at different lavels; for example, a possible phonological reason for the coordination fact noted by Toivonen was provided in Svenonius (1994:Ch. 3, §3.5) and is reviewed here in §4.3.3.1.

Naturally, the morphological compound structure gives rise to the problem of the position of inflectional morphology. Toivonen recognizes this and points out that compounds can show inflection in other constructions, providing as examples *a wiped-away smile*, *a*

sold-out show, *brothers-in-law*, and *passers-by* (her p. 173). She suggests that tense morphology could be added in a similar manner as in these compounds, whatever that manner should be. But these examples do not prove that inflection may be added in the morphology. *Brothers-in-law* and *passers-by*—along with *Attorneys General*, *goings-on* and several others—are fixed forms which are learned rote and do not follow the normal pattern of pluralization. All of these forms can regularly be found with plural marking at their right edges by speakers who did not pay enough attention during their English Language Arts classes.[25] Toivonen's other examples, the adjectival passives, can be analyzed as being formed in the syntax, as I do in §6.2.6.

Although I reject Toivonen's conclusion that Swedish and English particle verbs must be formed in different grammar modules, I believe there is merit in positing one structure for particle-verb constructions exhibiting the continuous order and a second for those exhibiting the discontinuous order (ignoring terminological differences in what constitutes a 'particle'). Unlike nontransparent particles in Swedish, most particles in English appear to allow not only the continuous but also the discontinuous order, with evidence that they are projecting in the latter cases provided by their frequent ability to be modified by words like *right*. English particles, then, generally allow the resultative structure in (84a) as well as a nonprojecting structure, accounting for the word order variation in English. I shall not adopt Toivonen's ternary branching structure below, but like Toivonen, I suggest that one possible way to derive the discontinuous order involves a projecting particle in a resultative structure.[26]

2.3 Particles as Nonprojecting, Independent Verbal Complements

The next two accounts resemble complex-head approaches in that the particle does not project any phrasal structure, but they differ in that the particle and verb combine to

[25] It is also pointed out in Pinker (1994:146) that plural markers of regular nouns cannot appear in synthetic compounds like **rats-infested* (cf. *rat-infested*) even though irregular plurals can (e.g. *mice-infested*). Regular plurals, he concludes "are put together too late in the root-to-stem-to-word assembly process to be available to the compounding rule, whose inputs can only come out of the dictionary." This suggests that the seemingly 'regular' plurals in Toivonen's compounds are, in fact, lexically stored irregular plurals.

[26] Toivonen discusses complex particle-verb constructions as well, arguing that they are constructional idioms. Since such an analysis does not attempt to explain the facts—it only describes them—I do not review it here.

form a bar-level category rather than a syntactic head. This type of analysis allows one to treat particles and verbs as syntactically independent elements while at the same time capturing their general inability to undergo movement typically reserved to full phrases (e.g. topicalization). Despite these advantages, there are numerous problems that it gives rise to which make the use of this type of structure unlikely to be successful. First and foremost, the ability to modify particles with words like *right* strongly suggests that particles must be able to project phrasal structure, even if they do not always need to do so. Blom (2005) attempts to provide an analysis of *right*-type modifiers that would avoid this problem, but the argumentation is not convincing. Syntactically, the combination of verb and particle occasionally behaves like a single word as well. For example, it was noted in the introduction that a particle verb can be coordinated with a verb while sharing the same object, suggesting that the verb and particle form a syntactic head rather than a bar-level constituent.

(3) John looked up and read the word's definition.

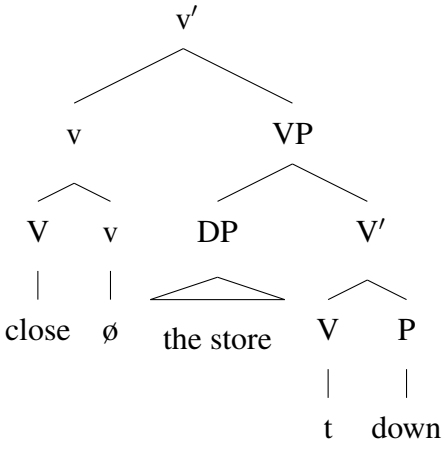
Another problem for this type of analysis is that it does not provide an obvious explanation for the ability of particle verbs to undergo word-formation processes. If one does not wish to claim that particles and verbs can additionally form syntactic heads, it is necessary to demonstrate how the structure [$_{V'}$ V Prt] is compatible with the numerous word-formation processes in which particle verbs are found.

Although it does not seem that an account that only adopts the structure [$_{V'}$ V Prt] for particle verbs can successfully account for all of the relevant data, I do not see strong reasons to suppose that this structure could not exist in conjunction with other structures that have been proposed. For example, Los et al. (2012) adopt this structure as the default structure of particle verbs, but they also adopt two additional structures to account for some of the issues noted above. Even Blom (2005), examined in this section, claims that some particles are ambiguous between a particle structure and a phrasal, resultative structure. In my own analysis, I do not adopt the type of structure examined in this section as it does not seem necessary, but I am also not sure that it would cause any complications if I did.

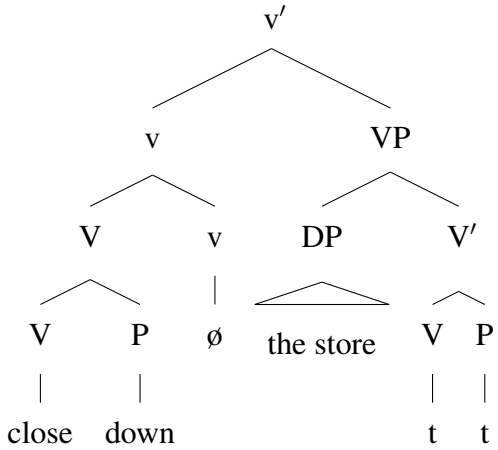
2.3.1 Radford (1997)

Radford (1997) uses particle-verb constructions as support for the existence of VP-shells. He takes the particle to be a bare-headed complement of the verb, the two forming a constituent at $\bar{V}$. The object originates in SpecVP. The discontinuous order is derived by raising the verb and adjoining it to v^0. The continuous order requires the particle to adjoin to V before it raises.

(85) a.



b.



(Radford 1997:373ff, modified)

Radford's approach captures both the close semantic relationship between the verb and particle (by treating them as, essentially, a complex predicate) and the fact that they behave as distinct syntactic units; however, there are a number of issues for this account. Much of the problem with Radford's account is simply are that Radford leaves many facts unaccounted for, which is understandable as the account is placed in an introductory syntax book. I will point out just a few problems and unexplained phenomena here. First, there is no account of how particles can be modified by words like *right*. Second, the ability to subextract from objects in post-particle but not pre-particle position (see examples (51)-(52)) is entirely unexplained. Third, Radford's account does not explain for why inflectional morphology appears on the verbal portion, even when the particle has incorporated. Finally, even if we can overcome this last problem, we will still need to allow the verb to excorporate to account for the instances where the verb raises higher than *v* and strands the particle in

pre-object position (see §4.4), and Radford explicitly allows this in his treatment of double-object constructions involving particle verbs, which I review below. I will discuss problems with such excorporation in §4.1.1.2.2.

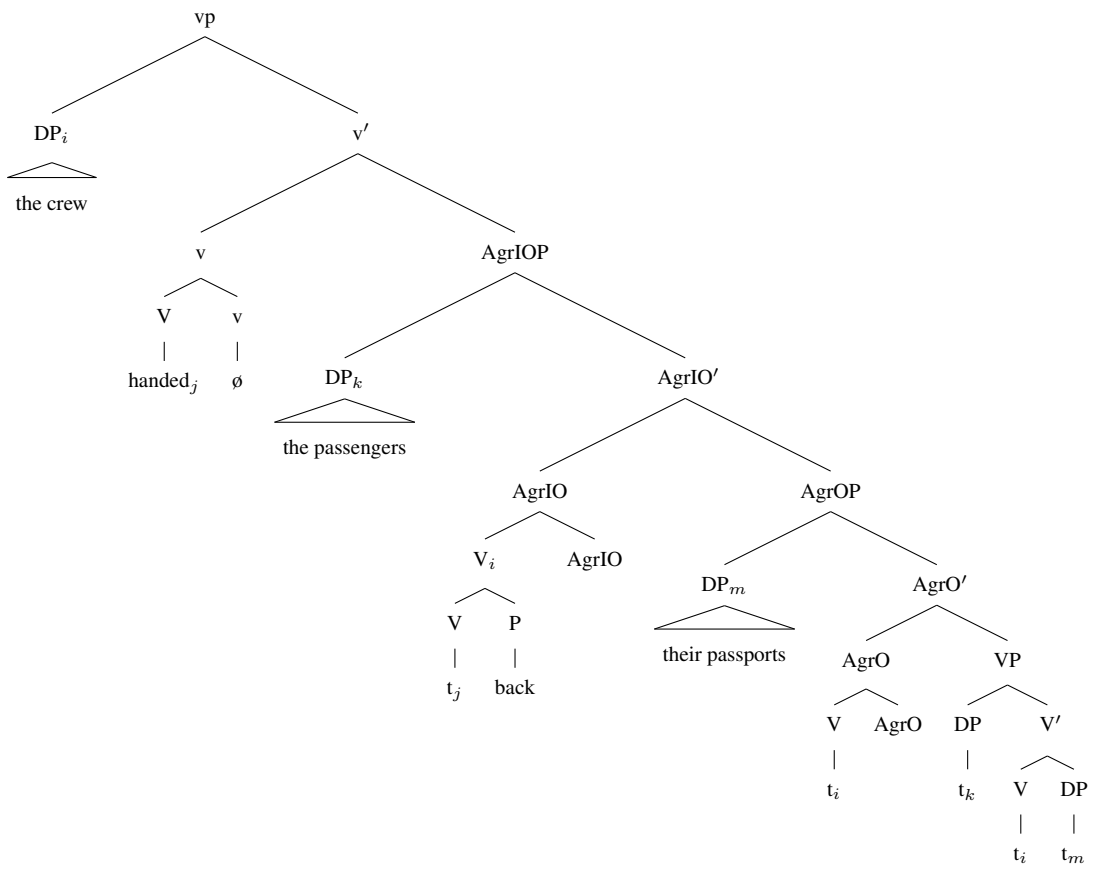
Radford (1997:444ff) provides a partial account of double-object constructions involving particle verbs (e.g. he does not make a claim about where the particle originates in these structures, though it is necessarily distinct from in the simplex constructions). He claims that the indirect object originates in SpecVP and the direct object as the complement of V. From here, the derivation is as follows. The verb merges with AgrO above VP, after which the direct object raises to SpecAgrOP. The verb then raises to AgrIO above AgrOP, after which the indirect object raises to SpecAgrIOP. From here, the verb raises to *v*. In the case of particle verbs, the particle optionally raises to AgrIO or *v*.[27] I provide only one possible structure in the tree below.

(86) The crew handed {back} the passengers {back} their passports {back}.

(Radford 1997:444)

[27] In his treatment of complex particle-verb constructions, Radford assumes the particle always raises with the verb to AgrO (e.g. even when *back* follows both objects in the example in (86)), but nothing appears to hinge on this assumption.

(87)

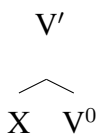


Although Radford's approach accounts for the possible positions of *back* in (86), in fails to account for the fact that most particles are not able to follow both objects in a double object construction. Further, it does not capture why particles that can occur in post-THEME position of double-object constructions can be modified, nor does it explain why some speakers allow modification of the particle when it occurs between the GOAL and THEME. (The present account explains these facts in §5.3.)

2.3.2 Blom (2005)

Blom (2005) provides an account of particle verbs in both English and Dutch, arguing that both languages make use of the same basic syntactic structure (word-order aside), in which a nonprojecting particle merges with a verbal head to form $\bar{\text{V}}$. This structure is provided below, where X represents the particle.

(88)



The structure above is the only structure assumed for Dutch (with caveats), and it is the structure underlying both word orders in English.

Blom's account captures the ability of the verb to move without the particle in V2 constructions, since the verb and particle are distinct heads. It can also capture the fact that inflectional morphology (*ge-*, *te*) appear between the verb and particle. At the same time, because the particle does not project a phrase, she captures the inability of (most) particles to topicalize or be modified with words like *helemaal* 'completely', *vlak* 'right' or *pal* 'right'. Somewhat less satisfactorily, Blom accounts for the peculiar behavior of particle verbs in the Verb Raising construction and the *aan-het*-INF construction by claiming that while XPs are not allowed to occur in verbal clusters or to the right of *aan-het*, both X^0s and "V-bars that do not contain projecting words" (p. 110) may.

Blom recognizes that a subset of particles may be topicalized, but she notes that most particles do not allow this option. She makes two claims with respect to instances in which particles are topicalized. First, some words have both a particle structure (=(88)) and a phrasal (resultative) structure (=(89)).

(89) (based on Blom 2005:114)

Although Blom does not consider this latter structure a particle structure, words that appear in both structures in her account could be called 'optionally projecting particles'. Lexically, particles would need to be specified as optionally projecting or obligatorily nonprojecting. Blom's second claim regarding topicalization is that "strong contrastive focus may result in topicalisation of non-maximal elements, which are thereby reanalysed as syntactically independent elements and allowed to project" (p. 92); in other words, some instances of topicalization are derived from the underlying structure in (88) via reanalysis, in which case these particles do not need to be lexically ambiguous between nonprojecting and projecting

words. But if V's may raise as a unit in Verb Raising constructions, Blom's account must be augmented with an explanation for how inflectional morphology gets into $\bar{V}$, and for why inflectional morphology continues to intervene between the verb and particle even when they have apparently raised together in the Verb Raising construction (recall ex. (35)).

A significant problem with Blom's analysis is that she rejects the claim that particles may be modified; instead, she claims that apparent particle modifiers like *helemaal* 'completely' are actually event modifiers that adjoin to $\bar{V}$. Such an analysis provides no explanation for why modifiers like *helemaal* block particles from raising in Verb Raising constructions. In contrast, this follows naturally from the common assumption that such words modify parrticles, forcing them to project XPs which are unable to participate in Verb Raising.

The analysis above can be extended to account for the continuous word order found in English particle-verb constructions. The discontinuous order, Blom argues, contains the same underlying structure, but pragmatic focus may force the stylistic reordering of the object NP. Stylistic rules, she claims, take place in a distinct component with syntactic rules. The specific stylistic and reordering rules are provided below.

(90) a. (Topic)(Common Ground) Focus

b. [V-X]-NP > V-NP-X

Condition: [V-X] bears focus. (Blom 2005:349)

One problem with this analysis is that, while particles are more likely to occur in final position when they or the verb bears focus, or if the nP is backgrounded, this is not an absolute rule. For example, as a response to the question *What did you pick up?*, one could say either *I picked the car up* or *I picked up the car*, even though the particle verb is common ground and *the car* is new information and receives focus. This is not to say that both responses are equally likely, but both are possible. Blom's analysis predicts that the discontinuous order should never occur when the nP receives focus, which does not seem accurate.

It was noted above that Blom treats the Dutch equivalents of *right* and *completely* as verb modifiers rather than particle modifiers. Blom extends this claim to *right*, claiming that it is a focus marker which triggers extraposition of the particle. Prior to extraposition, the structure of a particle-verb construction with *right* is argued to be the following.

(91) $[[V^0\text{-}X]_{V'}$ NP *right*$]_{VP}$ (Blom 2005:351)

In addition to the problem noted above for Blom's treatment of these modifiers in Dutch, there is an additional, significant problem relevant to English. *Right* is able to front with particles and prepositional phrases (e.g. *...and right up he went*) which shows that *right* clearly forms a constituent with the particle. Moreover, it is easily demonstrated that *right* cannot occur as a verb-modifier, as it may not occur in the absence of a PP; for example, one cannot say *John went right* with the relevant variant of *right*, while *John went right up* is grammatical. *Right* can also stand alone with a PP modifier in response to a question, unlike other VP modifiers: *Where did the mouse run?–Right under the table.* vs. *Where/How did the mouse run?–*Quickly under the table.* It is, therefore, not tenable to claim that *right* is a verb modifier.

2.4 Syntax-Phonology Interface Analyses

In this section, I examine proposals to deal with at least the basic word-order facts of particle-verb constructions not in the syntax but at the syntax-phonology interface. In part because the following accounts differ from the more conventional accounts reviewed in other sections, I provide slightly more in-depth coverage of them than I do of other accounts.

It is not easy to make generalizations about the group of interface accounts below. Although they all take the syntax-phonology interface to be the relevant place to determine the word order in particle-verb constructions, they do so in quite different ways. We can, however, identify at least one benefit that comes along with interface accounts like these: they naturally capture the lack of a semantic difference between the particle orders. The main disadvantage of these accounts is that the ideas they present have not been as extensively researched as the more mainstream syntax-oriented accounts, so it is unclear how they fare

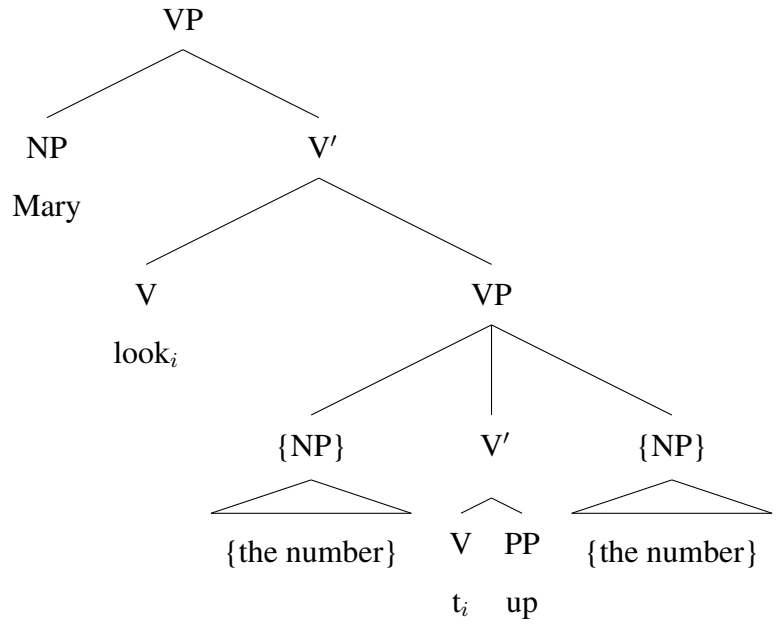
when faced with a wider range of (particle and non-particle) phenomena and cross-linguistic data. A second problem is that none of the accounts presented here fully examines the distribution of particles or delimits what the syntax and what the interface is responsible for.

2.4.1 Idsardi (1989)

Idsardi (1989) is the first paper on particle-verb constructions that I am aware of to attempt to account for the construction largely at the syntax-phonology interface. Because the paper is unpublished, it remains relatively unknown, but its account of particle-verb constructions is worth consideration.

Idsardi follows Emonds (1972, 1976, 1985) in considering particles to be heads of PP complements of V. He assumes that verbs raise to a higher V prior to Spell-Out. Idsardi claims that the "immediate constituents of VP are syntactically unordered" (p. 3), allowing a single syntactic structure to give rise to more than one linear order at PF, including both the continuous and discontinuous orders of the particle-verb construction. This is demonstrated in the structure below, where the placement of the NP node in curly brackets indicates two possible linear orders derivable from the same hierarchical structure.

(92)



(Idsardi 1989:2f, modified)

From the outset, Idsardi attempts to account not only for the fact that particles may precede or follow NP arguments, but also for the fact that they may precede but not follow PP and CP arguments. This was pointed out by Kayne (1985), and I include some of his examples below.

(93) a. John looked up the information.

b. John looked the information up. (Kayne 1985:101)

(94) a. John teamed up with Bill.

b. * John teamed with Bill up. (Kayne 1985:104)

(95) a. She pointed out that he was wrong.

b. * She pointed that he was wrong (right) out (to him). (Kayne 1985:106)

To account for the data above, Idsardi proposes the Linearization Constraint below.

(96) Linearization Constraint (Idsardi 1989:5)

*[... $\boxed{\alpha \text{ ... [... } \boxed{\beta \text{ ... } \gamma}\text{ ...] ... } \delta}$ ...] where

β governs/selects γ

γ is a maximal projection

α governs/selects δ

(96) captures the data in (93)-(95) because it disallows the separation of a governor and governee by an intervening phrase containing a distinct governor and governee. First, it should be clear that the verb governs the particle in Idsardi's structure, thus V = α and Prt = δ in the formula in (96). Since the heads of PPs and CPs are governors (=β) and their complements governees (=γ), the Linearization Constraint predicts that they should not intervene between a verb and its selected particle. The head of an NP, on the other hand, does not (necessarily) govern anything to the right, and thus is not required to follow the particle.

Idsardi further shows that the inability for heavy NPs to precede particles falls out from the Linearization Constraint as well; however, the facts are less clear in this case. Idsardi presents the following examples from Ross (1986).

(97) a. * I ran a man who was old down.

b. I ran an old man down. (Ross 1986:33)

(98) a. * I'm going to call somebody who is strong up.

b. ? I'm going to call somebody strong up. (Ross 1986:33)

(99) a. * I polished the vase which was from India up.

b. ? I polished the vase from India up. (Ross 1986:33)

(98b) and (99b) are problematic for Idsardi, because his Linearization Constraint predicts that they should be ungrammatical, since they all contain a governor and governee somewhere within the NP. Idsardi claims that these examples are, in fact, ungrammatical, contra Ross. My own judgments find (98b) and (99b) quite acceptable, though admittedly *slightly* less acceptable then their counterparts without the modifiers. There is a very distinct difference, for me, between (98b) and (99b) on the one hand and (94b) and (95b) on the other hand which needs to be captured. Idsardi attempts to provide an explanation for the distinction that exists for speakers like Ross and myself, but it contrasts with his previous claims. He suggests that Ross' distinction between the (a) examples above with (98b) and (99b) falls out from the fact that the (a) examples involve sentential complementation, which contains several violations of the Linearization Constraint, while the (b) examples in (98)-(99) involve a single violation. This would, however, predict that speakers like Ross and myself would find sentences like (94b) grammatical. I do not, nor have I seen such a judgment in any of the particle-verb literature. Idsardi's constraint also rules out sentences where a PP can, at least marginally, precede a particle, such as the following.

(100) ? I bet they pick under the bed out as their new hiding place. (Kayne 1985:107)

Idsardi's Linearization Constraint is, therefore, too general, ruling out a number of at least marginally acceptable constructions in addition to the clearly grammatical ones.

Idsardi also provides an account for the complex particle-verb construction data, including those with small-clause arguments and those in ditransitive constructions. First,

consider how he accounts for particle verbs which take a small-clause argument, as in the following examples.

(101) a. Fred will make John out a liar.

b. * Fred will make John a liar out.

c. ?* Fred will make out John a liar. (Idsardi 1989:17; cf. Kayne 1985:108f)

Idsardi adopts Kayne's (1985) syntactic analysis of the *make out* + SC construction, wherein *John a liar* is a small clause merged as the subject of the particle *out* (see §2.1.1). Because a small-clause contains an internally governed XP, the sentence (101b) is ruled out by the Linearization Constraint. In contrast, (101a) does not violate the Linearization Constraint because, following Kayne, Idsardi claims that *a liar* in (101a) extraposes, leaving no internally governed XP in the stranded phrase [John *t*]. To account for the ungrammaticality of (101c), Idsardi proposes that "ECM requires adjacency, whereas ordinary assignment of case requires only that the items be in the same intonational phrase" (p. 18). Alternatively, he suggests that if the entire small-clause is extraposed, Case might be assigned to the trace, leaving *John* without Case.

Idsardi's account runs into similar problems as Kayne's, which den Dikken (1995) criticized in part for being unable to neatly handle the distinction between sentences like (101c) and its *to*-infinitival variant below.

(102) ? Fred will make out John to be a liar.

Here, Idsardi's initial proposal to account for the judgment in (101c) is problematic, as it would rule the sentence in (102) out on the basis of the lack of adjacency between the verb and *John*.

The other complex constructions Idsardi examines are the double-object construction and the prepositional dative construction when they are combined with the particle-verb construction. He takes the linear order difference between the double-object construction and the prepositional dative to be due to linearization and not syntax; specifically, either object NP can be linearized to the left or right, with a special rule to account for the presence or absence of *to*.

(103) [$_{VP}$ I [$_{V'}$ hand [$_{VP}$ (to) Mary [$_{V'}$ t [$_{VP}$ the book [$_{V'}$ t up]]]]]]

For evidence that a 'symmetrical' theory like Idsardi's cannot hold, I refer the reader to Bruening (2010a). Idsardi's structure is also problematic because it fails to account for the fact that many speakers allow a particle to precede both arguments in the double-object construction. The account further predicts the order in which a particle may follow both verbal arguments to always be grammatical, contrary to judgments speakers provide in most cases (see §5.3 for discussion). Finally, the account fails to differentiate *back* from other particles in this position. Specifically, *back* is the only particle regularly allowed by all speakers I have tested after both arguments in a double-object construction (see §5.3 for details).

Despite the aforementioned problems with Idsardi's account, one additional set of data he discusses is worthy of mention. Idsardi discusses the ability of modifiers like *back* and *right* to modify particles both in pre- and post-object position. Though he does not distinguish the distribution of the two (*right* cannot precede a particle-verb's object, unlike *back*), he unwittingly provides an account for their distinction.

(104) a. They put the guns back down.

b. ? They put back down the guns.

c. They put back down the guns that they had brought.

d. They put the guns that they had brought back down. (Idsardi 1989:15)

Idsardi first examines a structure where *back* is a head adjoined to PP, thereby governing it. He notes that this structure would incorrectly rule out (104b) because it would violate the Linearization Constraint, leading to him proposing a second structure. In fact, given his other claims this initial structure would seem appropriate for *right*, as sentences like **they put right down the guns* are ungrammatical. To account for the grammaticality of (104d) were we to change *back* to *right*, Idsardi suggests that the PP could be extraposed to the right of the heavy NP.

The second structure Idsardi proposes for *back* is one in which *back* is merged with the particle head P. Because the particle is not a maximal projection, this would allow the

order in (104b) without violating the Linearization Constraint. This is similar to the structure I adopt in §4.6.2.3 for the particle-modifiers which are of particle origin, *back* and *on*. As before, extraposition may lead to the order in (104d).

2.4.2 Neeleman (2002); Neeleman & Weerman (1999)

The present section examines the account of English and Dutch particle-verb constructions in Neeleman (2002). The analysis is also found in Neeleman & Weerman (1999), but I will primarily focus on Neeleman (2002) in this subsection.

Neeleman attempts to account for the differences between the constructions in VO and OV languages by allowing Case checking relations to hold either in the syntax (in OV languages) or in the phonology (in VO languages). In addition to his view on Case assignment, Neeleman also proposes other major deviations from commonly-held assumptions about θ-role assignment and syntactic hierarchical relations.

First, Neeleman proposes that, at least within the VP, the order of the verb and its direct internal argument is determined at PF. He additionally allows the internal argument to be generated in multiple positions within the VP, provided the internal argument c-commands the verb and the verb m-commands the argument.

(105) An argument α can be thematically associated with a predicate π iff α c-commands π and π m-commands α. (Neeleman 2002:143)

Next, Neeleman posits that Case features are licensed at PF, and the "elements which enter into a checking relation must be in the same [syntactic (XP) or prosodic (ϕ)] phrase" (p. 144).[28] Here, Neeleman follows Selkirk (1986) in taking a prosodic phrase to be closed at the right edge of an XP. These facts are stated formally as follows.

(106) A head α may check the case of β iff (parametric choice)

a. the first XP that dominates α dominates β and vice versa.

b. the first ϕ that dominates α dominates β and vice versa. (Neeleman 2002:145)

[28] Recall that Idsardi (1989) makes a very similar claim, as the quote on p. 67 indicates.

(107) Close ϕ when encountering $]_{XP}$ (Neeleman 2002:145)

In OV languages like Dutch, (106a) is the relevant parameter, whereas (106b) is the relevant parameter for VO languages like English. For English, the order [$_{VP}$ V DP] follows without additional stipulation, because the prosodic phrase closing at $]_{DP}$ contains both V and DP.[29] The order [$_{VP}$ DP V] would prevent Case from being assigned, since the DP and V would belong to separate prosodic phrases. To explain why Dutch is OV, however, an additional stipulation beyond (106b) is required. Without one, both orders of V and DP should be possible, since they are in the same maximal projection. Neeleman thus adds the following stipulation:

(108) If a head α checks a feature of β in the syntactic representation, then β precedes α in the phonological representation. (Neeleman 2002:146)

This stipulation forces objects in OV languages to precede their selecting verbs. As argued until now, this theory also predicts that no XP should intervene between objects (or their NP-traces) and verbs in VO languages while allowing for scrambling in OV languages, a prediction which holds for English and Dutch.

Finally, Neeleman makes use of VP shells for the purpose of Case-checking, rather than for θ-role assignment, contra Larson (1988). Thus, the order [V DP] may be obtained either by generating the order [$_{VP}$ V DP], or by generating [$_{VP}$ DP V XP] followed by subsequent raising of the verb, yielding [$_{V'}$ V$_i$ [$_{VP}$ DP t$_i$ XP]]. In both instances, V and DP end up in the same prosodic domain ({V DP} {XP}), allowing for Case-checking in VO languages. Neeleman posits that shells are universally available, but are ruled out whenever a more economical option is available.

Turning our attention to particle-verb constructions, Neeleman makes two main claims: (i) particles are syntactically-formed complex heads [$_{V}$ V Prt(P)], and (ii) particles may optionally project. Beginning with English, let us examine how Neeleman accounts for some of the main distributional facts of particle-verb constructions. Consider the sentence below.

[29] In VO languages with V-to-I movement, like French and Iceland, the trace of the verb checks Case.

(109) John looked {(*right) up} the information {(right) up}.

Ignoring the modifier for now, let us examine how the particle comes to precede or follow the object. The simplest derivation of the transitive particle-verb construction in (109) is provided below. Here, the complex particle verb, a head, merges with a DP complement. The verb and object are in the same prosodic phrase, which closes at the right edge of the DP, thus meeting the requirement for Case-assignment. The prosodic phrasing is shown in (110b).

(110) a. $[_{DP}$ John] $[_{VP}$ $[_{V}$ looked $[_{Prt}$ up]] $[_{DP}$ the information]]

b. {John}{looked up the information}

Recall that particles are allowed to project phrases in Neeleman's proposal. Projection is optional in the absence of a *right*-modifier, but it is obligatory when such a modifier is present. When particle-projection occurs, the prosodic phrase containing the verb and particle closes after the particle. If the object does not move, it will be unable to check Case, as it is no longer in the appropriate Case-checking domain (i.e. the same prosodic phrase as the verb). This is demonstrated below.

(111) a. $[_{DP}$ John] $[_{VP}$ $[_{V}$ looked $[_{PrtP}$ (right) up]] $[_{DP}$ the information]]

b. * {John} {looked (right) up} {the information}

To save this structure, the language is able to make use of an escape hatch: VP shells. By re-merging the object left of V and subsequently raising the verb to a higher shell, they surface in the same phonological phrase, allowing Case to be checked. This is exemplified below.

(112) a. $[_{DP}$ John] $[_{VP}$ $[_{V}$ looked $]_i$ $[_{VP}$ $[_{DP}$ the information] $[_{V}$ t_i $[_{PrtP}$(right) up]]]]

b. {John} {looked the information} {(right) up}

This account also explains why particles never follow PP, CP, AP or VP complements. Unlike DPs, which need to raise when the particle projects in order to check their Case features, these other categories do not have Case features to check, so they do not need to raise.

Neeleman & Weerman (1999:37) note that the above derivation provides an account for the issue of subextraction, wherein the extraction of the subpart of a DP is possible if the DP follows a particle but not if it precedes a particle.

(113) a. What did John look up information about *t*?

b. ?? What did John look information about *t* up?

(Neeleman & Weerman 1999:37, adapted)

In (113a), the DP is Case-marked in complement position, while in cases like (113b) the DP "is in fact an exceptionally case-marked specifier" (p. 37).[30] Others have shown that when Case is checked through ECM, subextraction is problematic (Neeleman & Weerman cite Kuno 1973; Kayne 1984. See also §5.6, where I discuss the subextraction data).

In Dutch, the facts differ from English. An object and particle, both of which precede the verb, may be split up by a modifier. This is exemplified below.

(114) dat Jan [$_{VP}$ de melk [$_{V}$ [$_{PrtP}$ helemaal op] drinkt]]
that John the milk completely up drinks

(Neeleman 2002:152)

Because the syntactic domain is the relevant domain for Case-checking in OV languages in this account, the object DP and verb in (114) are able to check their Case features within VP.

Neeleman also discusses particles involved in double-object particle-verb constructions. First, consider the following data for English. The judgments below are from Neeleman.

(115) a. John sent the stockholders (*right) out a schedule.

b. * John sent (right) out the stockholders a schedule.

c. * John sent the stockholders a schedule (right) out.

(Neeleman 2002:156-158, modified)

[30] In Neeleman & Weerman's (1999) theory, ECM constructions are licensed in VO languages because the verb and Exceptionally Case-Marked argument are in the same prosodic domain. Unlike Case, subextraction, would appear to be licensed in the syntactic structure. See their pp. 53ff for discussion of ECM in Dutch and OV languages.

Neeleman suggests the following as the surface structure for (115a), where the subscripts $_G$ and $_T$ specify the GOAL and THEME arguments. The prosodic phrasing is shown in (116b).

(116) a. $[_{V'}$ V $[_{VP}$ DP_G $[_{V'}$ $[_V$ t_V Prt] DP_T]]]

b. {V DP_G} {t_V Prt DP_T}

c. {V DP_G} {t_V PrtP} {DP_T}

Here, the GOAL DP receives Case from the raised verb, while the THEME DP receives Case from the verb's trace. If the particle projects, as the phrasing in (116c) reflects, the THEME DP cannot receive Case at PF, leading to ungrammaticality.

To rule out (115b), Neeleman argues that economy considerations prevent speakers from moving more than necessary. In this case, pied-piping a non-projecting particle would not prevent Case-checking from occurring properly. Instead, Neeleman rules out the derivation by noting that moving a verb and particle together is less economical than raising the verb alone.

Finally, Neeleman rules out (115c) as a violation of the theta-criterion in the following manner. Syntactically, the sentence can be derived from (117a) by creating two VP shells and raising the verb twice, as shown in (117b). Case-checking can occur at PF, as both DPs are in the same prosodic phrase as the verb or one of its traces, as shown in (117c).

(117) a. $[_{VP}$ DP_T $[_{V'}$ V PrtP]]

b. * $[_{V'}$ V $[_{VP}$ DP_G $[_{V'}$ t_V $[_{VP}$ DP_T $[_{V'}$ t_V PrtP]]]]]

c. {V DP_G} {t_V DP_T} {t_V PrtP} (Neeleman 2002:157)

The problem above is that the GOAL must receive its theta-role from a trace of the verb. Neeleman notes that this violates Brody's (1998) generalized projection principle, which Neeleman states as "Only chain roots can select or be selected" (p. 149). This only allows verbs to assign theta-roles from their base positions, and would prevent the GOAL from receiving a theta-role above. Additionally, this violates Neeleman's locality condition on theta-role assignment, which requires that the verb m-command its internal argument.

There are a few problems with Neeleman's account of the double objects in particle-verb constructions. First, contra the judgments Neeleman provides, there are speakers who find (115a) grammatical with *right*, though there is speaker variation. A more accurate grammaticality judgment would be %, which is not expected in this analysis.[31]

Another problem for Neeleman involves his judgment in (115b). It is well-documented that some speakers find such constructions grammatical as long as *right* is not present (e.g Kayne 1985:120, den Dikken 1995:117, Emonds 1976:83), and my own elicitations have confirmed this. Neeleman ruled this construction out as an economy violation; thus, he would need to claim that some speakers have relaxed economy conditions just for this construction.

A final problem for Neeleman's treatment of double objects in particle-verb constructions, and for most accounts of particle verbs, is the existence of sentences in which the particle follows both objects. *Back* readily appears in final position for all speakers, and other particles may occasionally do so for some speakers.

(118) a. Could you give John the invoice back?

b. % He broke the kids each a piece of the chocolate bar off.

The sentences above should be ungrammatical in Neeleman's account because the GOAL arguments should be unable to receive theta-roles, yet at least some speakers allow both sentences.

The account provided by Neeleman (2002) also fails to account for the contrasts found in complex particle-verb constructions, such as the following examples from Kayne (1985).

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[31] Neeleman is not alone in considering the structure in (115a) ungrammatical with *right*; for example, den Dikken (1995:123), Oehrle (1976:192) and Carlson & Roeper (1980:150, fn 12) provide the same judgments. Johnson (1991:626, fn 33), on the other hand, refers to the grammaticality of constructions like (115a) as 'weak ungrammaticality', and Toivonen (2003:177, fn. 12) notes that some speakers allow them as well. Kayne (1985:127) uses a single question mark for the sentence ?*They handed John right down the tools*. My own informants range from finding such sentences fully ungrammatical (even if the latter NP is made 'heavy'), to finding the sentences grammatical. For my part, I find such sentences grammatical.

(119) a. They're trying to make John out to be a liar.

b. (?) They're trying to make out John to be a liar.

c. * They're trying to make John to be a liar out. (Kayne 1985:113)

The contrast between (119a)-(119b) on the one hand and (119c) on the other is problematic for Neeleman because *John* belongs to the same prosodic phrase as its Case-assigner in all three instances; thus, (119c) cannot be ruled out as a Case violation, leaving it unaccounted for. Furthermore, when we remove *to be*, we see that the counterpart of (119b) is degraded, despite *John* appearing in the same linear configuration with the verb and particle as in (119b). It should presumably be able to receive Case in Neeleman's account, but then the degraded judgment remains mysterious.

(120) a. They're trying to make John out a liar.

b. *? They're trying to make out John a liar.

c. * They're trying to make John a liar out. (Kayne 1985:108f)

2.4.3 Kremers (2009)

At the crux of Kremers' (2009) analysis of particle verb constructions is the assumption that the mapping from syntax to phonology can refer to prosodic information. In his analysis, syntax marks hierarchical structure only, and linearization is decided by the mapping rules from syntax to phonology.

Kremers' assumes a Bare Phrase Structure approach to syntax (Chomsky 1995a), allowing a terminal node to simultaneously be a minimal and maximal projection. From the syntax, words and phrases are mapped onto prosodic structures. Minimal projections (heads) are mapped to prosodic words (ω), while maximal projections (phrases) are mapped to phonological phrases (φ) (cf. Selkirk 1981). He posits that an unmodified particle may be interpreted as minimal or maximal, thereby functioning prosodically either as a prosodic word or a phonological phrase, while a modified particle necessarily projects beyond its terminal node, thus forming a phonological phrase.

Kremers adopts Ackema & Neeleman's (2004) Input Correspondence mapping rule, requiring affixes which may attach to phrases in the syntax, such as *-ing*, to attach to the phrasal head in phonology. In the case of particle verbs, this ensures that inflectional morphology attaches phonologically to the verbal portion rather than the particle, both in VO and OV languages. ϕ represents the mapping function from syntax to phonology.

(121) Input Correspondence:

If a syntactic affix A selects (a category headed by) X, then ϕ(A) takes ϕ(X) as its host. (Kremers 2009:85)

Let us begin by examining how Kremers accounts for the particle-verb data in Dutch. Kremers limits his discussion of Dutch to Verb-Raising constructions, wherein a verbal head raises to the right across auxiliaries and modals (Kremers assumes this involves head-movement). In these constructions, the particle optionally raises with the verb ((122a) and (123)), with one major caveat: when the particle raises with the verb, it may not be modified (122c). If a particle does not raise with the verb, modification is possible (122b).

(122) a. dat Jan de bal t_i heeft [over geschoten]$_i$
that Jan the ball has [over shot]

b. dat Jan de bal vlak over t_i heeft geschoten$_i$
that Jan the ball right over has shot

c. * dat Jan de bal t_i heeft [vlak over geschoten]$_i$
that Jan the ball has [right over shot]
'that John kicked the ball just over the goal'

(Kremers 2009:86, cf. den Dikken 2003:2)

(123) dat Jan de bal over t_i heeft geschoten$_i$
that Jan the ball over has shot

(den Dikken 2003:2, modified)

Because the particle can only be modified when it does not raise with the verb, Kremers assumes that the particle can only project when it does not raise with the verb. Kremers posits that the reason for this lies in the syntax-phonology mapping, positing the following mapping rule for Dutch VPs (and presumably those in other OV Germanic languages).

(124) $[_{VP}\ V_1\ XP_2] \leftrightarrow *\varphi_2*\ \omega_1*$ (Kremers 2009:90)

This rule says that an XP complement of a verb (and any other non-complement XPs in VP) must linearly precede it at PF. Because Dutch allows scrambling, the phonological phrase containing the XP complement need not be the closest preceding phonological phrase. This is indicated by the asterisk following φ_2*, and the asterisk preceding it indicates that it may also be preceded by other phonological phrases.[32] Concerning the verb head, the rule in (124) indicates that it must be the first ω following all phonological phrases corresponding to XPs within the projection of V. When Verb-Raising occurs, the head V_1 in (124) apparently must not be taken to be the raised head, but the head of the projection raised to; thus, in (125a) below *wil* is V_1 and precedes the other heads, while [*zijn moeder* t_2] is XP_2.

(125) a. dat Jan $[_{VP}$ [zijn moeder t_i] wil op-bellen$_i$]
that Jan his mother wants PRT-call

b. zijn moeder wil op bellen
{ ω ω }$_\varphi$ ω ω ω

(Kremers 2009:88f)

The particle may not project if it raises with verbs in Verb-Raising constructions because it would cause the head, *wil* in this case, to not follow all XPs within its projection.

It is unclear whether V in (124) above refers to the verbal head only, or to a complex V containing the verbal head and non-projecting particle. For example, Kremers states that "the ω corresponding to the V head may actually be a sequence of ωs, as long as the ω corresponding to V is the first one in this sequence" (p. 88). In this sentence, the label 'V' appears to correspond to all heads in a complex V, but at the same time to the specific head from which it gets its label. Even if we distinguish them, the problem arises that while V in

[32] The notation Kremers provides is somewhat loose, as it indicates that the same XP_2=φ_2 may be repeated multiple times, while it is simply multiple instances of XP = φ which are allowed. A more accurate notation of this would be $[_{VP}\ V_1\ XP_2] \leftrightarrow \varphi^0\varphi_2\varphi^0\ \omega_1\omega^0$. This says that XP_2=φ_2 may be preceded and/or followed by zero or more instances of XP=φ, all of which must precede V=ω_1, which may precede zero or more instances of X=ω. Kremers also does not explicitly encode in his mapping the position of a projecting particle with respect to the objects in VO or OV languages, even though its position is quite rigidly determined (i.e. in English, it must follow the object XP but precede but precede adjunct XPs). Some other rules he proposes lack sufficient detail in the same manner, but I will not revise them below.

a Verb-Raising construction is the unraised, leftmost head, the V which determines the label of a particle verb is the rightmost head in the sequence of ωs. Kremers does not explicitly state how the particle is ordered with respect to the verb, but it seems to me that this could be easily accounted for by positing a rule similar to the following.

(126) $[_X\ X_1\ Y_2] \leftrightarrow \omega_2\ \omega_1$

This rule would require that when two heads are merged, the projecting head must follow the nonprojecting head. Presumably, the rule in English would contain the opposite ordering for particle-verb constructions (but not for compounds, cf. the Right-hand Head Rule). Crucially, however, this rule would apply only to heads adjoined via external merger (particles and verbs) and not those adjoined via internal merger (as in Verb-Raising constructions).

The necessary mapping from syntax to phonology in English differs not only in the linear order of ω_1 and ω_2 *vis à vis* Dutch, but also in how these elements may be repeated. In English, the verb head must immediately precede an object complement, with the exception of unmodified particles, which may intervene. Additionally, the object may be followed by other XPs within the projection of V. Kremers captures this pattern with the following rule.

(127) $[_{VP}\ V_1\ XP_2] \leftrightarrow \omega_1{*}\ \varphi_2{*}$ (Kremers 2009:90)

This rule will allow the verb ω_1 to be followed by a non-projecting particle ω_n which precedes the initial XP in VP, which is necessarily the object (even though this is not explicit in the rule above).[33] When the particle projects, it must follow the object, because the object must be the first phonological phrase to follow the verb head. In this way, both the continuous and discontinuous orders can be derived.

Perhaps the main problem with Kremers account is that it does not provide an explanation for the many distributional facts surrounding particle-verb constructions. For example, it does not offer an explanation for the contrasts seen in the double-object constructions

[33] Although the notation in (127) appears to indicate that V_1 is mapped onto a prosodic word ω_1 *followed by* the phonological phrase φ_2 (corresponding to YP_2), it should be noted that ω_1 does not actually *precede* the phrase φ_2, but rather it is the initial element of φ_2. If the mapping rules map heads to ω and phrases to φ, it must then have a restructuring rule which either places all heads ω in the following φ, or creates new φ containing one or more 'free' phonological words.

earlier in (115); specifically, the general inability of a particle to follow both objects (and exceptions to this), the reason why only some speakers allow the particle to precede both objects, and why many but not all speakers require that the particle remain unmodified when appearing between both objects. Other 'complex' particle-verb constructions likewise are crucial to account for, but they do not receive treatment here, nor is it obvious how they would be accounted for. Another problem for Kremers is that when a particle-verb construction takes a CP complement, the particle must precede it, even when modified. It seems that Kremers must make reference to some notion like Case to define XP_2 in (127), otherwise it incorrectly predicts that CP arguments should behave just like DP arguments. Finally, the notation in (127) *requires* the particle to project when it does not immediately follow the verb, even when it is not modified. In the actual prosody of the sentences below, however, nontransparent particles do not easily appear in their own prosodic phrase.

(128) John shut the children up.

a. { John } { shut the children up }

b. * { John } { shut the children} {up }

To account for the example above, Kremers would need to posit an additional phonological restructuring rule to ensure the particle appears in the same phonological phrase as the preceding XP. This is not implausible; such a rule was explicitly provided in Idsardi (1989), and I make a similar assumption below.

2.5 Other

The remaining accounts I review do not fall nicely into the categories above, so they will be treated individually. That said, there are a couple similarities shared by many of the following accounts. First, many of the following analyses make use of multiple structures that have been discussed above, allowing them to overcome some of the major problems associated with the structures when used alone. I will do likewise in my own syntactic analysis in Ch. 4. Second, several of the analyses below, in addition to the analyses by Toivonen (2003) and Blom (2005) reviewed above, highlight the difference between what

I will call transparent and nontransparent particles, noting that transparent particles have a wider syntactic distribution than nontransparent particles (e.g. only transparent particles can topicalize; see §4.5 for more discussion). There are several ways this has been dealt with, but the most common appears to be treating transparent particles as optionally having the same structure as resultative secondary predicates. An alternative analysis, which I adopt with minor revisions in §4.5.5, is found in Zeller (2001) where the syntactic differences are due to a lexical restriction on nontransparent particles, requiring them to be in a particular structural configuration with a verb in order for their nonliteral meanings to arise.

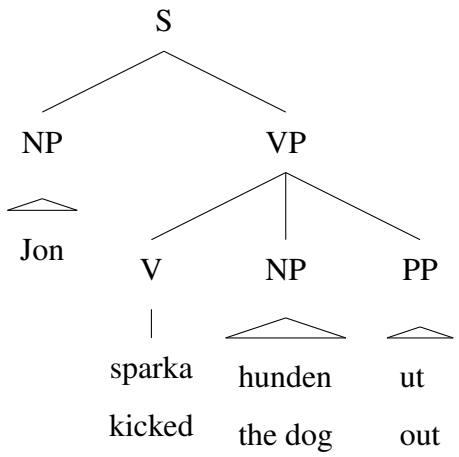
2.5.1 Åfarli (1985)

Åfarli (1985), focusing on Norwegian, argues that particle-verb constructions are a type of causative construction, having the underlying structure [S V O Pred]. Åfarli claims that particle-verb constructions differ from other causative constructions in that particle-verb constructions allow leftward movement of the particle, optionally forming a "word-accent unit" (p. 82) with the verb when they are reanalyzed as a single, complex predicate. To support his claim that particles are a subset of the causative construction, Åfarli notes that any Norwegian causative with the structure [S V Pred O] has a corresponding causative in the order [S V O Pred], but not vice versa.

In part because NP + Prt sequences cannot topicalize (e.g. (129)), and thus do not appear to behave as constituents in this regard, Åfarli adopts the ternary branching structure in (130) rather than one which treats the NP and particle as a constituent.

(129) * Hunden ut sparka vi
dog.the out kicked we
'The dog out kicked we' (Åfarli 1985:81, adapted)

(130) (Åfarli 1985:81, adapted)



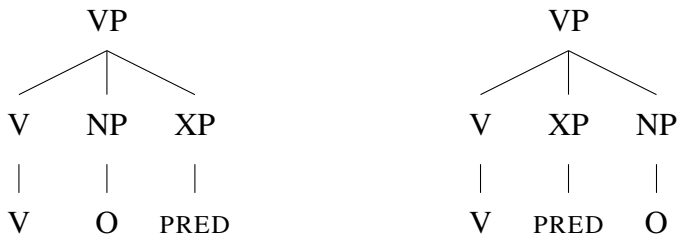
By treating the predicate as a verbal complement, this structure also captures the fact that these predicates are often required.

(131) a. Vi drakk Per full
'We drank Per drunk' which means
'We drank together with Per so that he became drunk'

b. * Vi drakk Per
'We drank Per' (Åfarli 1985:82)

To derive the continuous word order, Åfarli claims that the verb and predicate are reanalyzed as a "complex predicate-kernel" (p. 83) which then moves left of the object. This further results in the ability for the verb and particle to form a word-accent unit.

(132) Underlying Order → Reanalysis



Semantically, Åfarli follows Williams (1982) and Taraldsen (1983) in claiming that the object in a particle-verb construction recieves a single compositional theta-role from the (continuous or discontinuous) complex predicate formed by reanalysis of the verb and

predicate. To support his claim that a compositional theta-role is assigned, Åfarli shows that the particle and verb appear to be merged together in passive constructions, presumably assigning a theta-role together.

(133) a. Vi klipte tråden av
we cut thread.the off
'We cut the thread off'

b. Tråden vart avklipt (av oss)
thread.the was off.cut by us
'The thread was cut off (by us)' (Åfarli 1985:89, adapted)

(134) a. Vi kjørte avfallet bort
we drove waste.the away
'We drove the waste away'

b. Avfallet vart bortkjørt (av oss)
waste.the was away.driven by us
'The waste was driven away (by us)' (Åfarli 1985:89, adapted)

Åfarli's adoption of a ternary branching structure runs into several problems. First, his claim that [NP + particle] sequences, and [NP + Pred] sequences in general, do not form constituents does not appear to be true. In English, although we cannot topicalize such sequences in line with the Norwegian data in (129) (e.g. **The lights off, he turned*), there are other constructions in which they do appear to behave as a constituent (e.g. *With the lights off, we slept*, or *Bill turned the lights off and the TV on*). I suspect that this is the case for Norwegian as well. This fact, however, is not captured in the ternary branching structure used by Åfarli.

The ternary branching structure also does not provide an obvious explanation for differences between the two orders in constructions like gapping or subextraction, exemplified below. This and other similar data are not discussed in Åfarli, so it is unclear how or whether he would be able to account for it using his proposed structure.

(135) a. Jones pulled the old tablecloth off, and Peters, the new one on.

b. * Jones pulled off the old tablecloth, and Peters, on the new one.

((a) from Fraser 1976:3)

(136) a. Who did you tear up a picture of __?

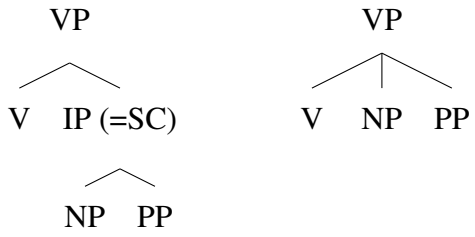
b. ?* Who did you tear a picture of __ up? (Svenonius 1992:111)

2.5.2 Aarts (1989)

Aarts (1989), focusing on English, draws a distinction between particle-verb constructions in which the particle and object are in a subject-predicate relation (e.g. *turn the lights on*), and those in which they are not (e.g. *look the word up*). To justify this distinction, he points out that only in the cases where a subject-predicate relation is present can the particle and object NP appear absent the verb in other constructions (e.g. *the lights are on* vs. **the word is up*). Specifically, he shows that only the more transparent particles can appear without an associated verb in *with*-NP-Prt adjuncts, in subject positions, as the complement of a copular verb, in imperatives, in coordination constructions, and in several other constructions (see §4.5.1, where I review this and other data).

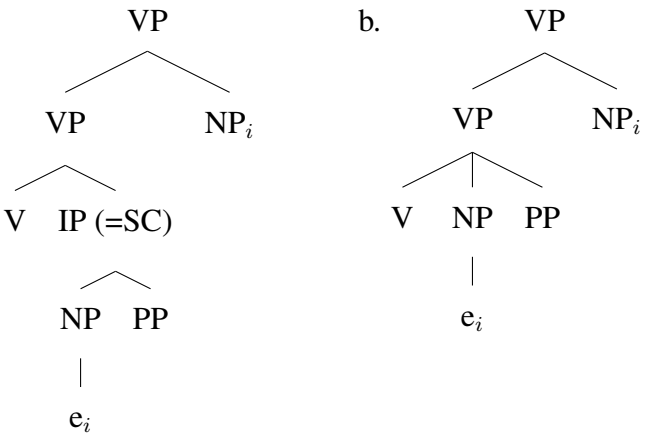
Syntactically, Aarts assigns the transparent instances of particle-verb constructions a small-clause structure, while assigning the non-transparent cases a ternary branching structure. In both cases, the particle is an intransitive preposition heading a PP. The base forms are represented, respectively, in (137a) and (137b) below. These are also the structures of the surface forms of the discontinuous order.

(137) a. Transparent b. Nontransparent (Aarts 1989:283, adapted)



The continuous order in both cases is derived via rightward movement of the object, which then adjoins to VP. Case and theta-roles are assigned the object's trace and transmitted to the moved NPs.

(138) a. b. (Aarts 1989:284f)



To account for the fact that pronouns must generally precede particles and for the fact that *right*-modification is possible only in the discontinuous order, Aarts slightly modifies Kayne's (1985) approach involving a Heavy NP Shift-like movement. His modified definition and weightings, which are claimed to operate at PF, are given below.

(139) A maximal projection A may appear in an adjoined position after rightward movement across a maximal projection B only if A is more heavily weighted than B.

Weightings:

i. heavy XP (with PP or clause): 2

ii. regular XP: 1

iii. light XP (with only head): 0 (Aarts 1989:286)

As was already noted in the discussion of Kayne (1985) (§2.1.1), this type of analysis fails to explain why rightward-shifted NPs must remain left of all other right-adjoined XPs in the verb phrase.

Aarts extends his analysis to the complex particle-verb constructions in the examples below. Both the *make out* + SC construction in (140a) and the double-object construction with *back* in (140b) are claimed to contain a subject-predicate relation between the verb and particle, but this claim is not extended to other double-object particle-verb constructions such as (140c).

(140) a. She made Jim out a fool.

b. She sent Jim back those files.

c. She wrote Jim out a note. Aarts (1989:288)

According to Aarts, these three examples are derived from the three different underlying structures provided below.

(141) a. She [$_{VP}$ made [$_{SC}$ Jim a fool] [out]]

b. She [$_{VP}$ sent [Jim] [$_{SC}$ those files back]]

c. She [$_{VP}$ wrote [Jim] [a note] [out]] (Aarts 1989:288)

In each case, the rightmost NP in the above examples may shift around the particle to derive the continuous order, in accordance with (139). Aarts admits, however, that he has no explanation for why it must cross the NP in the case of (140a/141a), which is ungrammatical if the NP does not move. Aarts' treatment the double-object construction in (141c) is also problematic; while his account predicts that the particle-final order of the underlying structure should be an acceptable surface form (Aarts claims that it is an acceptable surface form), speakers generally consider this order ungrammatical.

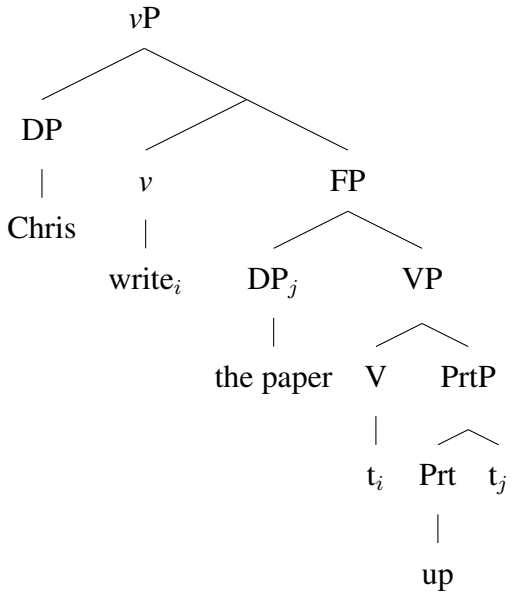
Aarts also indicates, incorrectly, that the particle cannot be moved in front of both NPs in any of the examples in (140). Aarts explains this by noting that leftward movement of the particle would result in a Case Filter violation in all three types. Rightward movement of the entire SC in (141a) would also result in a Case Filter violation. In contrast, rightward movement of both NPs in (141b) or (141c) would involve movement of nonconstituents, which is disallowed. In fact, speakers generally allow *back* to precede both objects of a double-object construction, and some speakers allow other particles to as well; thus, Aarts analysis of complex particle-verb constructions cannot be maintained.

2.5.3 Harley & Noyer (1998)

Harley & Noyer (1998) claim that particles are projecting words which merge with verbal heads in their regular use. Transitive particle verbs take objects as the complement of

the particle, and in this regard this account partially resembles the small-clause account by den Dikken (1995), who treated particles as ergative prepositions. Object NPs are claimed to obligatorily raise to the specifier position of a Case-assigning functional projection between VP and *v*P. This is represented in the structure below, which derives the discontinuous order.

(142) (Harley & Noyer 1998:146, adapted)

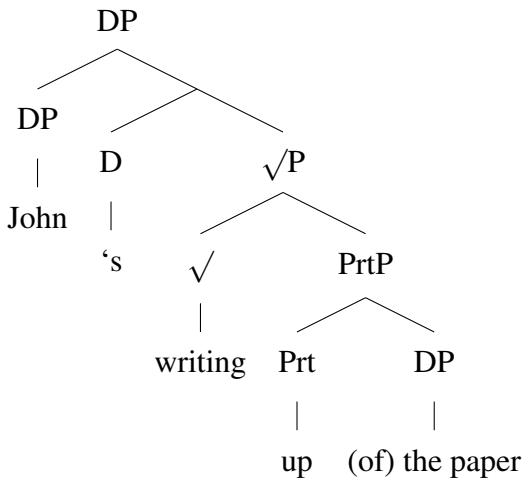


In order to derive the continuous order, Harley & Noyer claim that the particle 'cliticizes' to the verb via head movement, after which the verb and particle raise to *v* together. To account for the fact that *right*-modification is only possible in the discontinuous order, they posit a general prohibition against stranding PP adverbials; thus, cliticization of the particle cannot occur if it is modified.

In addition to discussing the general word-order alternation of the particle-verb construction, Harley & Noyer also discuss particle verbs in 'mixed' nominalizations. Operating within the framework of Distributed Morphology (Halle & Marantz 1993, 1994), Harley & Noyer claim that nominalizations with particle verbs in which the object precedes the particle are ungrammatical due to the lack of a Case-assigning functional projection in nominalizations, as reflected in the tree in (144).

(143) * Chris's writing of the paper up. (Harley & Noyer 1998:13)

(144) (based on Harley & Noyer 1998:14)



There are a number of issues with this account. First, because the verb and particle raise to *v* as a single unit, their account runs into the inflection problem, which they do not discuss. Further, raising the verb and particle together fails to capture the fact that particles, if they do raise at all, cannot raise as high as verbs. For example, Svenonius (1994) provides the following example from Northern Irish English, where the particle precedes the object but is not adjacent to the verb. In Harley & Noyer's account, the verb would need to excorporate at some point. See also §4.4 for other evidence that particles do not raise.

(145) Take you out them clothes to the kitchen! (Svenonius 1994:Ch. 3, fn 4)

A third problem is the lack of an account for why object pronouns must precede particles. It is commonly assumed that object pronouns cliticize onto verbs; if particles likewise cliticize, as Harley & Noyer claim, then it is unclear why the pronoun must always cliticize first. Further, the fact some dialects allow object pronouns to precede negation when the main verb raises above it, while particles must remain below negation, indicates that it is unlikely that both object pronouns and particles cliticize onto verbs (see §4.4 for additional examples).[34]

(146) a. **Lay not up** for yourselves treasures upon earth... (Matthew 6:19, KJV)

b. * He that goeth out not... (unattested, presumed ungrammatical)

[34] KJV = King James Version of the Bible

Another problem for this account is that it offers no explanation of the subextraction pattern highlighted by Svenonius (1992) (see §2.1.2); because the NP occupies the same position in both orders, a syntactic explanation of the subextraction facts is not possible.

A fifth problem involves double-object constructions with particle verbs. Harley & Noyer discuss double-object constructions only to show that they do not occur in nominalizations. They do not discuss actual verbal uses, as in the examples below, however they do provide a hint of their proposed structure, which would involve two Case-checking functional projections between *v*P and $\sqrt{}$P (=VP in verbal instances). Following later work by Harley (e.g. Harley 2002), the goal and theme argument would originate in a small-clause complement to the verb or particle. Regardless whether this small clause originated to the right of the verb (which would likely mean that the particle heads the small clause) or to the right of the particle, if both arguments must raise for Case, none of the data below is explained.

(147) a. * John sent the stockholders the report out.

b. John sent the stockholders out the report.

c. % John sent out the stockholders the report.

(147a) would be predicted to be grammatical when the particle does not cliticize, (147c) should be grammatical for all speakers, and the grammaticality of the most accepted order (147b) would be unaccounted for.

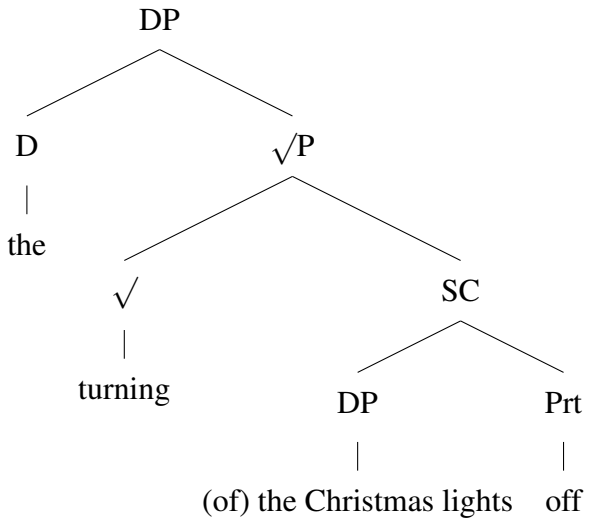
Finally, although Harley & Noyer rule out the discontinuous order in mixed nominalizations, some speakers accept some nominalizations of particle-verb constructions in the discontinuous order; specifically, when the particle is transparent, the grammaticality often improves considerably, to the point where some speakers find the constructions fully grammatical.

(148) % The turning of the Christmas lights off saved the city thousands of dollars.

In cases like this, Harley & Noyer predict that the sentence should be ungrammatical. They might be able to resolve this problem, though, by claiming that those speakers that allow

(148) allow transparent particles to optionally be treated as resultatives, which they treat as small clauses verbal ($\sqrt{}$P) complements which take the particle-verb object as their subject. This would yield the following structure.

(149)



2.5.4 Vinka (1999)

Vinka's (1999) account of Swedish particle-verb constructions argues for a distinction between predicative and nonpredicative particles. Nonpredicative particles are more restricted in their word order, having a distribution which is a subset of the distribution of predicative particles. One of the main distinctions between the two is that nonpredicative particles must precede all objects, including pronouns, while predicative particles are able to follow pronouns. This is shown below, where the (a) examples have full nP objects and the (b) examples have pronominal objects.

(150) Predicative

a. Kalle satta {på} TVn {*på}
Kalle switched on TV.the on
'Kalle switched the TV on.'

b. Kalla satta {på} den {på}
Kalle switched on it on
'Kalle switched it on.' (Vinka 1999:570f, adapted)

(151) Nonpredicative

a. Kalle smutsade {ner} tröjan {*ner}
Kalle dirtied down shirt.the down
'Kalle made the shirt dirty.

b. Kalle smutsade {ner} den {*ner}
Kalle dirtied down it down
'Kalle made the it dirty. (Vinka 1999:570f, adapted)

A second difference between the two is that nonpredicative particles must appear prefixed onto the verb in the analytic passive construction, while predicative particles optionally remain after the verb.

(152) Predicative

Radion blev {på-}satt {på}
radio.the became on-switched on
'The radio was switched on.' (Vinka 1999:581)

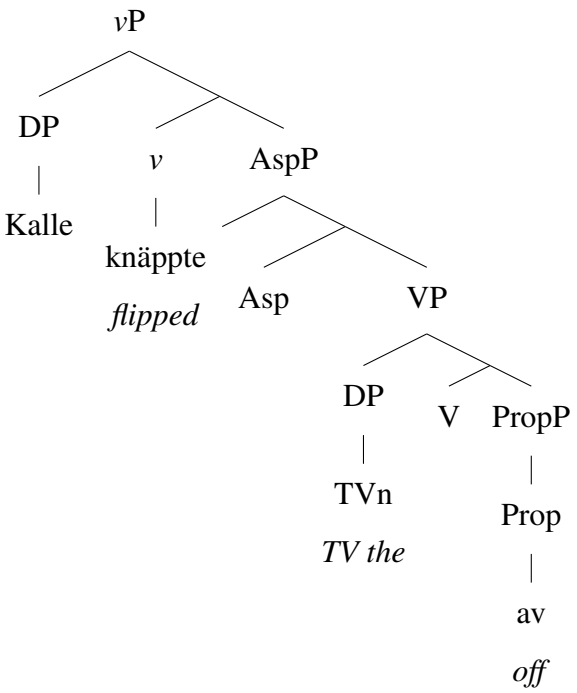
(153) Nonpredicative

Tröjan blev {ner-}smutsad {*ner}
shirt.the became down-dirtied down
'The shirt was made dirty.' (Vinka 1999:572)

As a result of differences like those above, Vinka argues for two different structures. The structure he proposes for nonpredicative particles is also available to predicative particles, but predicative particles may also occur in an additional structure. Both structures are

based on Baker (1997), who decomposes the lower VP shell into a VP layer and a property-denoting argument of V called PropP. In Baker's analysis, verbs originate in Prop, while V is headed by BE or BECOME. Vinka argues that predicative particles may head PropP, while nonpredicative particles head the complement PrtP of Prop^0. The specific structure Vinka proposes for particle-verb constructions with predicative particles is reproduced below.

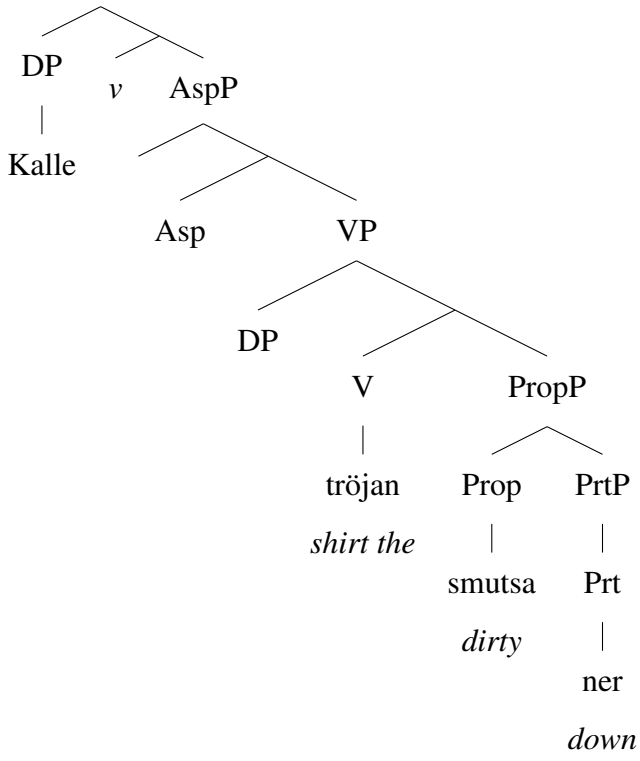
(154) (Vinka 1999:578)



Vinka claims that because the particle is closely tied to aspect, it must raise to Asp^0 to check the aspectual feature of Asp^0. The particle (Prop^0) and the lower V conflate and raise to Asp^0 as a unit. The DP, when a pronoun, optionally raises to SpecAspP to give the discontinuous order in (150b). The main verb spells out manner, which in this case is generated in *v*.

Nonpredicative particles, in contrast, exhibit the following structure.

(155) *v*P (Vinka 1999:578)



Here, the main verb originates not in *v* but in Prop^0. It merges with V, raising through Asp^0 to *v* but is unable to check the strong aspectual feature in AspP. As a result, PrtP must raise to SpecAspP to check the aspectual feature (the closer DP lacking the aspectual feature).

One significant problem with this account is that it makes use of an aspectual feature to trigger movement. It is known that DPs influence the aspect associated with verb phrases in a manner similar to particles (e.g. Krifka 1989), so it is unclear why DPs should lack aspectual features while particles—both transparent and nontransparent—bear aspectual features. Furthermore, if transparent particles bear aspectual features, full PPs should do likewise and should then be able to raise to SpecAspP, occurring in front DPs. At least in English, this is not possible. Finally, no explanation for the position of inflection on the verbal root rather on than the right edge of the complex head is provided.

Consider next how Vinka accounts for the behavior of particles in the analytical passive construction. When a predicative particle follows the passive form of the verb, the derivation may proceed as described above (replacing *v*P with *v*-P-Pass), with the exception

that the object DP raises to SpecTP. Accounting for the prefixed order with nonpredicative (and presumably predicative) particles involves a slightly different derivation than that in nonpassive clauses. There, PrtP raised to SpecAspP to check its aspectual feature. If PrtP raises to SpecAspP, however, it will block the DP from raising to SpecTP to check the EPP features, so this derivization is not allowed. Instead, Vinka claims that the particle incorporates into $Prop^0$, which then conflates with V^0 and raises through Asp^0, checking its aspectual feature. The DP is not blocked by PrtP and may raise to subject position.

There are several problems with this latter structure. First, if DP does not block PrtP from raising to SpecAspP in active clauses because it lacks an aspect feature, why should PrtP block DP from raising to SpecTP to check the EPP feature? Presumably PrtP lacks this feature, otherwise PrtP should be able to raise to SpecTP to check the EPP feature itself. A smaller problem for Vinka is that he provides no explanation for why a particle can incorporate into $Prop^0$ in the passive construction but not in active constructions.

2.5.5 Zeller (2001, 2002)

Zeller argues that particles exhibit two different structures, one involving a particle that projects a phrase and one involving a particle that does not project a phrase. Because particles are alternatively phrases or nonprojecting words, the word-like and phrase-like behaviors of particles are not unexpected.

At the center of Zeller's (2001) claims regarding projecting particles is the claim that particles are distinguished from other lexical word categories in large part by particles' lack of functional structure, as seen in his definition of 'particle' below.

(156) *Particle definition*

> Particles are heads of *non-functional* phrasal complements of the verbs and do not leave their base position (Zeller 2001:127)

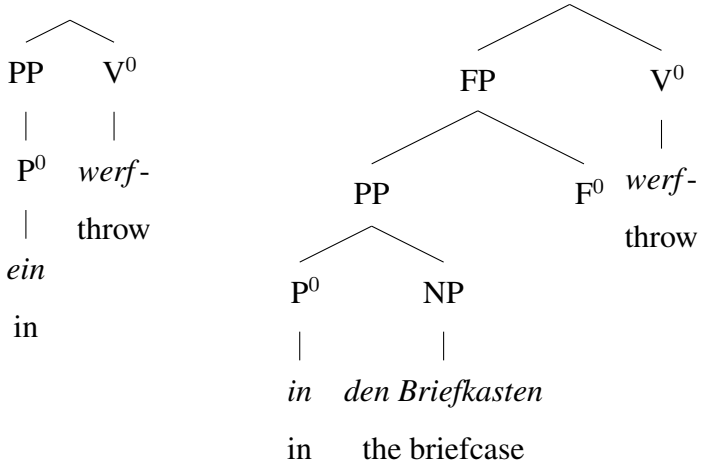
It is widely held that some lexical word categories project functional structure: *v*P for verbs, DP for nouns, and AgrP for adjectives. There is also a growing literature suggesting that prepositions also project functional structure (e.g. Koopman 2000 and various articles

in Cinque & Rizzi 2010). Zeller suggests that Case-assignment is a property of functional projections, and the fact that particles do not assign Case follows from his claim that they do not project functional structure (see §4.3.2.1 for some of his arguments). Concerning the syntactic relation between verbs and particles, Zeller argues that particles head PrtP complements of verbs when they project, and they merge directly with V when they do not project (forming V^0, not $\bar{V}$). This syntactic relationship is also considered crucial in accounting for the (somewhat) idiomatic nature of particle verbs. In Zeller's terminology, the verbal head and particle are 'structurally adjacent' because of the lack of intervening functional heads, and this relationship plays a role in the semantic computation of particle verbs. Zeller's definition of 'structural adjacency' is provided in (157) below, and arboreal representations of a particle verb and a verb with a full (projecting) prepositional phrase complement are provided in (158a) and (158b), respectively.

(157) *Structural adjacency* (Zeller 2001:36)

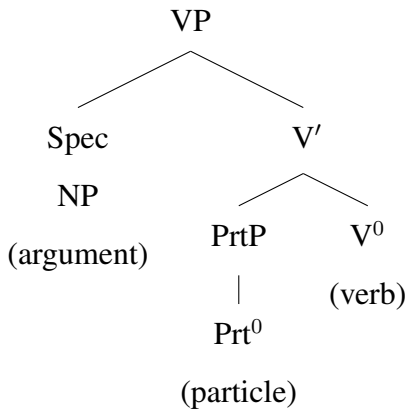
A head X and the head Y of its complement YP are *structurally adjacent*.

(158) a. b. (based on Zeller 2001:4)



Internal arguments of transitive particle verbs are claimed to originate in the specifier position of VP.

(159)



(Zeller 2001:53)

Zeller adopts what he refers to as an *in-situ* approach to particle verb constructions, claiming that projecting particles generally remain *in situ* in the overt syntax (topicalization of particles being an exception). By leaving the particle *in situ*, Zeller can account for the fact that infinitival *zu* and participial prefix *ge-* must intervene between a particle and verb when present. For example, on the standard assumption that the verb raises to Infl^0 in infinitival clauses and ends up to the right of *zu*, the *in-situ* particle will necessarily precede *zu*, as desired.

(160) [[die Tür [ab t_i]] [zu schließ$_i$-en]] (Zeller 2001:72, modified)

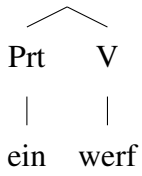
Although Zeller argues that verbs and particles do not form a complex head under normal circumstances, he argues that they do occasionally form a complex head. This is possible because the verb and particles are lexically required to be 'structurally adjacent', thereby allowing them to undergo 'reanalysis' as head. Zeller specifically claims that particle verbs form a complex head when serving as the input to certain word-formation processes, in the Verb Raising construction in Dutch, and in constructions in VO languages which exhibit the continuous word order.

Zeller's proposal that particle verbs optionally project seems to nicely account for the word-like properties of particle verbs, but his specific argumentation runs into several problems. First, the requirement that particles be 'structurally adjacent' to the verbs is a lexical specification, and it is a necessary condition for them to be interpreted in their nonliteral senses. Fully transparent and productive particle verbs, however, presumably do not need to be lexically specified as 'structurally adjacent'—nor are they required to be structurally

adjacent, as evidenced by their ability to topicalize—but these particles may still undergo reanalysis. Thus, these particles must exist with two lexical specifications, one requiring structural adjacency and allowing them to undergo reanalysis, and another making no mention of structural adjacency and allowing them to topicalize. A more significant problem with Zeller's proposal is that it needs additional constraints to explain why reanalyzed particle verbs (i.e. complex V^0s) do not raise to C in the OV Germanic languages. Zeller (2001:257) provides such an *ad hoc* constraint, claiming that reanalysis applies only when a newly-formed complex V^0 is adjoined to lexical head W^0; in other words, reanalysis of particle verbs is possible in the OV languages only when the reanalyzed complex forms part of larger morphological structure. Zeller specifically notes that this requirement is not found in English or Norwegian. This leads to the third, most significant problem for Zeller. Recall that Zeller uses the ability of inflectional morphology (the infinitival *zu* and participle *ge-*) to intervene between the verb and particle as evidence that particles remain *in situ* in OV Germanic languages. In English and Norwegian, in contrast, Zeller claims that a verb and particle are reanalyzed as a complex head which raises to v^0 as a single unit. But even in this order, inflectional morphology is found between the verbal root and the particle. Zeller provides no explanation for why inflectional morphology does not affix to the particle. Further, we can easily find examples of reanalysis involving verbs and other complements where inflectional morphology is simply attached to the right of the complex (e.g. *haul ass* can be reanalyzed in some dialects to yield *haul-assed* rather than *hauled ass*). This suggests that the claim that verbs and particles raise as heads in English does not hold.

In the final chapter of Zeller (2001), it is suggested that the difference between the particles occurring as phrasal or word elements might be made to fall out from Bare Phrase Structure (Chomsky 1995a). The basic idea is that when a particle and verb combine, the particle has not projected and may thus be interpreted as a minimal or maximal projection. If it is interpreted as a maximal projection, it will behave as a phrase, whereas if it is interpreted as a minimal projection, the complex containing the verb and particle will behave as a head.

(161)



The problem with this suggestion is that, contra Zeller's (p. 298) claim that BPS allows the result of merger of two minimal projections as a head (i.e. another minimal projection), this is not actually possible in BPS. In a structure like [$_Z$ X Y], where X and Y are both terminal nodes and hence minimal, Z cannot be interpreted as a minimal node (i.e. as a head Z^0), even if it shares its label with X or Y. As a result, Zeller's account of the continuous order in English, which requires the verb and particle to raise as a complex head, is not consistent with the non-minimal status of the verb + particle constituent.

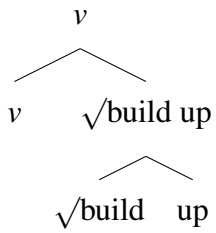
2.5.6 Basilico (2008)

2.5.6.1 Simple Particle-verb Construction

Basilico (2008) provides an account of the particle-verb construction couched within the framework of Distributed Morphology (Halle & Marantz 1993). He adopts two different structures for the particle-verb construction, one involving a nonprojecting particle and deriving the continuous word order, the other involving a projecting particle and deriving the discontinuous word order. I begin by examining the structure involving the nonprojecting particles.

To derive the continuous word order, Basilico argues that a particle merges with an uncategorized Root to form a "complex Root" with "no categorial information" (p. 749). The verb + particle complex then merges with the categorizing head *v*, forming the structure below.

(162)

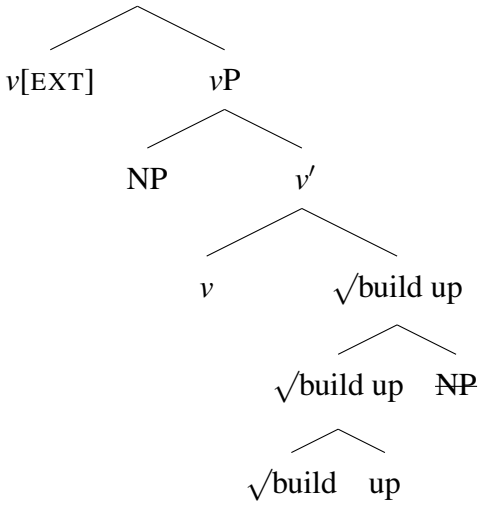


Basilico argues that because the verb and particles are combined prior to merging with the categorizing head *v*, the combinations are often seemingly idiomatic. This is because, he claims, Roots are assigned an interpretation "in the presence of the first functional element it combines with", which includes "particles as well as categorizing heads" (p. 740), later (p. 748) clarified to mean that Roots are interpreted in the presence of projecting particles but not in the presence of nonprojecting particles. For example, the nontransparent meaning of *make out* 'engage in heavy kissing' need not be built up from the basic meanings of its parts, as its meaning is looked up in the Encyclopedia only after the words are already combined. Of course, Roots and particles may be assigned their standard interpretations as well. Although the Root and particle are treated as a complex Root, Basilico treats the particle semantically as a predicate which creates a relation between a result state and an individual, in line with a small-clause approach. Further, although *v* is normally responsible for introducing the internal argument of a verb in Basilico's account, the particle introduces this argument in particle-verb constructions. Thus, it follows that the selectional properties of a particle verb need not be the same as the simplex verbs on which they are built.

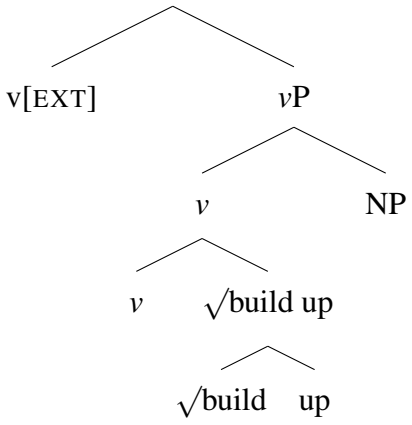
From the structure provided above, Basilico assumes that the verbal Root raises, without the particle, to *v* to be categorized, and to a higher *v*[EXT] in transitive structures (not represented above). Though Basilico explicitly rules out raising the verb and particle together on the basis that verbal inflection cannot occur on the particle, he does not provide an explanation for what prevents the entire complex from raising to *v*. In fact, later in the article, he reverses his position and suggests that the entire *v* can raise to *v*[EXT], suggesting that inflection is unproblematic because the Root alone has raised to *v*. Unless the lower *v* is responsible for the assignment of inflection, however, this explanation is unsatisfactory.

In the case of transitive particle verbs, Basilico suggests that the object nP is able to merge into the structure at two different points in the derivation. It may merge with *build up* either before or after this complex merges with the categorizing *v* head. If the nP merges early, it is unable to receive Case *in situ* and must raise to Spec*v*P, where it receives Case from the higher *v*[EXT] (the head which introduces the external argument). If the nP merges late, it merges as the complement of *v*, where it receives Case from *v*[EXT] *in situ*.

(163) a.



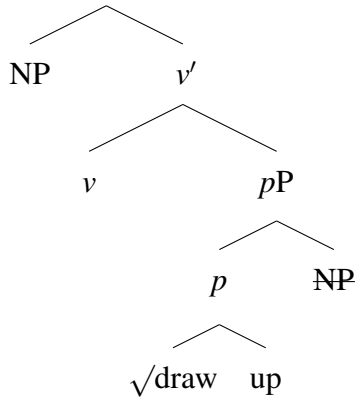
b.



(Basilico 2008:741, 745, adapted)

One problem with the structure in (163a) above, however, is that if the complex Root $\sqrt{}$*build up* is not interpreted until it merges with *v*, there is no way for the syntax to know that $\sqrt{}$*build up* will need an NP object before that point. To account for this, Basilico argues that a particle optionally projects its label (or obligatorily, such as when the particle is modified by *right*), and when it does, the Root + particle is sent off for interpretation before merging with *v*. He assumes once the complex has been sent for interpretation, it must satisfy its argument positions as soon as possible. This forces the object NP to merge with the Root + particle complex before *v* merges into the structure. In this position, however, the NP is unable to receive Case and must later raise to Spec*v*P. Moreover, *v* apparently has an EPP feature which must be satisfied (p. 750), forcing the NP to raised to Spec*v*P before *v* is sent off for interpretation.

(164) (Basilico 2008:748, adapted)



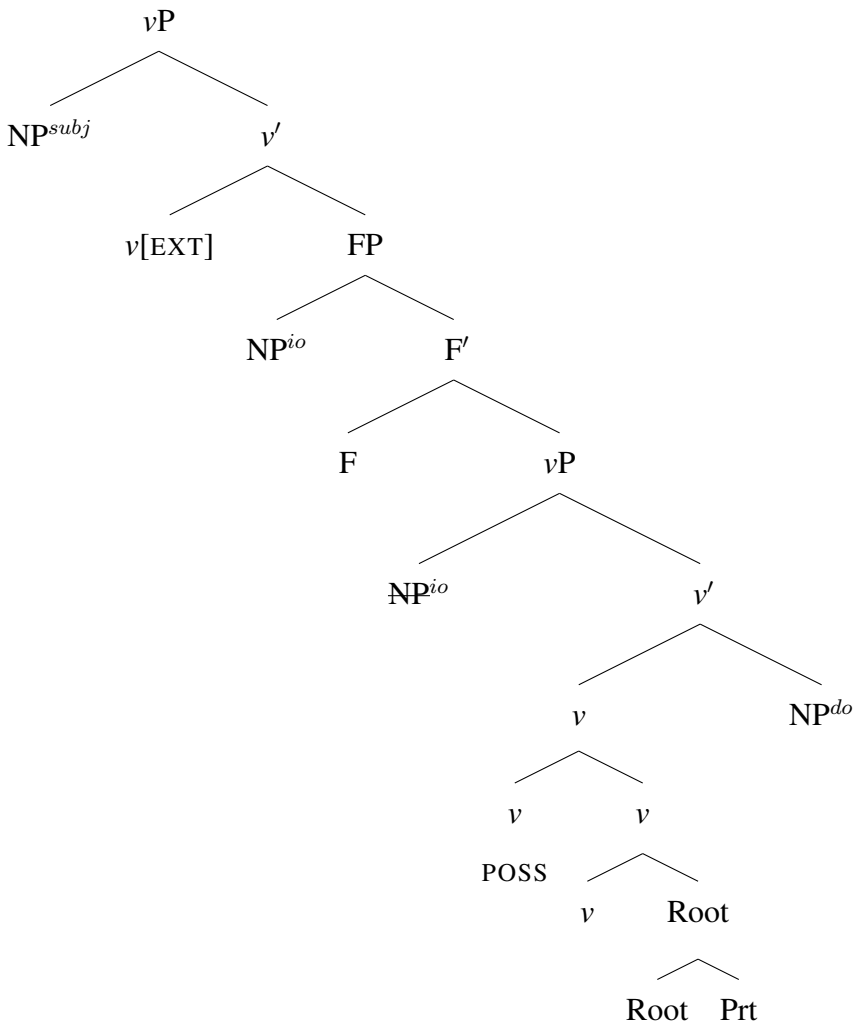
Although Basilico ultimately rejects the structure in (163a) for that in (164), he maintains the structure with the nonprojecting particle in (163b). Depending on how word stress is assigned, this structure is potentially problematic, however, because it leaves the particle uncategorized even though the particle bears word stress. If we assume that word stress is assigned at PF, we need a theory which can consistently assign stress to uncategorized particles without assigning word-level stress to uncategorized, sub-word morphemes or syllables.

2.5.6.2 Complex Particle-verb Construction

Basilico notes that unlike the particle-verb construction, where the addition of the particle can affect the interpretations of the Root, in the benefactive double-object construction the interpretation of the Root remains the same as its interpretation in simple, monotransitive constructions, as does its selectional properties. That is, the benefactive construction entails the activity denoted by the transitive use of the verb alone. For this reason, Basilico claims that the predicate responsible for the benefactive intrepretation, *v*[POSS], merges with an already categorized Root rather than an uncategorized Root. Once the complex benefactive predicate is created, the direct object is merged, followed by the indirect object, which subsequently raises to SpecFP. Case is assigned to the direct and indirect objects by F and the higher *v*, respectively.[35]

[35] Basilico also provides a semantics for *v*[POSS] which accounts for the argument sharing between itself and the verb, and which identifies the events associated with the Root and *v*[POSS] as the same. Because the lambda operator associated with *v*[POSS] binds the argument of the categorized Root, the requirement that argument positions be saturated as soon as possible is fulfilled even though the direct object does not merge until after

(165)



(Basilico 2008:762, modified)

Basilico claims that 'dative' double-object constructions do not share the structure above for a number of reasons related to apparent semantic distinctions between the benefactive and dative double-object constructions constructions. Because my main concern is the syntax, I shall not discuss this distinction; however, it is important to note that Basilico claims that all particle verbs found in double-object constructions are specifically in benefactive double-object constructions and thus have the structure in (165).

As presented above, the structure in (165) correctly accounts for the most common word order in double-object constructions containing particles (i.e. with the particle between

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v[POSS]. I restrict my discussion of his account to the syntax.

the direct and indirect objects), and it also explains the oft-claimed (though not entirely correct) restriction against the particle being modified by *right* in this order, since the particle has not projected. Basilico notes that many speakers additionally allow the particle to precede the indirect object and that speakers occasionally allow the particle to follow the direct object, and he attempts to account for these possibilities. To account for the former possibility, Basilico claims that the entire complex head [$_{v}$ *v*+Root [$_{Root}$ ~~Root~~ Prt]] can raise successive-cyclically to *v*[EXT]. Supposedly, this does not present a problem for the attachment of inflectional morphology because the Root has raised to (the lower) *v* without the particle. If not all inflectional morphology is assigned at this lower *v*, however, this account must posit some additional mechanism to explain why inflectional morphology does not appear at the right edge of the entire *v*. Basilico provides no such mechanism.

When the particle follows both objects in a double-object construction, Basilico notes that *right*-modification is possible. As a result, he suggests that this order is derived from the projecting particle structure. In this structure, we already saw that the direct object of the particle verb must raise to *v*P, left of the particle because it cannot receive Case *in situ* (or to satisfy an EPP feature of *v*). The benefactive head *v*[POSS] merges with *v*P, after which the direct object raises again so that it may saturate the argument position introduced by *v*[POSS]. The indirect object is then introduced, and the derivation proceeds as in (165). While this derives the correct order, Basilico's account fails to account for at least two important aspects of this order. It does not explain why this order is generally considered ungrammatical or at least marginal, and it does not explain why this order is generally restricted to transparent particles.

2.5.7 Los et al. (2012), Elenbaas (2007) and Booij (2010)

Drawing largely on earlier work from its various authors, Los et al. (2012) examine the particle-verb construction in English and Dutch from both diachronic and synchronic perspectives, providing a fascinating overview of the historical development of the syntax and semantics of particles in the two languages. The present section examines the syntactic structures of particle verbs presented in Los et al. (2012:§3.4, §5.4), which are based on

the Dutch and English analyses provided in Booij (2010) and Elenbaas (2007), respectively. Specifically, Booij (2010) adopts a constructional idiom approach to Dutch, while Elenbaas (2007) provides a lexical decompositional analysis of the particle-verb construction in English. Because different analyses are provided for the two languages, I discuss each language in a different subsection. The use of different theoretical approaches for English and Dutch appears to simply reflect the fact that the authors have worked in different frameworks in the previous literature from which the accounts have been adopted; thus, I do not interpret the use of two different accounts in Los et al. (2012) as a strong claim that distinct approaches are necessary.

Although the accounts provided for Dutch and English differ, one of the main claims of the book holds of both languages. The authors argue that particles are partly grammaticalized predicates, lying along a grammaticalization cline with their origins as projecting words and their current status being optionally or non-projecting words ('preverbs' in Dutch). The default option is that particles do not project unless required for syntactic, pragmatic or other reasons, and many particles apparently never project.

2.5.7.1 Dutch: Los et al. (2012) and Booij (2010)

In this section, I focus on the description of Dutch as put forth in Booij (2010) and Los et al. (2012).

Syntactically, Dutch particle verbs are analysed as constructional idioms, or more specifically "partly lexicalized phrases that consist of a fixed optionally projecting word and an open slot for the verb" (p. 84). Particles are able to occur in the following frames, where X corresponds to the particle and can refer to P, Adv, A or N.

(166) a. V' b. V' c. V^0 (Los et al. 2012:68, 85, adapted)

XP V^0 X^0 V^0 X^0 V^0

The structure in (a) involves a projecting particle. It is the structure assigned to Dutch resultatives in general and is claimed to be the structure of particles when they are modified or undergo topicalization, possibilities which are claimed to only be available to a subset of

Dutch particles with transparent meanings. The structure in (b) is the default and is found with particles not modified or topicalized (even if they can be) and which are also not part of the *aan het*-INF construction or verb clusters in Verb Raising constructions. When particles are part of either of these two constructions, they are found in the structure in (c)—referred to as the 'quasi-incorporation' structure—which allows the verb and particle to raise together.

The structure in (c), together with the assumption that the particle and verb raise together when in this configuration, faces the same problem as most complex head approaches: it requires a separate account to explain the positioning of inflection between the verbal and particle heads of the complex verb in Verb Raising constructions (exemplified below). No such account is provided. It should be noted that the authors themselves recognize the ability for the infinitival *te* and participial *ge-* morphemes to intervene between the particle and verb as evidence of their syntactic separability in other constructions. It is not clear how they can consolidate this claim with their claims regarding Verb Raising.

(167) a. omdat hij mij __ probeert op te bellen

b. omdat hij mij op __ probeert te bellen
because he me up tries to call
'because he tries to call me up' Haiden (2005), adapted

External to the particle verb itself, Los et al. (2012) presumably would claim that objects of particle verbs in Dutch are located in the specifier position of VPs, in line with their account for English.

2.5.7.2 English: Los et al. (2012) and Elenbaas (2007)

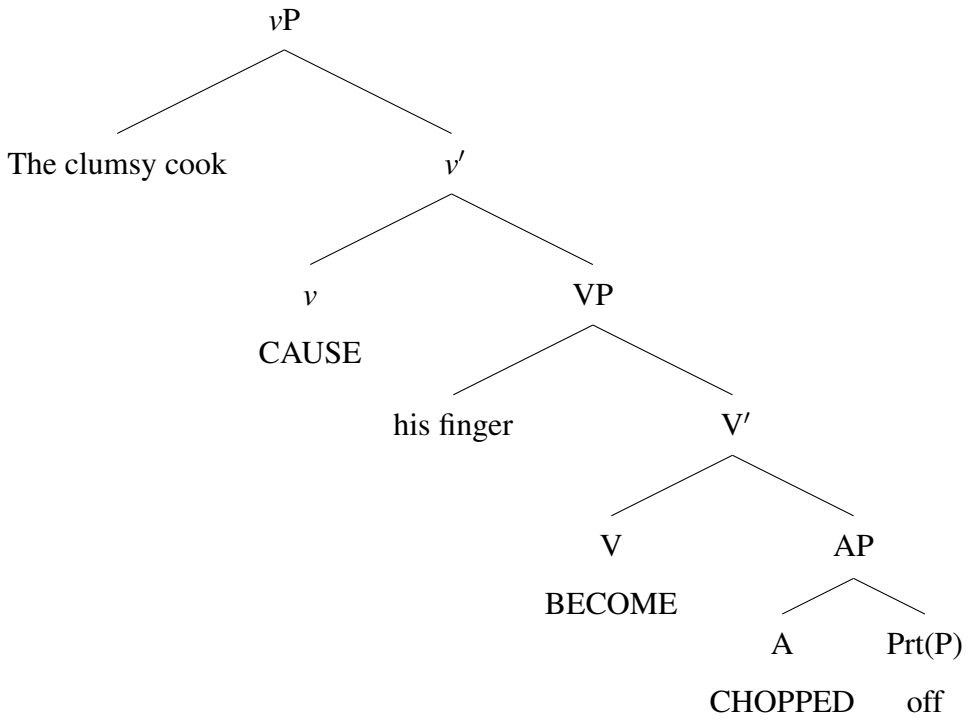
As mentioned in the introduction to this section, the syntactic analysis of (Modern) English particle-verb constructions provided in Los et al. (2012) differs from its analysis of Dutch particle-verb constructions. The analysis of English is based on the analysis provided in Elenbaas (2007).[36]

[36] Elenbaas (2007) extends her analysis of Modern English to older varieties of English, which differ in whether the particle was required to project or not.

As with Dutch, Elenbaas (2007) and Los et al. (2012) claim that English particles are syntactically ambiguous between heads and phrases. By default, particles are (interpreted as) heads unless required to project for other reasons, such as when they are modified or when pragmatic factors like focus favor the discontinuous order.

Elenbaas (2007) and Los et al. (2012) adopt a lexical decomposition analysis for the particle-verb construction in English. This captures within the syntactic structure the semantics of the particle-verb construction, which is treated semantically as a type of resultative with the verb denoting an activity/process and the particle denoting an endstate/endplace and predicating over the object. The syntactic structure they propose, modified from Baker (2003), is provided below for the sentence *the clumsy cook chopped {off} his finger {off}*.

(168)



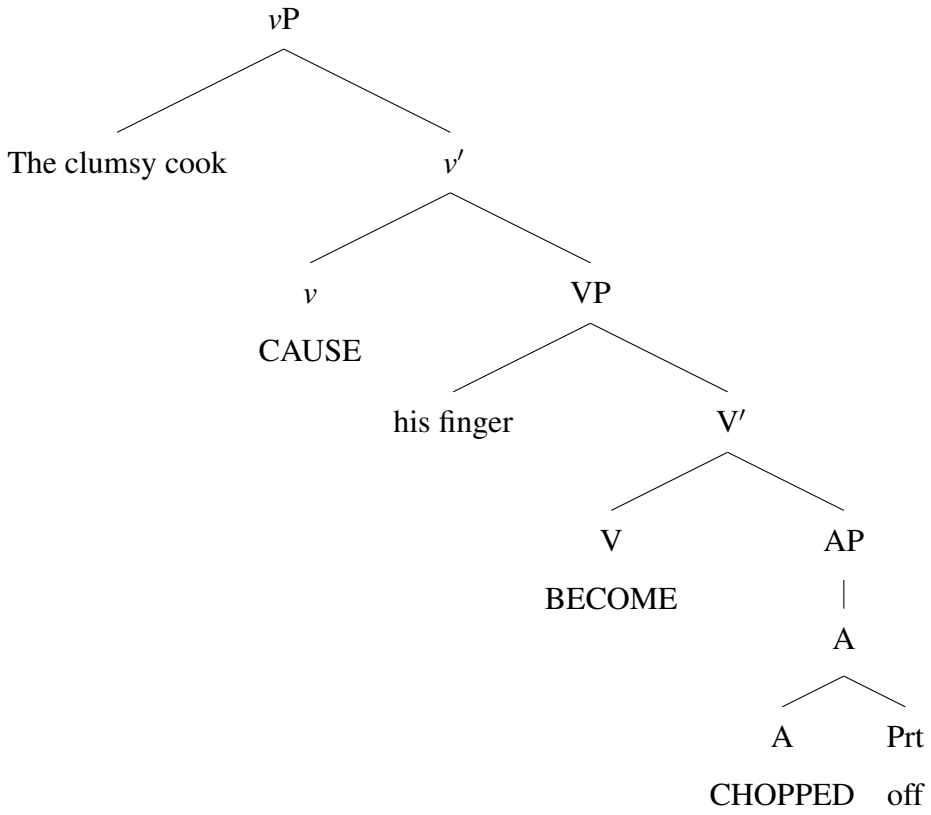
(Elenbaas 2007:87)

In this structure, the abstract adjectival head merges with the verb BECOME and continues on to v_{CAUSE}. The particle, which has projected a phrase, remains *in situ*, deriving the discontinuous order. The particle-verb's object originates in SpecVP, where it remains.

When a particle does not project, it merges with the abstract adjective to form a complex Adj^0, which raises through V to *v*. The particle comes to precede the object as a

result, deriving the continuous order. As with most complex-head approaches, this raises the question of how inflection is able to appear on the verbal root, but no explanation is provided.

(169)



(Elenbaas 2007:91)

An additional problem for this account lies is that the discontinuous order can only be derived when the particle projects, which is dependent on pragmatic factors when the particle is not modified. Specifically, the particle or verb must receive focus to project (or perhaps backgrounding of the nP object could somehow force projection of the particle). I pointed out in §2.3.2, however, that while pragmatic factors like focus may favor a particular order, they do not appear to determine the order. In terms of prosody, a particle in the discontinuous order may have at least two distinct behaviors. If transparent, it may receive contrastive focus in certain contexts (e.g. *I threw it úp, not dówn*); otherwise, the particle seems to 'lean' on the preceding nP much like it 'leans' on the verb in the continuous order. Note that although this is a problem for the motivation for particle projection suggested by the authors , it does not specifically argue against the structures they propose.

A final potential problem with the account is found in its treatment of particle verbs involving unergative verbs, as in the sentence *The thieves ran off*. Los et al. (2012) adopt the analysis proposed in Hale & Keyser (1993) in which unergative verbs involve the incorporation of the head N of the verbal complement into the verb. In these instances, Prt(P) is allowed to merge as the complement of an abstract N in place of the abstract Adj in the structures above. This is problematic because the particle is a semantic predicate (in *the thieves ran off*, placing the matrix subject on a spatial path), but it does not predicate of the first noun (phrase) it encounters.

2.6 Conclusion

As this chapter demonstrates, the particle-verb construction presents a plethora of complications which, despite the wide range of analyses it has received, have yet to be fully explained by any single account. Throughout this chapter, a number of similar problems have repeatedly arisen in various approaches to particle-verb constructions. I wish to highlight those problems here and refer the reader to the places in my own dissertation where my own analysis is presented.

Two of the most frequent problems encountered were the inflection problem and the excorporation problem. The inflection problem refers to the placement of tense/aspect inflection on the verb rather than on the particle and in a position intervening between the two. This is problematic if it is claimed that the verb and particle raise as a single unit, since inflection must be able to and know to percolate down onto the verbal portion of the complex head rather than simply attaching to the left or right of the entire complex. This is a general problem in all Germanic languages, and the problem also arises in the Verb Raising constructions in the OV Germanic languages. Several accounts attempt to overcome the inflection problem by adopting proposing that the verb excorporates from the complex head at some point in the derivation. This leads to other problems, including motivating the excorporation and the question of whether excorporation itself is possible. The present account overcomes these issues by arguing that the particle never undergoes head movement with the verb (§§4.1.1, 4.4 and throughout). The excorporation problem is discussed in 4.1.1.2, where I adopt the

Conflation approach to head movement to avoid the problem altogether. The Verb Raising construction is shown in §4.4.2 to be even more complicated than I have presented it here, and I sketch out an analysis which overcomes the problem.

Another major problem for every account, even where not explicitly highlighted in the subsections above, is the set of complex particle-verb constructions, which includes the pairing of particle verbs with SC and IP FIGURE arguments, prepositional datives, the double-object constructions, and adjectival resultatives. These constructions are problematic because of the range of data that must be accounted for, the variability in judgments that needs to be accounted for, as well as the inconsistent presentation of judgments found across the literature. I provide an account of these constructions in §5. This is followed by extending the analysis developed in the complex particle-verb construction section to the subextraction data in §5.6, which I noted is generally problematic for complex-head approaches.

Small-clause accounts were criticized for generally ignoring the ability of particles to occur in various word-formation processes. I examine some word-formation processes in which particle verb take part in §6.2. Additional word-like properties of particle verbs which pose problems for small-clause accounts are discussed in §4.3.1 and throughout. In contrast, the complex-head approaches were shown to have difficulty accounting for the phrasal-like behavior of particles in some constructions. This will be addressed in §4.5 and throughout.

Chapter 3

SEMANTICS OF PARTICLES

Much of the literature that mentions the particle-verb construction misunderstands its semantic characteristics. First and foremost, while spatial uses of particles and a few so-called 'aspectual' uses are acknowledged as largely regular, others particle verbs are often depicted as essentially random combinations of verbs and particles with idiomatic meanings. This latter set, it is sometimes presumed, cannot be decomposed in a way allowing the verb and particle to individually contribute to the meaning of the combination. In this chapter, I argue against this conception of particle verbs. I claim that apparent 'idiomatic' verb-particle combinations can be treated as compositional, demonstrating that the particles in these combinations exhibit the same functions in combination with other verbs. The combinations are idiomatic only insofar as they involve 'special' meanings of particles and/or verbs—meanings which do not arise out of context. If 'idiom' is, however, defined as the combination of two or more words with a denotation which cannot be derived from the combination of the meanings of its parts (i.e. if idioms are defined as noncompositional), then particle verbs are not idioms (see also Blom 2005:82ff and Los et al. 2012:80ff for discussion of the conventionalized yet compositional nature of particle verbs).

The second misunderstanding comes from the frequent claim that some particles are 'aspectual' markers. I argue that these so-called 'aspectual' particles do not simply instantiate some independent aspect feature; rather, I argue that they denote (metaphorical) spatial relations just like other particles, and any aspectual effect they have on the construction as a whole follows from the nature of the spatial relations they denote (e.g. bounded or unbounded PATH). Although I pursue the strong hypothesis that all particles denote spatial relations, I do not claim that they all denote physical, spatial relations; rather, they may denote physical or temporal, concrete or abstract relations.

In addition to denoting (metaphorical) spatial relations, I claim that all particles are predicated of an argument—a FIGURE argument—which is almost always the lowest overt nP that c-commands the particle (occasionally, the FIGURE is a covert argument or a non-nP argument). When combined with an understanding of the various 'special' meanings of particles, this will enable us to explain the occasional differences between the valency and selectional restrictions of simplex verbs with those of verb-particle combinations containing said verbs. It will also help to explain why we do not see syntactic differences between the so-called 'aspectual' and 'idiomatic' particles, because they are not considered distinct (see, however, §4.5, where I show that the distribution of nontransparent particles is a subset of the distribution of transparent particles, which I claim is due to a (lexical) restriction on the syntactic configurations in which their 'special' meanings may arise).

As can be deduced from the paragraphs above, the primary focus of the present chapter is the lexical semantics of particles, and not the compositional semantics of particle-verb constructions. A treatment of the compositional semantics of particle-verb constructions will not be explicitly undertaken in this dissertation; however, my general assumptions about the compositional semantics of particle-verb constructions can be found in the discussion of 'aspectual' particles in §3.2.2.3 below and in §4.2, where I compare the particle-verb construction with the resultative construction. I must also point out that I focus almost exclusively on English particles in this chapter. Some OV Germanic languages have been noted to have a wider variety of particles, and I have not examined whether the claims made herein can be extended to those additional types or not.

The organization of this chapter is as follows. In §3.1, I provide a brief overview of the ways in which the combination of a particle with a verb may have a different argument structure and different selectional restrictions from those of the simplex verb alone. §3.2 then provides the means to understand how we can make sense of these effects of the particle without resorting to the view that many particles are 'aspectual' or verb-particle combinations 'idiomatic'. I demonstrate that particles are predicates with regular spatial meanings, and I argue that by treating these as secondary predicates similar to resultative secondary predicates, the apparent effects on valency and selectional restrictions on verbs

receive a principled explanation.

3.1 Overview: Selectional Restrictions and Aspectual Modification

In this section, I provide an overview of the differences in valency and selectional restrictions seen in particle verbs when compared to the base verb alone. I also briefly review some claims that certain particles function as aspectual markers. Both of the claims are argued against in the subsequent section, where I provide arguments, primarily semantic, in favor of treating particles as a type of small-clause predicate.

3.1.1 Changes in Valence and Other Selectional Restrictions

It is well-known that when a verb and particle are used together in a particle-verb construction, the valence of the construction may differ from the valence of the base verb when used alone. The primary purpose of this subsection is to familiarize the reader with the types of valency-changes that can be effected through the addition of a particle. Before doing so, however, I wish to discuss two opposing accounts for these changes to highlight the importance of this data. Some authors (e.g. Toivonen 2003:153f) attempt to explain the changes by claiming that verb+particle combinations may be lexically endowed with their own valency and other selectional restrictions which are apparently not derivable from outside factors (e.g. we cannot derive these differences by appealing to properties of the construction they appear in). This is because the 'same' particle will often alter the selectional restrictions of verbs in different ways; however, this claim appears to hold true only if we lump all of the different, regular functions of a single phonological string into something we call a singular particle (e.g. if we do not distinguish *off* in *turn off the TV* from *off* in *start off the match*). If, on the other hand, we accept that many 'particles' are actually sets of homophonous particles, each with a separate (though usually related) function/meaning, then we can examine the individual uses of these 'particles' to see if their effect on valency and other selectional restrictions is predictable or random. In the end, it turns out that combining these various uses of particles with verbs typically has a systematic and predictable semantic effect (see §3.2.1 for one such examination). This result is relatively unsurprising if particle-verb constructions are

treated on par with resultatives and similar expressions, as the present dissertation argues, as we know that resultatives may include unselected arguments (e.g. **sing oneself* vs. *sing oneself hoarse*). In such an analysis, the particle is ultimately responsible for selecting the argument, similar to the secondary predicate of a resultative construction.

Let us turn now to the data. First, there are many instances where the addition of the particle has no apparent effect on the argument structure normally associated with the verb, such as in the examples below. In the case of (172b), *cook* is usually a monotransitive verb, but like other verbs of creation, it may occur in the double-object frame and optionally allows a particle.[1]

(170) a. John ran (out).

b. John spoke (up).

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[1] In general, ditransitive verbs of transmission (e.g. give, send) or verbs of creation which allow a ditransitive frame are compatible with particles. Common particle meanings found in ditransitive constructions include *out* (meaning 'distribute' or 'from a central source outward'), *off* and *away* ('away from a source'), *over*, or the deictic particles *up* or *down*. With verbs of creation, *up* is most commonly found, though other particles are sometimes possible as well.

(i) a. We sent the stockholders out a schedule.
b. We sent the publisher off a copy of our manuscript.
c. Can you send the kids over some cookies when you have the time.
d. I'll send the boss up a report in the morning.
e. I'll send the foreman down the new instructions.

(ii) a. John cooked his kids up some dinner.
b. Can you print me up/off/out a copy?

Contrasting with the double-object constructions above, which include a possession component in the meaning, double-object constructions entailing a lack of possession do not appear to occur with particles.

(iii) a. John denied the prisoner (*out/*up/*off/*etc.) his lunch.
b. The doctor refused him (*out/*up/*off/*etc.) his medication.

This difference will follow quite naturally from the semantic account of particles as predicates below. Provided the particle predicates of the THEME argument of a double-object construction, this is semantically feasible with double-object constructions denoting change of possession (involving (abstract) motion of the argument) but not those denoting lack/denial of possession. For example, when one *sends someone out a schedule*, the schedule goes *out* as a result of the sending event. In contrast, one cannot **denies a prison out/up/off his lunch* because there is no plausible interpretation in which the prisoner goes *out/up/off* as a result of the denial.

(171) a. John threw the ball (up).

b. John called his mother (up).

(172) a. John sent the stockholders (out) a schedule.

b. John cooked his kids (up) some dinner.

A particle may be used to remove argument positions from the argument structure. Thus, an otherwise monotransitive verb may become intransitive with a particle, and a ditransitive verb appears to become monotransitive, as shown in (173)-(174). Note that only the prepositional dative variant of a ditransitive verb arguably alternates with a 'monotransitive' particle verb; the double-object construction clearly may not become monotransitive, disposing of the THEME argument while keeping the POSSESSOR argument. This is demonstrated in (175). In (176), the ditransitive verb *give* becomes intransitive when the particle *up* is added. I am not aware of other instances where a ditransitive verb may become intransitive with the addition of a particle, except for combinations with the use of *away* discussed in §3.2.2.3.5.

(173) a. John shut *(his mouth).

b. John shut (*his mouth) up.

(174) a. Did you give *(the brochures) *(to the clients)?

b. Did you give the brochures out (to the clients)?

(175) a. Did you give *(the clients) *(the brochures)?

b. *Did you give the clients out? (grammatical in unlikely interpretation where *the clients* is interpreted as the THEME)

c. cf. Did you give the clients out the brochures?

(176) Did you give up?

It is often noted that particles sometimes appear to fill a directional-PP argument slot. Assuming this to be the correct analysis, the transitivity is actually unaffected. This would

also mean that adding a particle to a prepositional dative construction, as in (174b), does not actually alter its valency.

(177) a. John darted *(out of the house). / John darted out.

b. John put the ball *(in the box). / John put the ball away.

Particles may alternatively add an argument position to the argument structure. As shown in (178) and (179), particles occasionally change intransitive verbs into monotransitive verbs and monotransitives into ditransitives (specifically, double-object constructions). This latter case is rarer, but it occurs with at least some verbs of removal when combined with the particle *off*, provided the removing activity is done in a controlled fashion. This last point is shown in the additional examples in (180).

(178) a. John waited (*the storm).

b. John waited out *(the storm).

(179) a. John broke (*me) a piece of chocolate.

b. John broke me off a piece of chocolate.

(180) a. John busted me off a chunk of the meteorite to take home.

b. John ripped/tore me off a piece of duct tape since my hands were full.

c. John snapped me off a piece of candy.

d. * John shattered/smashed me off a piece of the window.

Finally, certain verbs, such as *drink*, have an optional argument. The addition of certain particles may force the object to be overt.

(181) a. I need to drink (water).

b. You need to drink *(this medicine) down, or you won't get better.

(182) a. We fought (each other).

b. We fought *(each other) off.

Even when verb+particle combinations exhibit the same valence as the simple verbs on which they are built, there may be other selectional differences. Consider, for example, that *drown* takes a (causee) [+animate] argument, whereas the argument of *drown out* must be related to sound.

(183) a. John drowned the witch / *the sound.

b. John drowned out *the witch / the sound. (grammatical if referring to the sound of the witch)

In the following example, the particle appears to restrict the set of arguments to a subset of those taken by a particle-less verb.

(184) a. start a car / a project / a company / a website / a film

b. start up a car / a project / a company / a website / a film

(185) a. start an essay / a book / one's dinner

b. *start up an essay / a book / one's dinner

In this case, a first approximation of the restriction added by *up* is that the object must be something capable of continuing without the continued intervention of the original initiator. Thus, while a car, project, company, website or film can certainly continue without the initiator's intervention, this is generally not possible for an essay, book or dinner. It is sometimes possible to coerce these into such readings, in which case *up* becomes available. For example, a group of people could decide to write an essay together online, and after drawing straws it is determined that it will be John who will start up the essay. Likewise, one can *start up the dinner* in the sense of beginning to cook it, or by starting a (large) dinner event. But note that even though we can coerce these events such that *up* becomes acceptable, the object itself is construed differently than it would be with the corresponding simple verb.

In sum, when verbs combine with particle, the combination may take more or fewer arguments than the base verb alone, optional arguments may become required, and particles may sometimes replace PP arguments. Further, the semantic properties of the arguments normally selected by a verb may differ from those of arguments selected by particle verb

combinations built upon the same verb. Although some have claimed that these properties are idiosyncratic properties of individual particle verbs, the alternative view that I adopt and argue for below is that the particle is a secondary predicate responsible for argument selection. As with resultatives, this selected argument may or may not otherwise be the same argument normally selected by the simplex verb alone.

3.1.2 Changes in Aspect

Authors have long claimed that some particles function as aspectual or 'Aktionsart' markers. Kennedy (1920:27) claims that particles in the following constructions have a 'perfective' or 'intensifying' function: *batter up*, *bleach out*, *break up*, *break down*, *clean out*, *cool off*, *dry up*, *dust up*, *feather out*, *hurry up*, *lengthen out*, *match up*, *miss out*, *quiet down*, *rot out*, etc. Live (1965:436f) describes the function *up* in expressions like *dry up*, *eat up*, *use up* and *break up* as a marker of 'intensity or totality', while calling the function of *away* in expressions like *hammer away (at)* or *eat away (at)* 'iterative or durative' (this fact is missed by some scholars, who claim particles are only telic). Live also notes "Obviously these quasi-aspectual features not consistently matched with particular particles, nor do we find clear-cut contrast among them. Almost all the particles represent some variant of the intensive or the terminative—or both." Bolinger (1971:Ch. 8) says that "It simply appears that some of the particles—most especially *up*—have in some cases traded their full resultative meanings for the bare meaning of 'result achieved'." Fraser (1976) also implies that some particles affect aspect; for example, he suggests that the difference between *the music faded* and *the music faded out* is that *out* adds a sense of completion. He claims that *out* modifies the meaning of the verb here. Brinton (1985) provides many additional references to papers calling certain particles aspectual, himself arguing that the so-called 'perfective' particles in English are better analyzed as markers of 'telic' Aktionsart. The idea that some particles are aspectual or Aktionsart markers has remained prevalent in much of the more recent literature as well, as one can easily verify by searching literature discussing particle verbs for words like 'completive', 'perfective', or 'telic'. For example, Toivonen (2003:§5.2) describes a

class of particles in Swedish and English as morphemes whose function is to alter the aspectual features of verb (phrases) by altering the values of the features [±telic], [±dynamic] and [±durative]. Quite recently, Los et al. (2012:76) call the atelic, intransitive particle verbs referred to as 'atransitive' verbs by McIntyre (2004) Aktionsart particles.

An alternative view, which I adopt here, is that particles are interpreted as spatial relations, often metaphorical. For example, *out* in *the music faded out* is interpreted as a metaphorical PATH or PLACE OUT (e.g. out of sight), such that the music goes/is 'out' of some metaphorical space, thereby adding the sense of completion. Semantically, then, *out* is not a verbal modifier, but rather a predicate over an nP argument. Because PATHS can be bounded or unbounded, and PLACES are inherently bounded, the telic or atelic nature of particular particle verbs can be derived from the type of PATH or PLACE denoted by its particle. Not only does this neatly explain the apparent aspectual properties, but it also provides an account for the seemingly inconsistent matching up of particles and 'quasi-aspectual features' claimed in the quote from Live above. This is because the apparent aspectual quality falls out from the denotation of the particle, rather than aspect itself being the denotation of the particle. The choice of particle, then, depends on how the (metaphorical) motion/placement of the FIGURE argument is to be construed. Spatial denotations of commonly labeled 'aspectual' particles will be provided in §3.2.2.3. For references to other authors adopting a similar viewpoint, and for arguments against this viewpoint, see references in Cappelle (2005:356ff) (see also fn. 28 below).

3.2 Lexical Semantics of Particles

In this section, I argue that particles always contribute meaning independently of the verb in particle verb constructions. In this regard, I claim that so-called 'idiomatic' particle verbs are compositional. The 'idiomatic' meaning arises when the particle and/or verb is used with a nontransparent meaning not available outside of a specific set of contexts.[2]

[2] As an example of a nontransparent particle with a regular meaning, consider the expressions *John searched out a solution* or *I figured out that he killed the butler with a candlestick*. Here, the senses of the verbs are no different from their uses without a particle (e.g. *John search for a solution*, *I figure he killed the butler with the candlestick*), but the meaning of *out* is not freely available in other contexts; if one searches out a solution, one

It is argued that some particles include a concrete or abstract, covert GROUND argument, and all particles contribute a concrete or abstract spatial meaning to the constructions in which they appear. I further argue that there are no particles which are merely aspectual markers, which is not to say that they may not have an effect on the aspect of the event. I claim that any aspectual effects of a particle are derived from its primary meaning, which is predicated of an nP or clausal (CP/IP/SC) argument (occasionally covert, as discussed in §3.2.4). Thus, the most well-known 'aspectual' particle *up* in constructions like *drink the beer up* is not a function mapping events to completed events; rather, *up* is predicated of the noun phrase *the beer* with a semantics denoting something like 'nonexistent' (cf. *time is up*, where *up* is clearly predicated of *time*). The 'completive' flavor of the verb phrase is an indirect consequence of this meaning.

I am in no way the first author to make such claims (though I will adopt a more extreme view than most). Cappelle (2005), for example, demonstrates the regularity of a number of particle uses in English, and Blom (2005) does likewise for Dutch. Zeller (2001) claims that homophonous particles can be organized into various classes of meanings, with selection among those meanings dependent on the context. Lindner (1983) takes the idea that non-spatial particles are spatial metaphors to its limits, providing a detailed study of the many regular functions of the particles *out* and *up*. And much of McIntyre's work (e.g. McIntyre 2001a,b, 2002, 2004) emphasizes the compositional nature of particle verbs, further arguing that certain 'aspectual' particles denote metaphorical PATHS.

Although I claim that particles have conventionalized, regular meanings, I do not claim that all uses are productive within a semantically defined class; some particle uses are not freely available to form new combinations, though they may have been productive in the

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engages in searching, but even if one succeeds it makes little sense to say *the solution is out*. At the same time, this nontransparent use of *out* is present in many other constructions, including the following.

(186) find (something) out, seek (someone) out, point (someone) out, pick out (someone from a crowd), stand out (in one's mind), bring out (the best in someone), tease out (an answer)

According to Lindner (1983), *out* indicates a path from hiddenness to accessibility in these (and other) examples. Taking this to be essentially correct, it is clear that this nontransparent use of *out* has a uniform semantics in all these combinations, and thus the combinations it forms are compositional.

past. Zeller (2001) argues that such combinations are characterized by a *semiproductive rule*, as defined in Jackendoff (1997a). A semiproductive rule involves the presence of a rule with predictive capability whose output is nonetheless constrained by the lexicon; in other words, the output of the rule must be listed in the lexicon. For example, on the assumption that one use of *up* is to indicate a 'subtractive process' towards nonexistence (cf. Lindner 1983:151f) in phrases like *eat up the chips*, *drink up the beer*, *use up resources* and *take up time*, the fact that we cannot form new combinations like **spend up one's money* (cf. *use up one's money*) shows that this use of *up* is semi-productive in English.

I must forewarn the reader that one must be open to the idea that metaphors may play a significant role in constructing meaning if one is to accept any of the arguments below. While some of the explanations below may seem like fanciful stories—and unfortunately do not seem easily falsifiable—keep in mind that languages are rife with metaphors; just a few examples of metaphorical paths/places, which are the main type of metaphor invoked by particles, include *shoot someone to death*, *get someone out of one's mind*, *join in a game*, *run into trouble*, *enter into a trance*, *be on/off topic*, *be out of it*, *be at ease*, and countless others. Particles tend to be derived from spatial prepositions, it seems, precisely because it is so easy to metaphorically apply their core, spatial senses to other areas of cognition. The simplest extension involves repurposing the spatial sense to apply to temporal spans, such as when one moves *forward* or *backward* in time, but this is only one of many possible extensions. In many cases, I suggest that much of the metaphorical meaning of a particle owes to the character of an abstract GROUND argument. For example, *out* in *freak out* may have an abstract GROUND meaning 'mind', just as in *be out of one's mind*.[3] I believe that by accepting a certain degree of abstraction in the semantics, we are able to come to a better understanding of verb-particle combinations in general and of the other semantic and syntactic effects particles have.

[3] The idea that particles contain an abstract GROUND argument is not novel. For example, Svenonius (1994, 1996a) and Ramchand & Svenonius (2002) argue that particles contain an incorporated null N element. Although little is said about the exact nature of this null N element, it could correspond to various types of GROUNDS in the present analysis.

3.2.1 Regularity of Particle Meaning

In order to support the present claims that particles are predicates and that particles contribute their own meaning to verb+particle combinations, the present subsection examines the particle (or set of homophonous particles) *off* in detail, demonstrating what its denotations might look like. I am certainly not the first to examine individual particles in detail in this manner; the most detailed study of the regularity of particle meanings/functions that I am aware of is in Lindner (1983). Lindner examines the two most prolific particles in English—*out* and *up*—delimiting their various functions (which are often extensions of the basic spatial denotation of the archetypical particle from which they derive) in great detail. She demonstrates a considerable degree of regularity in the various uses of these particles, even though she does not explicitly provide formal lexical denotations of the various meanings. It is because Lindner (1983) has already detailed possible sets of denotations for *out* and *up* that I consider the particle *off*, which is itself fairly prolific and occurs with a number of meanings.

In its 'literal' meaning, *off* is used in contexts where an object departs or is removed from a supporting surface or object. I refer to this use as $off_{support}$.

(187) transitive: blow, break, brush, chop, clean, clear, cut, dust, lift, peel, pop, pry, rip, saw, take, tear, wipe

  a. Clean the dirt off (the table / wall / ceiling).

  b. Take your shirt off so I can wash it.

(188) intransitive: climb, fall, get, jump

  a. Did the cat get off (the roof) yet?

  b. Has the cat managed to get/climb off (the roof) yet?

It is clear that $off_{support}$ is predicated of the lowest nP in the constructions above, as we can demonstrate by placing this nP and the particle in a construction with the copula *be*: *the dirt/shirt/cat is off*.

A possible lexical representation of the particle use of *off*$_{support}$ is provided below, using both the LCS format of Jackendoff (1990) and lambda notation. I use LCS representations to ease comparison with the representations of McIntyre (2001a, 2004) which will be presented in §3.2.2.3 below, and I use lambda notation to add greater clarity to how the computation is carried out. In the denotations below, I have chosen to indicate that *off*$_{support}$ is denoted relative to *on*, though we could replace ON with the denotation of *on* as well (something like SUPPORT). The final conjunct in the denotations below represents the presupposition that the object in question was previously *on* some surface (*t* is a time index), which generally seems to be present with *off*$_{support}$. The variable *y*, representing the object from whose surface the FIGURE argument leaves, remains unbounded as shown in the denotation in (189b). The *surface* argument represents the type of GROUND argument required by *off*$_{support}$. Generally, the GROUND is the syntactic complement of a preposition, but because particles lack an overt GROUND (excluding occasional instances of 'ground promotion', which will be discussed in §3.2.4), one must be available pragmatically. It will be shown below that it is often this choice of GROUND which gives rise to different 'flavors' of the particle.

(189) $[\![\textit{off}_{support}]\!]$ =

a. $[_{Place}\ \text{NOT}(\text{ON}(\text{surface}_y))^t\ \&\ \text{ON}(\text{surface}_y)^{t-n}\ ]$

b. $\lambda x \exists t_1 \exists t_2.\ t_1 < t_2\ \&\ \text{NOT}(\text{ON}(\text{surface}(y))(x)(t_2))\ \&\ \text{ON}(\text{surface}(y))(x)(t_1)$

When *off*$_{support}$ is embedded under a (light) verb of motion, the PLACE is construed as a PATH from ON to OFF. Because this presupposition is present even when *off*$_{support}$ is used with a copula, we might claim that *off*$_{support}$ always has *Path* in its denotation. I will make this assumption in the case of *off*$_{support}$ (and other variants of *off*), though this is not necessarily the case for other particles or prepositions. I thus replace the representations above with those below.

(190) $[\![off_{\,support}]\!]$ = (revised)

a. $[_{Path}$ FROM($[_{Place}$ ON(surface$_y$)$^{t-n}$]) TO($[_{Place}$ NOT(ON(surface$_y$))^t])]

b. λx$\exists$t$_1\exists$t$_2$. t$_1$ < t$_2$ & FROM(ON(surface(y))(x)(t$_1$))(x)

& TO(NOT(ON(surface(y))(x)(t$_2$)))(x)

In the examples discussed until now, the FIGURE is separated from a GROUND which previously provided it support. There are also instances involving the physical separation of a FIGURE from a contextually-determined GROUND which has not provided it support. These include several verbs of fighting/defending as in (191); many verbs of motion as in (192) (except for those implying departure, shown in (193), presumably because *off* would simply be redundant); and others, such as those in (194). I refer to this use as *off* $_{away}$.

(191) beat, call, chase, drive, fend, fight, hold, keep, scare, stave, warn, ward

a. The townspeople chased off the attackers.

b. The rancher scared off the coyotes.

(192) bounce, break, drift, drive, float, fly, glide, go, roll, slide, run, walk, wander

a. The boat slowly drifted off.

b. John drove off.

(193) * escape, exit, flee, leave[4]

a. The convicts fled (*off).

b. The prisoners escaped (*off).

[4] *Leave off* exists as a particle verb, but it does not involve the intransitive departure reading of 'leave'. Rather, it involves the transitive use of *leave*, meaning something like 'cause to remain off', or 'exclude'.

(194) back, fuck, head, make, piss, screw[5]

a. Tell John to piss off.

b. It's getting late. I'd better head off (for home).

Although *off* $_{support}$ and *off* $_{away}$ are similar in meaning, they are not identical; for example, while *off* $_{support}$ contrasts with *on*, *off* $_{away}$ does not. To demonstrate this, consider the expressions *take off one's shirt* and *chase off the attackers*. In the former, *the shirt* was previously *on* the GROUND in question, whereas in *chase off the attackers*, *the attackers* are not construed as having been *on* the GROUND in question (rather, we might say they were *at* said GROUND in this case).

Also unlike *off* $_{support}$, we cannot generally describe the intended result of combinations with *off* $_{away}$ in a copula construction. Thus, the result of *John chased the thief off* cannot be stated as **the thief is off*. Despite this, there are a few expressions which seem to allow *off* $_{away}$ to occur with a copula: *He's off in some other country* and *He's (still) quite a ways off*. This demonstrates that *off* $_{away}$ is a semantic predicate which takes its own argument. A possible denotation for *off* $_{away}$ is provided below.

(195) $[\![$*off* $_{away.from}]\!]$ =

a. $[_{Path}$ AWAY-FROM($[_{Place}$ AT(y) $])]$

b. λx. AWAY-FROM(AT(y))(x)

I include AT(y) in the denotation rather than simply AWAY-FROM(y) because *off* $_{away}$ generally includes the presupposition that the FIGURE argument was initially located at the location they move away from.[6]

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[5] The use of *fuck/piss/screw off* indicates an aggressive attitude on the part of the speaker, but they nonetheless generally mean 'leave'. The particle verb *flip someone off* seems to involve the same use of *off* as in *fuck off* (the meaning of the gesture denoted by the expression *flip off* is 'fuck you' or 'fuck off'), though the FIGURE argument need not go *away* as a result of being flipped *off*. If *flip someone off* is a type of resultative, this is unusual. Nonetheless, the act of flipping someone off seems to imply that the speaker wants the recipient to (metaphorically) go away, or *fuck off*.

[6] In this manner, *off* $_{away}$ differs from *away*, as the latter includes no presupposition about the original position of its FIGURE argument. Thus, while the GROUND argument of *off* $_{away}$ is the beginning location of the FIGURE

Now that we have determined *off*$_{away}$ to be a subtype of *off*, let us consider some combinations involving *off*$_{away}$ which might otherwise appear to be idiomatic. The combinations *fuck/piss/screw off* are likely considered idiomatic by some, but the meaning is quite compositional. *Fuck*, *piss* and *screw* all denote manners of behavior or manners of movement distinct from their archetypical meanings. In these 'manner' readings, these verbs may occur not only with *off*$_{away}$, but also with *around/about*. For example, in *fuck/piss/screw around/about*, the verbs have the same meaning as when they occur with *off*$_{away}$. As for *off*$_{away}$ in these combinations, it is used in its non-metaphorical, spatial sense. Another combination which might appear to be noncompositional yet actually seems to involve a non-metaphorical use of *off*$_{away}$ is *give off*, as in *give off a stench* or *give off a loud 'bang'*. Here, the GROUND is co-identified (pragmatically) with the subject of *give* (which indicates the SOURCE), while the FIGURE moves away from that point. *Give* itself might have a special meaning here—something like 'emit'—or this sense may simply follow from a semantically impoverished denotation of *give* which lacks a GOAL argument, meaning something like 'X leaves source Y'.[7]

By replacing y in the denotation in (195a) with a non-spatial entity, we are able to derive different 'flavors' of *off*$_{away}$ involving more abstract types of separation. In one sense, the FIGURE argument separates from the GROUND mentally, with the implication that the FIGURE ceases to concern the GROUND. In these instances, the GROUND presumably refers to the psyche of the subject. This is commonly found in constructions like those below involving a FIGURE with a negative effect on the subject.

(196) brush, laugh, pay s.o.(?), put, shake, shrug, swear, write

a. The politician shrugged the incident off.

b. His aggressive behavior really puts me off.

---

of *off*$_{away}$, the GROUND of *away* is merely a reference point from which the FIGURE is moving away from. For example, if a ship captain receives a report about pirates preparing to set sail from a nearby port, the ship will likely *sail away* from the port without ever stopping there. In contrast, the ship cannot be said to have *sailed off* from that port unless it first stopped there.

[7] Verbs of emission do not occur with *off*$_{away}$, presumably because *off*$_{away}$ would be redundant. *Give*, on the other hand, is not inherently a verb of emission, so it is compatible with *off*.

A slightly different sense of psychological separation is also found in several constructions where the FIGURE argument departs from a normal psychological state. Depending on the meaning of the verb, the FIGURE enters one of several different psychological states. In one subset of these cases, *off* $_{away}$ indicates a PATH leading away from consciousness, forming combinations indicating events of falling asleep or daydreaming.[8]

(197) doze, drift, drop, nod

(198) a. John dozed off during class.

b. John drifted off into La-La Land.

A second subset involves verbs of sexual gratification (especially for males), where the FIGURE temporarily enters a state of ecstacy. In most cases (except *get*), the verb may occur alone in a sexual sense, and it may occur in intransitive or transitive constructions.

(199) beat, get, jack, jerk, wank, whack; (less common, but attested) finger, lick

a. John beat off.

b. Mary beat John off.

In a third subset, the FIGURE argument enters a state of anger or agitation. Note that the adjectival forms of several verbs below (*pissed*, *teed* and *ticked*) indicate that their argument is angry or upset without the aid of *off*. This suggests that *off* may simply be emphasizing the departure from a normal mental state.

(200) piss, set, tee, tick

(201) go off on s.b.

a. John pissed/set/teed/ticked Bill off.

b. Bill went off on John.

[8] Whereas *off* appears to denote a gradual movement towards unconsciousness, *out* in *knock out* or *pass out* appears to denote a sudden transition into unconsciousness. One possible explanation is that *off* in this case denotes a PATH towards unconsciousness while *out* implies arrival at the PATH's endpoint.

Off may refer to the separation from one's obligation to work. This use is interesting, in that *off* may predicate of the person who normally works, or of the time which is not worked. It may be that these are two different uses of *off* (when predicated of time, the discontinuous order is disallowed), but I shall leave this question open.

(202) call

a. John called off.

b. % The boss called John off (work).

c. John is off (work/the clock) today.

(203) lay (person)

(204) have, take (time)

a. John laid {off} Bill {off}.

b. John took/has/got {*off} the day {off}.

There are a few intransitive constructions with *off* where *off* appears to add a lack of seriousness and inactivity. This use of *off* is potentially related to the 'non-obligation' constructions above, but it is not entirely clear. Although some authors might call constructions like those below noncompositional idioms, it should be noted that the verbs *goof* and *screw* both have same meaning as below when paired with the particle *around*, so the particle must be contributing independent meaning.

(205) goof, screw, slack

a. John goofed off during class.

b. John slacked off all day.

Another use of off_{away} involves the transmission of a message or information from its source, usually verbally. In the case of *show*, the transmission is visual. The intransitive examples *mouth* and *yack* seem to take covert FIGURE arguments. This is not unusual for particle verbs with verbs of manners of communication (e.g. *cry/sing/shout out (sthg)*),

though in the specific cases of obligatorily intransitive 'mouth' (metaphorically referring to words) and 'yack', these words themselves may correspond to FIGURE arguments.[9]

(206) list, print, rattle, read, spout

(207) show

(208) mouth, yack

a. John rattled off a list of facts

b. John showed off his guitar skills.

c. John mouthed off at the teacher.

Off $_{away}$ may also be used to indicate the metaphorical departure of an entity from an owner, implying loss of ownership. For example, if John *sells off* his business, it is only the ownership that is transferred—the physical business likely remains unmoved.

(209) auction, raffle, sell

a. John auctioned off the paintings.

b. The business raffled off prizes.

Although somewhat more tenuous, the following appear to involve metaphorical departure from an 'unaccounted for' state to an 'accounted for' state, or alternatively departure from a type of 'to do' list.

(210) check, count, number

Another type of GROUND that can occur with *off* $_{away}$ is temporal. This use is found in combinations with 'put' and 'hold'. Based on data attested online, it appears that some dialects also allow *place* and *set* to occur with *off* $_{away.temporal}$.

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[9] While one might pursue an analysis of this latter type of construction claiming that they involve incorporation of the FIGURE argument into the verb (along the lines of Hale & Keyser's 1993 analysis of unergatives), this is unlikely to work for transitive particle verbs like *dust the table off*, where the GROUND needs to raise around the base position of the FIGURE. Furthermore, *off* can take an overt FIGURE even when paired with *dust*: *dust the crumbs off the table*. Instead, it is more appropriate to analyze such constructions as direct merger of the apparent FIGURE as a modifier of a null verb.

(211) hold, put

a. John held off on answering the question.

b. John put off his homework so he could watch the game.

In many instances, *off* seems to have a decremental meaning. This use differs from a the decremental use of *down* in that while *down* merely indicates a decrease, *off* denotes a PATH towards non-existence (or away from existence), often with the implication that the endpoint have been reached. This use is likely to be considered 'aspectual' by some, as it seems to add a sense of 'completion', but this sense is simply derived from its metaphorical spatial meaning.[10]

(212) a. I worked off my debt. *Then I worked it off some more.

b. I worked down my debt. Then I worked it down some more.

(213) a. sleep off a hangover

b. walk off the pain

c. pay/work off one's debt[11]

d. finish off one's work

e. burn off some calories

f. John's voice trailed off.

g. The effects of the drugs slowly wore off.

At first glance, the expressions *die off* and *kill off* appear to be special instances of $off_{away.existence}$. *Die off* is only available when the lower argument is used to refer to a type or group of individual(s) rather than any specific individuals. For instance, while we cannot say **this bird died off* when referring to an individual bird, we can say *this (species of) bird died off* when referring to a type. In contrast, the verbs in the examples above do not seem

[10] The decremental reading does not seem to arise with *sleep off a hangover*, but I take this to reflect a property of hangovers rather than indicating a distinct use of *off*. Hangovers do not seem to gradually decrease in intensity in a linear fashion, whereas other types of pain or debt can be gradually lowered.

[11] In an expression like *John paid off his car*, I assume *his car* refers to the debt associated with the car.

to require subjects denoting more than one entity. This difference, however, seems to be due to the nature of the verb itself. Since *die* is non-scalar, it would make little sense to use the scalar particle *off*$_{away.existence}$ with it when attributing the property to a single individual.[12] In contrast, when attributing the property to multiple individuals viewed as a whole, we can view the gradual decrease in population as each individual dies, such that the population as a whole is moving along a PATH towards nonexistence. With regard to *kill off*, my impression is it occurs in two 'flavors' depending on the nature of the FIGURE argument. One sense refers to extinction, just as in *die off*, such as in *Humans killed off the dodo bird*. In contrast, *kill off* can sometimes take a singular argument, like the semantically-similar particle verb *knock off*, as when a TV series *kills off* a character. Likewise, in its verbal use, *off* may be used to indicate the killing of a single individual.[13]

(214) die, kill

(215) a. The bees slowly died off.

b. John killed off his rivals one by one.

(216) John offed his business partner.

Off$_{away}$ may indicate a PATH towards inaccessibility (a notion that could, in fact, be extended to instances involving physical movement, where the FIGURE becomes inaccessible to the GROUND).[14] This use is found with an overt GROUND in the expression *off limits*.

(217) bar, block, box, close, cordon, curtain, fence, partition, rope, seal, shut, tie

a. John blocked off the exit.

b. The police cordoned off the crime scene.

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[12] Benjamin Bruening (p.c.) points out that one can *die slowly*, indicating that *die* can be construed as scalar. I have no explanation for why only the literal, non-scalar meaning should be available when paired with *off*.

[13] Despite my claim that *off* in *die off* and *kill off* is the same as the *off* in *sleep off* and *work off*, it should be noted that the verbal use of *off* allows only the meaning 'kill'.

[14] This may be one of the differences between *off* and *away*. Likewise, it would explain the difference between decremental *down* and decremental *off*, the latter of which implies towards non-existence. Certainly, something which is non-existent is inaccessible.

Off has sometimes been called a marker of inchoative aspect, as one of its uses is to mark the start of an event. In this sense, it can be seen as departure from a starting point, derived from either *off* $_{away}$ or *off* $_{support}$ (see §3.2.2.3.7 for more discussion of this use).

(218) kick, lead, push, set, sound, spark, start, take, tee, touch, trigger[15,16]

a. The baseball season kicked off with a pair of upsets.

b. Edward Snowden sparked off a debate about the constitutionality of the NSA's domestic spying.

c. The official sounded off the alarm.

Consider next the set of verbs below. Initially, combinations of *off* with these verbs may appear to indicate the achievement of a state, making this use appear to be a good candidate to receive the label of an 'aspectual' particle. However, in this set of verbs, the object appears to correspond to the GROUND of *off* rather than the FIGURE. The verbs in (219) alternatively allow the FIGURE or the GROUND argument to be overt, and in all instances the GROUND can also be interpreted as an argument of the verb. In contrast, the verbs in (220) do not generally allow an overt FIGURE argument. In the case of *cool*, I suspect there is an abstract HEAT FIGURE argument. In the most common use of *dust off*, *dust* corresponds to the understood FIGURE of *off*, though I assume that *dust* merges as a manner modifier directly with V (see fn 9). The common use of *rip off*, which takes as an argument the affected person (e.g. *John ripped Bill off*), seems to be derived from *rip something off someone* when *rip* is used metaphorically.

(219) brush, clean (a table), clear (a table), dry, mop, scrub, wash, wipe

a. John cleared the table off.

b. John cleared the dished off (the table).

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[15] The expression *hit it off (well/poorly) (with someone)* may make use of *off* in this sense as well, *it* referring to the (newly-formed) relationship between to people

[16] The combinations *fire off (some shots)*, *go off* (e.g. the bomb/the alarm/a light in my head went off) and *let/light/set off (a bomb)* are possible candidates where *off* marks the start of an event.

(220) cool, dust, rip ('to cheat')

While some of these combinations sometimes seem to have a 'completive' feel, the ability to modify the particle with *a little* shows that there is no need for the event to be completed: *can you clean/cool/dust the table off a little?*. Note also that one cannot say *warm off* or *heat off*, since both *warm* and *heat* (as verbs) indicate the addition rather than removal of heat. If *off* is simply denoting completion, there is no good explanation for the unavailability of these two forms.

There is a final use of *off* which appears to be quite distinct from both $off_{support}$ and off_{away}. In this use, *off* is an antonym to the use of *on* which indicates that something is functioning. These uses of *off* and *on* frequently occur with the same verbs (221), though a couple verbs are compatible only with *off* (222). In this use, $on_{function}$ appears to predicate of entities that can be construed as participating in activities not requiring the continued intervention of the external source responsible for initiating the activity. That is, while a person may be required to *turn on* a light, it remains on without that person's continued intervention—we might figuratively say that it has a life of its own. $Off_{nonfunction}$ indicates that such activities cease to continue. $Off_{nonfunction}$ is transparent, evidenced by its ability to occur with *be*, *get*, the basic motion verbs *come* and *go*, and in several constructions nontransparent particles are typically not found in, such as locative inversion constructions.

(221) off/on: call, keep, leave, log, power, sign, stay, switch, turn

(222) off/*on: cut (the power), shut

(223) a. The TV/car is off.

b. The power went off (cf. the power came on).

c. We finally managed to get the lights off.

d. ...and off went the lights.

In addition to predicating of the mechanisms that run on power sources, an event can be construed as 'having a life of its own' and therefore be $on_{function}$ or $off_{nonfunction}$, the latter indicating the cancellation of an event.

(224) break, call

a. The game is off because of the rain.

b. The bet is off.

c. John broke off his engagement. (cf. the wedding is still on)

d. John called off the meeting.

Although this use of *off* seems distinct from the other uses of *off*, it is similar to $off_{support}$ in contrasting with a use of *on*. It may even be possible to unify the two uses of *off* and the corresponding uses of *on*. Such a suggestion is made in §3.2.2.3.2, though it remains tenuous.

In this section, I noted three main uses of the particle *off*: $off_{support}$, off_{away} and $off_{nonfunction}$. I claimed that the first two of these denoted PATHS away from a source, with $off_{support}$ differing from off_{away} in that the former also indicated that the FIGURE argument had been supported by the GROUND prior to departure. I suggested that many nontransparent combinations with *off* involve nonspatial extensions of off_{away} (or perhaps $off_{support}$), with the different 'flavors' of the particle owing to the present of various implicit GROUND arguments. It was clearly shown that particles contribute meaning independent of the verb with which they combine, as almost all uses of *off* documented above are found in multiple verb+particle combinations.

The PATH denotation I assigned to *off* is likely to be the most contentious aspect of the claims above. After all, why should speakers assume a PATH denotation for the abstract uses of *off*? I suggest there are several reasons for this. First, prepositions from which particles are (historically) derived denote spatial relations, so a child is likely to attempt to relate abstract uses of particles (or prepositions) to their corresponding spatial senses which are learned earlier. Second, transitive prepositions, like particles, are frequently found in constructions where they arguably denote abstract spatial relations. If we accept this to be true, there is no reason to believe particles should be different. Finally, by identifying the type of PATH and implicit GROUND associated with any given particle use, we are able to develop testable analyses for why particles with seemingly similar meanings (e.g. 'completive') fail to occur

with the same sets of verbs. In the description above, suggestions were put forth for why the spatial particles *off*$_{away}$ and *away* are not interchangeable, and also for the 'decremental' particles *off*$_{away.existence}$ and *down*.

Finally, some additional observations were made along the way. Specifically, it was suggested that some particle verbs contain covert FIGURE arguments (e.g. *mouth/yack off*) and some contain promoted GROUND arguments (e.g. *clear the table off*). These two suggestions will be addressed in more detail in §3.2.2.4 and §3.2.4, respectively.

3.2.2 Are Particles Always Semantic Predicates?

In addition to claiming that particles have regular meanings, I assume the extreme position that all prepositional particles in English are predicative. I further assume that they are predicative not only historically (see, e.g., Los et al. 2012:149f) but also synchronically, conceding that their exact mental semantic representation may have changed in some regards over time. The previous section detailed how we can treat the various uses of *off* as predicative, with the implicit suggestion that investigations of other particles will (and have) demonstrate(d) likewise for other particles. The present section attempts to provide additional support for this position by countering claims that some particles may not be predicates by virtue of forming (noncompositional) idioms with verbs or by virtue of the particle having grammaticalized into an aspectual marker. In both instances, arguments of the particle verb are not considered to be selected by the particle.

The main evidence for treating some particles as parts of idioms or aspectual markers appears to be the difficulty in determining how they could mean anything else, as well as the fact that the meanings of prepositions/particles used with the copula *be* often fail to correspond in any obvious way to any possible meaning a particle might have in any given particle verb. I have already demonstrated above that, despite the difficulty in determining the meaning(s) of particles, examination of large numbers of particle verbs reveals regularly occurring meanings which may receive plausible analyses as predicates over nPs and challenges the treatment of many particle verbs as idiomatic. In this section, I provide similar analyses to uses of particles—not limited to *off*—which have been called 'aspectual'. The reason for

this is based on an assumption that 'aspectual' particles are much less likely to be able to receive an analysis as semantic predicates than other particles. If we are able to justify treating 'aspectual' particles as predicates, there is little reason to doubt that other 'less grammaticalized' particles are likewise predicates. Before examining 'aspectual' particles, however, I point out that the ability or inability of a particle to occur with *be* does not preclude the particle from being a predicate. In the same section, I show that numerous, nontransparent particles can, in fact, occur as the complement of *be* or other small-clause-selecting verbs, though only in restricted contexts. A few particles, including some nontransparent ones, are shown to be able to occur as verbs as well.

In addition to suggesting that particles can all receive *plausible* analyses as (abstract) spatial predicates, there are several additional reasons it is desirable to treat them as such. First, if all particles are predicates, their similar syntactic behavior is unsurprising. In contrast, the distributional similarities of particles is at least somewhat unexpected if particles belong to different semantic types, including transparent predicates, aspect markers and some that are part of noncompositional particle verbs. This issue is frequently ignored, though there have been a few attempts to provide distinct syntactic structures for different types of particles (e.g. Aarts 1989; Vinka 1999; Ishikawa 1999; Wurmbrand 2000). A second benefit is that the frequent appearance of unselected arguments can be accounted for in a manner similar to the unselected arguments of resultative constructions (which is not to say that all particle-verb constructions are resultatives in the strict sense). As predicates, both particles and resultative predicates may introduce arguments not selected by the matrix verb and, in such cases, prevent any internal argument otherwise selected by the matrix verb from being realized. A third benefit is that, by determining a specific meaning of a particle, we can begin to make sense of why certain particles, especially 'aspectual' uses of particles like *up* and *out*, appear with some verbs but not with others. If those particles denote certain types of metaphorical spatial relations, as I claim, they should only pair with verbs when the combination allows for the creation of a complex event that, to put it bluntly, makes sense.[17]

[17] I am not denying that many particle verbs are stored in the lexicon, nor am I claiming that every metaphorical spatial relations denoted by particles is productive within a restricted set of verbs consisting of a specific set of

There are a few caveats that must be made to my claim that particles in English are predicative. First, I claim in Chapter 4 that English, like other Germanic languages, has some nominal particles. While the claim that prepositional particles are predicative can be equally asserted of adjectival and verbal particles, it does not extend to nominal particles. Second, while particles are almost always predicated of the closest c-commanding nP, there are a few particles that appear to be predicated of covert nPs (see esp. §3.2.4) and a few particles whose FIGURE argument is not realized and in its place the GROUND argument has apparently raised and come to c-command the particle (see §3.2.2.4). Finally, it seems that the OV languages allow words not derived from/functioning as (loosely defined) resultative predicates to occur as particles. For example, Blom (2005:132) indicates that Dutch allows the following to function as particles: *voor* '(be)fore', *na* 'after' and *mee* 'with', as well as the applicatives *aan* 'at' and *toe* 'to' (whose normal internal argument appears as the argument of the entire particle verb) (see also Los et al. 2012:69ff, 95ff; for German, see McIntyre 2001a:§6).[18] Whether non-resultative particles in these languages should be distinguished from resultative particles is not examined here. Further, I am unable to investigate what role word order plays in allowing non-resultative prepositions to be particles, or even if this holds across all VO/OV Germanic languages.

3.2.2.1 Particles with Verbs that Take Predicate Complements

When a particle is able to be linked to its subject by means of a copula, we can consider this strong evidence that the particle itself is a predicate. Using this as a test of predicatehood, we can quickly determine that many particles used in a physical, spatial sense, as well as some other highly transparent particles, such as certain uses of *on* and *off*, are predicates.

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features. Though pure speculation, I suspect that prepositions/particles occasionally develop new denotations of metaphorical, spatial relations and are perhaps fully or perhaps only slightly productive for a limited amount of time, during which new combinations with that particle may be formed. Once that period of productivity is over, new combinations are unlikely to be formed, even if a verb's meaning is otherwise consistent with the requirements of the particle.

[18] Blom also calls some 'orienting' and 'directional' particles non-resultative (e.g. *John turned away his face*, *John breathed in*), but I do not include these here because they may potentially be treated as resultatives.

(225) a. John knocked the ball down (from the tree); John turned the TV on

b. The ball is down; The TV is on

At the same time, if we limit our tests of predicatehood to being able to occur with the copula *be*, we would come to the (incorrect) conclusion that less transparent uses of particles cannot be considered predicates, as they often fail to occur with the copula. The inability of such particles to occur with the copula, such as those in (226), has indeed been used to question whether those particles are predicates (e.g. Goldberg 1995:97f; Blom 2005:95).

(226) a. I drank up the beer; She read the article over

b. *The beer is up; *The article is over (McIntyre 2004:546)

In this subsection, I first point out that the inability of a particle to occur with the copula verb *be* does not preclude it from being a semantic predicate. I then show that a number of nontransparent particles do occur with *be*, but only in a limited context. I then expand the admissible set of verbs for testing for predicatehood to include the (raising and causative forms of the) verb *get* on the assumption that *get* selects a small-clause complement; thus, when it occurs with a particle the particle must be acting as the head of a small-clause predicate. I further include as a test for predicatehood the basic motion verbs *come* and *go* when they retain their transparent meanings to capture the predicatehood of particles that seem to require a type of motion context. The assumption underlying this latter test is that directional PP complements of motion verbs are SCs, predicated of the lowest nP (cf. Hoekstra 1988). If particles are able to occur with fully transparent uses of *come* or *go*, they presumably denote PATHS like their full PP counterparts in the same context.

Let us first address the claim that the inability of certain uses of particles to (easily) arise when paired with the copula *be* is evidence that they are not semantic predicates. This claim has already been sufficiently refuted in McIntyre (2001a, 2004) and Los et al. (2012), and I reproduce two of McIntyre's arguments here. McIntyre's first counterargument to this claim is that "most directional PPs and continuous state-change comparatives (i.e. inherently eventive PPs/APs) are incompatible with copulas...although they uncontroversially predicate over DPs". So while one can say *I walked [to the station]/[around (the house)]*, where the

PP is predicated of the subject, one cannot say **I am [to the station]/[around (the house)]* (examples are McIntyre's).

McIntyre also notes that copula constructions with particles are "highly irregular". To highlight this with an original example, we can generate sentences like *eat up one's lunch* and *drink up the wine*, where *up* appears to denote a path towards nonexistence, but we cannot say **my lunch is up* or **the wine is up*. In contrast, the same notion of 'nonexistence' is found in the expressions *Time is up!*; even *lunch is up* is possible if *lunch* is used to refer to a time period rather than food.

Despite the inability of many nontransparent particles to occur with *be*, there are a number of nontransparent uses of particles which can be found in copula constructions, though only in specific contexts (e.g. restricted to a particular nP subject). But even though a specific context is required for these particles to occur with *be*, examples like those below indicate that those uses of particles should be treated as predicative in the semantics. I include some ungrammatical examples below to highlight the fact that only certain contexts allow these particles to occur with *be*. Paraphrases of the meanings are only approximations, and I make little attempt here to identify an abstract spatial component of the specific uses below (this was done for the uses of *off* in §3.2.1). The examples below are not exhaustive.

(227) *around* 'in/to various (scattered/unspecific) locations in the vicinity of *x*'

a. There are spies all around, watching us.

b. kick, look, run, throw, walk; (more metaphorical) boss, mess, mope, screw, sit, slap, sleep, snoop, thrash

(228) *down* 'not functioning'

a. The server is down. (but cf. *the car is down)

b. break, go, power, shut (e.g. The server/car broke down)

(229) *down* 'written on a surface'

a. Once it is down on paper, I'll agree to the task.

b. copy, jot, mark, note, put, scribble, take, write

(230) *in* ‘together with; join’

a. Is everyone in (on the plan)?

b. butt, chime, chirp, cut, join (on a conversation)

(231) *off* ‘canceled’ (no longer functioning)

a. The wedding/game is off.

b. break, call

(232) *out* ‘known, accessible (where previously not known, accessible)’

a. The secret is out.

b. bring, figure, put, search

(233) *out* ‘unconscious (out of consciousness)’

a. John is out ??(cold/for the night).

b. conk, knock, pass, punch

(234) *up* ‘functioning’

a. The server has been back up since noon.

b. The car is up and running. (cf. *The car is up.)

c. fire, start

(235) *up* ‘final portion of path approaching a GROUND’

a. John(’s turn) is up.

b. John is up *(against the wall/at the counter).

c. catch, chum, cozy, crop, cuddle, drive, hook, meet, sneak, step, walk

(236) *up* ‘no longer existent’

a. Time is up

b. Your luck/turn is up

c. Your days as a criminal are up

d. cf. *the beer is up

e. burn, drink, dry, eat, use

The examples above show that a number of nontransparent uses of particles can occur with the copula *be* given the right context, supporting the claim that particles are predicates. There is really no reason to restrict our domain of evidence of predicatehood to the copula *be*, though, as there are numerous other verbs which pick out predicates. The various uses of *get* meaning BECOME (as a raising verb or a causative verb) can also identify predicates. *Get* essentially differs from the copula *be* in that while *be* predicates a property of an entity, *get* predicates a result property of an entity. As such, *get* allows us to demonstrate the predicatehood of a number of particle meanings which may only arise in the context of a resultative expression (i.e. particles that denote a change of state, rather than just a state).[19]

Below are just some examples of nontransparent, or not-fully-transparent, particles which occur with *get*. There is some overlap with particles that occur with *be*, but this is not total. I include paraphrases of the apparent meaning of the particle in the constructions below, but I assume the actual semantic meaning is more abstract, making reference to (metaphorical) PLACES or PATHS. I generally include both the causative and non-causative forms of *get*, showing that some particles may only occur with only one form while others may occur with both.

(237) *about/around* 'in/to various (scattered/unspecific) locations in the vicinity of *x*'

a. Word/The news got around/about about the NSA's domestic spying.

b. We need to get the word ?around/*about about the NSA's domestic spying.

c. ? The news is around that ...

d. kick, look, run, throw, walk; (more metaphorical) boss, mess, mope, screw, sit, slap, sleep, snoop, thrash

[19] Generally, the transparent uses of particles which can occur with the copula *be* can also occur with *get* (often with the causative variant, as in *the TV is off* / *John got the TV off*). The less transparent uses of particles which can be found with *be* do not always occur with *get*. So, although one can say *Time is up*, one cannot say (in my variety) **Time got up* or **We got the time up*.

(238) *down* ‘down the hatch’ (where ‘hatch’ = ‘throat’)

a. John had already gotten 6 beers down before the game began.

b. * The beer got down easily/smoothly.

c. ?? The beer is down.

d. The taste lingers long after the beer is down.

e. gobble, keep, scarf, wolf

(239) *off* ‘start of a path’

a. The show got off without a hitch.

b. They got the show off without a hitch.

c. * The show is off (but cf. *...and they’re off!*)

d. kick, start, take, touch

(240) *off* ‘sexual gratification’

a. John got off.

b. Mary got John off.

c. * John is off.

d. beat, jerk, wank, whack

(241) *on* ‘continue’

a. John got on with his life.

b. John gets on well with his colleagues (≈John gets along well with his colleagues)

c. * John(’s life) is on.

d. carry, drive, play, sing, walk

(242) *out* 'known, accessible (where previously not known, accessible)'

a. Word/The news got out about the NSA's domestic spying.

b. Snowden got out the news about the NSA's domestic spying.

c. Word/The news about the NSA's domestic spying is out.

d. bring, figure, put, search

(243) *through* 'reaching the other end'

a. John got through to the President.

b. Mary got John through to the President.

c. John is through to the President.

d. call, ring, push, put

Some particle meanings do not occur with the copula *be* because they only arise in contexts involving motion. I consider the ability to arise when paired with basic motion verbs *come* and/or *go*, when used in their transparent senses, to be evidence of the predicatehood of the particle meanings involved. Thus, just as *to the store* in *John went into the store* is a predicate denoting a path traveled by *John*, *John went out* is also a predicate denoting a path traveled by *John*. In the examples below, *come* and *go* seem to retain their literal meaning, and the ascribed meaning of the particle is clearly attributable to the subject nP. Note that because *come* and *go* include in their meanings a directional component, some particles meanings may be compatible with one but not the other of these verbs.

(244) *about/around* 'in/to various (scattered/unspecific) locations in the vicinity of *x*'

a. John went around calling himself Jesus.

b. kick, look, run, throw, walk; (more metaphorical) boss, mess, mope, screw, sit, slap, sleep, snoop, thrash

(245) *down* 'down (the throat)'

a. The beer goes down smoothly.

b. John managed to get the pills down.

c. gobble, keep, scarf, wolf

(246) *on* ‘continue’

a. John went on about his problems.

b. * John is/got on about his problems.

c. carry, drive, play, sing, walk

(247) *up* ‘up (the throat)’

a. John’s lunch came up after watching the video of the slaughter.

b. * John’s lunch got up.

c. * John’s lunch is back up.

d. cough, hack, spit, throw

(248) *up* ‘final portion of path approaching a GROUND’

a. John suddenly came up (to me).

b. John got (all the way) up to the checkout before remembering he needed to buy milk.

c. John is up *(at the checkout) / The topic is up (next).

d. catch, chum, cozy, crop, cuddle, drive, hook, meet, sneak, step, walk

(249) *up* ‘arise; come into existence’

a. John had to leave because something/a problem came up (out of nowhere).

b. * A problem got up.

c. * A problem is up.

d. cook, draw, dream, make, spring, think, whip

(250) *up* ‘no longer existent’

a. The house went up *(in smoke).

b. * The house got up (in smoke).

c. * The house is up (in smoke).

d. burn, drink, dry, eat, use

Finally, it is argued here that the semantics denotations of various particle uses include an unpronounced, abstract GROUND argument. In some cases, it appears that this unpronounced GROUND argument alternates with an overt GROUND argument, with little difference in meaning. If this is the case, then the ability of the full PP variant to occur with the various verbs above can be seen as evidence of the predicatehood of certain particle uses.

(251) *off* 'unavailable, inaccessible'

a. The entrance is off *(limits).

b. block, cut, partition, rope, tie

(252) *out* 'to an abnormal mental state; crazy'

a. John is out *(of his mind/of it).

b. John went out of his mind/*it.

c. flip, freak, spaz, weird, wig

The discussion and examples above demonstrate that the general inability of certain particles to occur with *be* is not sufficient evidence to conclude that they are not predicative. Some nontransparent particles do occur with *be* in restricted contexts, and numerous nontransparent particles occur with verbs like *get*, *come* or *go*, where they seem to function just like other small-clause complements of these verbs. Included in the examples above was the poster-child of a 'perfective' particle, *up*, which was seen to occur with both *be* (e.g. *time is up*) and *go* (e.g. *go up in smoke*) with the meaning 'no longer existent'. If even this particle is predicative, one must take seriously the possibility that other nontransparent particles are likewise predicative.

Before continuing, I wish to note that although I have contented myself to demonstrating that by expanding the range of verbs we are able to establish the predicatehood of many nontransparent particles, I have not taken this line of investigation to its limits. We could certainly include other copulas, raising verbs and ECM verbs that are able to occur with particles, including verbs like *seem*, *let*, *keep*, *make* or even more contentful verbs like *call* or *see*. Provided these verbs retain their original meaning/function when found with any

given particle use, we can assume the particle is functioning as a the head of a SC complement for that given use. At the same time, such an investigation should also verify that the particle is found with the same meaning/function in combination with other verbs to rule out the possibility of the verb+particle forming a noncompositional idiom. For example, the ability of *up* to occur with *make* in *make up a story* suggests that it is predicative, a suggestion which is supported by the appearance of other combinations involving the same use of *up* (which I take to mean something like 'into existence'): *think up an answer*, *cook up a story*, or *come up with a story*[20] (see Lindner 1983:125ff for more examples and discussion). Such an investigation would certainly confirm the predicativity of several nontransparent particle uses not included in my discussion above.

3.2.2.2 Verbal Uses of Particles

The particles *back*, *down*, *off*, *out*, and *up* may double as verbs.[21,22] In cases where these deprepositional verbs have the same denotation as particles, we must accept that these particles function as predicates in their own right. Because the number of deprepositional verbs with meanings also found in particle verbs is quite small, I provide examples for all

[20] *With* identifies the FIGURE argument of *up* in this example, where the verb is unable to provide it with Case. See §4.6.1.1.1 for discussion of this function of *with*.

[21] It is possible that the verbal use of *back* is denominal rather than deprepositional. The verbal use of *back* is unlike the other examples in this subsection in that *back* can form the verbal portion of a particle verb: *back away/off/up*.

[22] There are additional meanings for some prepositions which occur as verbs. For example, *back* in *back a candidate* means 'support'. Since this meaning of *back* is not in any use of the particle *back*, I do not include it in the list below. Nor do I do so in other similar cases.

such instances, both transparent and nontransparent.[23] To my knowledge, this list is exhaustive.[24]

(253) back: move backward (cf. *move back*, *push back*, *step back*)

a. John backed the car into the garage.

b. John backed into the garage.

c. The government backed off/away from their original plans after facing a significant backlash from the public.

(254) down: bring to the ground (cf. *shoot down*, *knock down*, *tear down*)

a. The storm downed several trees.

b. The missile downed the plane.

c. Mike Tyson downed his opponent in the first round.

d. In another featured women's match, 2010 runner-up Vera Zvonareva downed 115th-ranked American Alison Riske 6-0, 3-6, 6-3. (COCA)

(255) down: consume quickly (cf. *throw down*, *keep down*, *gobble down*)

a. John downed shot after shot, trying to forget all he had done.

b. John downed an entire cake in just under two minutes.

(256) off: kill (cf. *knock off*, *bump off*)

a. Is Herod capable of this? Yes. He offed some of his children. He offed various of his wives. (COCA)

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[23] In terms of contexts in which they may be used, particles used as verbs appear to be more restricted than in their non-verbal uses; thus, the particle verbs I provide for comparison cannot always be paraphrased with a construction using a deprepositional verb. For example, *John shouted the answer out* does not have as a possible counterpart **John outed the answer*.

[24] Examples followed by COCA come from the Corpus of Contemporary American English (Davies 2008-).

(257) out: become public knowledge[25] (cf. *speak out*, *come out*, *shout out*)

a. He was outed as being gay on the internet and he killed himself. (COCA)

b. A Russian newspaper, Kommersant, reported yesterday that a top-ranking official in their spy service known only as Colonel Shcherbakov outed the spies. (COCA)

c. The truth will out.

(258) up: increase (cf. *mark up*, *smarten up*, *bump up*)

a. Let's up the ante.

b. They have upped the penalties since last year.

(259) up: arise (only in expression 'up(ped) and left') (cf. *get up*, *jump up*, *rise up*)

a. One day, I'd had enough. I just up and left, and I haven't looked back since.

b. His girlfriend finally upped and left.

3.2.2.3 Aspectual Particles

Now that I have demonstrated that numerous nontransparent and 'aspectual' particles can be shown to predicative, I shift my focus exclusively to those particle uses which have been called 'aspectual', such as those listed earlier in §3.1.2.[26] Aspectual labels have been bestowed upon many particles in the literature without serious consideration of alternative possibilities, and unfortunately, many authors accept and further propagate such claims without question. The main problem with such claims is that they are often based on taking a hodgepodge of particle verbs containing what appears to be the 'same' particle by virtue of having the same phonological form and declaring that the particle must be aspectual because

[25] Without context, this typically means one is outed as being homosexual.

[26] I shall not make a distinction between grammatical aspect and lexical aspect/aktionsart. The terminology in the literature is mixed, with some authors using terms reserved for grammatical aspect (e.g. *perfective*) and others using terms reserved for lexical aspect (e.g. *telicity*, *accomplishment*). I claim that particles are neither mere markers of grammatical or lexical aspect, though they may have an effect on the 'lexical' aspect of the VP in a similar way that the type of nP object of a verb may.

no other unifying feature can be determined.[27] But as I demonstrated in §3.2.1, a 'single' particle can be subdivided into numerous, related uses, each found in numerous combinations. I maintain in this section that so-called 'aspectual' particles are not mere markers of aspect which modify events, but rather that they are extensions of particles' original spatial meanings. I take the extreme view that all of these aspectual particles are semantically predicated of the lowest nP argument, locating it at or on some metaphorical PLACE or PATH. The aspectual flavor of these particles is merely a side-effect of the type of space denoted by the particle, just as the distinction between a mass or count noun appearing as a verb's object can alter the aspect of a verb phrase (e.g. Krifka 1989). The subsections below examine what type of meaning these particles must have if they are abstract spatial predicates rather than aspectual markers.

The claim that so-called 'aspectual' particles denote spatial relations is not novel. There is a significant literature in psychology and Cognitive Linguistics examining the metaphorical uses of prepositions, such as the TIME IS SPACE metaphor that appears to be found in many particle uses.[28] Among authors working specifically on particle verbs, McIntyre (2001a, 2004) appears to have made the most direct argument for viewing aspectual particles as involving a type of metaphorical use of a more basic spatial notion, and I take many of his denotations as a starting point in the examination below. Nonetheless, I differ greatly from McIntyre in an important respect: McIntyre (2004) treats the 'aspectual' particles in his articles as event modifiers which place the event, rather than an entity, along the PATH

[27] To their credit, scholars labeling particles as 'aspectual' frequently note salient non-aspectual qualities of the same particles as well. As a result of this, however, it is not always clear whether the scholars think of the particles as functional markers of aspect, or something else that also has an aspectual quality or aspectual consequence. I believe the distinction is important because it would likely be manifested in the syntax as well. As words becomes grammaticalized, they begin to behave differently in the syntax, much like the contrasting behavior of the auxiliary *have* and the main verb *have*. Aspectual particles, however, do not behave differently from other nontransparent particles insofar as the syntax is concerned.

[28] See Cappelle (2005:356ff) for arguments against this type of view. His arguments are based on evidence that the metaphorical uses of particles/prepositions do not require access to the original spatial use in the actual processing of language. But such evidence does not preclude treating various uses of particles are metaphorical extensions of spatial particles/prepositions; rather, it only suggests that after extended meanings are developed, they are stored independently of the original spatial meanings rather than relying on the productive use of the metaphor during speech and down through the generations. Their denotation may still retain a type of abstract PATH/PLACE.

denoted by the particle. In contrast, I do not distinguish 'aspectual' particles from other particles in this regard, claiming that even 'aspectual' particles are predicates of entities.

Viewing 'aspectual' particles as predicates of individuals which denote abstract spatial relations ultimately allows us to understand why certain 'aspectual' particles combine with certain verbs rather than others and why 'aspectual' particles may affect a verb's selectional properties. Consider first an alternative account which treats particles as pure aspectual markers, taking an *n*-place predicate of events and returning an *n*-place predicate of events with altered aspectual features. Such an account fails to explain why some 'aspectual' particles may add unselected arguments, as in (260), or why others only (or usually) occur in intransitive constructions, such as those in (261).

(260) a. John roughed his brother *(up).

b. Before prohibition he drank his money *(up) in saloons...[29]

(= he spent all his money drinking (alcohol) in saloons)

(261) a. John played (*the guitar) on.

b. John played (*the guitar) away.

Furthermore, such an account does not explain why *up* in *use up* and *out* in *fade out* are not interchangeable (**use out*, **fade up*) if we are to believe that both particles simply mark a type of 'completive' or 'perfective' aspect (both particles have receive this label by various scholars). In contrast, if 'aspectual' particles are secondary predicates whose aspectual qualities are simply a by-product of an (abstract) spatial meaning, the lower nP arguments in (260) are similar to unselected arguments in resultative constructions. The inability to add *the guitar* or *the metal* in (261) will be shown to be disallowed in because the particle cannot be construed as a predicate of those arguments (see §3.2.2.3.2 and §3.2.2.3.5 for details).

In the following subsections, I first review McIntyre's (2001a; 2004) claim that 'aspectual' particles are path-denoting event modifiers (event-path particles), and I provide arguments against this conception (and continue to do so throughout). In the subsequent

[29] Modified from p. 173 in Fisher, Boyd (1922) *Mental Causes of Accidents*. Cambridge, MA: The Riverside Press.

subsections, I examine the various uses of particles which have been called 'aspectual', including some not discussed by McIntyre, and I attempt to demonstrate how each use denotes a spatial relation. The specific particles examined herein are provided below with aspectual denotations sometimes ascribed to them, many of which are taken from Brinton's (1985) review of the relevant literature. The reader is reminded that (homophonous sets of) particles have a number of related but distinct meanings, and the 'aspectual' particles discussed below are not to be confused with other uses of the same particle. I am not sure whether the use of *through* listed below as meaning 'connected' has been called 'aspectual', but it is included here because it is included in McIntyre's articles as an example of an event-path particle.

(262) a. *along* 'continuative + accompaniment'

John played the guitar, and Bill sang along.

b. *around* 'durative'

The children fooled around on the playground.

c. *away* 'iterative/durative/inchoative'

John pounded away (at the door)

d. *off* 'completive'

John used cold water to quickly cool off the pan.

e. *off* 'inchoative'

John teed off. (i.e. started playing golf)

f. *on* 'continuative/durative'

John played on.

g. *out* 'perfective'

John figured out the solution.

h. *through* 'connected'

John called through to the President.

i. *through* 'terminative'

John read the book through.

j. *up* 'completive'

John cleaned up the room.

3.2.2.3.1 Particles as Paths of Events or Paths of Entities?

As noted above, McIntyre (2001a, 2004) argues that certain 'aspectual' particles—including certain uses of the 'atransitive' particles *along*, *around*, *off*, *on* and *through* and at least one 'transitive' particle with a 'promoted ground': *through*—denote 'event paths', which are PATHS along which the subevent denoted by the main verb proceeds.[30,31] For example, the sentence *Fred talked on* receives the following semantic denotation.

(263) $[_{Event}$ DO(FRED, TALK)$]_i$ $\&_{contemp}$ $[_{Event}$ GO($[_{Event}$ $]_i$, $[_{Path}$ EXTENDED])]

(McIntyre 2004:533)

This says that there are two contemporaneous subevents. The first subevent is one of talking, with Fred as its AGENT. The second subevent indicates that its initial argument, in this case the first subevent, GOES along an extended metaphorical PATH. The result is that the first subevent is interpreted as continuing for an unspecified (extended) amount of time. McIntyre provides similar denotations for the other particles listed above, each differing in the nature of the PATH. I reproduce his semantic representations for members of this class of particles in English below. While McIntyre also discusses German particles, I ignore them here.

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[30] Presumably, one use of *away* is included in this set (e.g. *John hammered away*), but McIntyre (2004) does not explicitly mention *away* in this article. McIntyre (2001a), on the other hand, groups *away* together with other 'atransitive' event-path particles (their called 'argbloc' particles), but does not discuss it in detail. In McIntyre (2003:4), he provides the localistic denotation DO(X,sleep) $\&_{cause}$ GO(Y,FROM DEICTIC_CENTER) for 'decremental' *away* in the particle verb *sleep away* (e.g. *sleep the afternoon away*), but no denotation for 'aspectual' *away*.

[31] 'Atransitive' particles are those which prevent a verb's usual internal argument from occurring in the construction and, according to McIntyre, do not take an nP argument of their own. The 'transitive' particles found in event-path constructions contain an internal GROUND argument, but the matrix verb lacks an internal argument (in McIntyre's account) in such constructions as well. Thus, in the sentence *John read the book through*, *the book* is a GROUND argument of *through*, but not a semantic argument of *read*.

(264) Event-path pv's: $[_{Event}$ <activity>$]_i$ $\&_{contemp}$ $[_{Event}$ GO ($[_{Event}]_i$,[<path>])][32]

a. *around*: $[_{Path}$ -INTENDED GOAL]

b. *along*: $[_{Path}$ PARALLEL TO($[_{event/path}$ $\emptyset$])]

c. *on*: $[_{Path}$ EXTENDED]

d. *off*: $[_{Path}$ INITIAL PART OF($_{path}$ $\emptyset$)]

e. *through*: $[_{Path}$ THROUGH(X)] denotes a path inside x.

f. for the above paths, $[_{Path}$ ...] is licensed in the context
$[_{Event}$ GO ([THING/EVENT],$[_{Path}$ ...])]

(McIntyre 2004:532-533, 539, modified)

Based on the denotations above, in the sentence *Bill played around*, the *playing* subevent is on a PATH lacking an intended goal. In *Bill played, and John sang along*, the *singing* subevent is on a PATH parallel to some other contextually determined event or PATH—here, the event of Bill's playing. And in *John teed off* 'John started playing golf', the *teeing* subevent is on the initial portion of a larger, contextually determined PATH—here, the PATH of the game of golf.

McIntyre does not claim that all particles are predicated of an event. For example, in *Dave scratched a sticker off*, the PATH denoted by the particle predicates over the nP *a sticker*. The semantic representation McIntyre provides for this sentence is as follows.

(265) a. DO(DAVE,SCRATCH) $\&_{cause}$ GO(STICKER,TO(NOT(ON($[_{Thing}$ $\emptyset$]))))

(McIntyre 2004:525)

Thus, according to McIntyre, certain particles (and prepositions) may predicate over nPs while others may do so over events.

Assuming that McIntyre is generally correct in his treatment of particles as (often abstract) PATH predicates, an obvious alternative to McIntyre's claim that some particles

[32] In McIntyre (2004:532), this is a formal definition for 'atransitive pv's' rather than 'event-path pv's'. As far as I can tell, he uses the same definition for transitive event-path pv's (only the nature of the PATH differs), so I have replaced his original term with 'event-path pv's'.

may predicate over events is that these particles are predicated over nPs. McIntyre rejects such an analysis (his §3.4), but it has been promoted by Toivonen (2006) for the continuative use of *on*. She notes that in a sentence like *Susan played on*, *Susan* can be interpreted as 'continu[ing] movement through space or time' (p. 188). Revising this statement to more closely match McIntyre's semantic representations, *Susan* can be construed as traveling the metaphorical PATH while simultaneously participating in the *playing* subevent, both of which are temporally bound to each other in the semantics (McIntyre's $\&_{contemp}$). In doing so, Toivonen unifies sentences like *Susan played on* with those like *They spurred the horses on*, the main difference being whether *on* is predicated of the subject or object (whichever is lower). She is also able to account for the apparent transitivity restriction on 'continuative' *on* by noting that for this variant of *on* to occur with a transitive particle verb, we must be able to plausibly construe the sentence in such as a way that the action of the subject is what causes the object to continue on the PATH in question.[33]

In fact, McIntyre must admit that some event-path particles can, in fact, take entities as arguments. McIntyre (2004:531) states that in a sentence like *the discussion started off* (also *we started the discussion (off) with a review*), "the particle arguably has the same semantics as in [the atransitive–DL] *hit off* but predicates over an overt event nominal".

Though perhaps not the strongest argument, it often intuitively seems much more plausible that the so-called 'event-path' particles are predicates of entities rather than events. We sometimes find paraphrases such as those below, where the 'means' verb is replaced with a general motion verb, indicating (metaphorical) movement of the subject. If the particles in such constructions are treated as event-path particles, the meanings become rather convoluted; in the examples below, the particle would delimit the PATH of the subevent of

[33] McIntyre (2007:358) highlights a potential problem for Toivonen, which she discussed in her footnote 8. Specifically, *on* can occur with verbs taking a weather-*it* subject: *it rained on*. Both authors note that if *it* is nonreferential, there is nothing that could be continuing in space or time. Toivonen, however, notes that weather-*it* was noted in Chomsky (1981:324f) to behave differently from expletive *it*, behaving syntactically like referential nPs despite lacking a referent. Though Toivonen does not mention it, Chomsky provided additional examples which support her analysis. He notes (p. 141, fn. 40) that weather-*it* can occasionally be found in what he calls 'deviant, metaphoric use[s]': 'it certainly knows how to rain' and 'it's been trying to rain all day, but it just can't make it'. Examples like this suggest (to me, at least) that weather-*it* contains at least an inkling of semantic content.

'John's going' or 'John's following' rather than simply an abstract PATH traveled by John while engaging in some additional activity. If the event-path reading is correct, though, it should presumably extend to all directed motion constructions (e.g. *John went up the hill playing his guitar*).

(266) a. John went on playing the guitar (cf. John played on)

b. John followed along on/playing his guitar. (cf. John played along (on his guitar))

c. John went around asking for money (cf. John asked around for money)

A similar, though stronger, counterargument to McIntyre's analysis is that several of the aspectual particles are able to occur with the raising verb *get*, which I assume selects a small-clause complement. For example, so-called 'event-path' particles are found with *get* in *John got through to the President*, *the game got off to a good start* and *John got on with his life*. McIntyre's structures, however, would require that *get* take an external argument in these cases, and that the event of GETTING be predicated of by the complement of *get*. Not only is it unclear what this would mean semantically, but if *get* in intransitive constructions like the ones here takes an external argument, we can no longer unify causative and noncausative *get* syntactically; thus, *we got the game off to a good start* and *the secretary got John through to the President* would be syntactically unrelated to their noncausative counterparts.

The arguments above, as well as some interspersed in the subsections below, lead me to conclude that so-called 'atransitive' or 'event-path' particles are not predicates of events; rather, they are predicates of entities like other particles.[34]

[34] McIntyre (2004:§3.4) and Los et al. (2012:76f, 105ff) bring up a complication for the claim that 'atransitive' particles are predicated of the lowest nP. If such constructions are unaccusatives, raising the nP into subject position from the external argument position of the particle, this should be reflected in the choice of the auxiliaries *sein/zijn* 'be' or *haben/hebben* 'have' in German and Dutch. *Sein/zijn* is found with unaccusatives, but it is not found with 'atransitive' particles, contrary to what my claim should predict. This fact certainly does not require us to view 'atransitive' particles in the way McIntyre does—as path-denoting predicates of event arguments. If both particle and verb are allowed to assign theta-roles to the same nP, which I explicitly assume is possible in the following chapter, the difference in the choice of auxiliary would simply reflect whether or not the verb is assigning a theta-role.

3.2.2.3.2 'Continuative' *on*

I briefly ignore alphabetic order and begin my examination of specific 'aspectual' particles with *on* because McIntyre's analysis of this particle has been contested in the literature in favor of an analysis like the present one, and thus it serves as a good springboard for examination of the remainder of the particles. I begin with a brief overview of the basics of *on*.

As an 'aspectual' particle, *on* is used to indicate that an event is continuing, lacking implication of an endpoint. For this reason, it has frequently received labels such as 'continuative', 'durative' or 'atelic'. It is generally claimed that this use of *on* is found only in intransitive constructions (this is contested below), often without an explanation for why this should be the case. The following example demonstrates both the continuous nature of *on* and its inability to easily occur in transitive frames. In the example, *John*'s playing (of his implicit guitar) is understood to continue for an indeterminate amount of time. The example requires a specific context if one is to understand that John is playing the guitar, though, as the instrument may not be stated overtly in this construction.

(267) John played (*his guitar) on.

According to McIntyre (2004), we must distinguish between spatial and metaphorical readings of *on*. The spatial sense is found in both transitive and intransitive constructions, limited to sentences in which the lower nP is physically moving, as in (268a). The metaphorical (i.e. 'aspectual') reading is only found in intransitive ('atransitive' in McIntyre 2004) constructions, such as those in (268b). McIntyre (2004:529) points out that only spatial uses of *on* can be replaced with *onwards*, while the metaphorical use of *on* can be replaced with *on and on*, and this holds true of the examples below. With regard to the item being predicated of, McIntyre claims that *on* predicates of the lower nP in the spatial cases, but that in the 'aspectual' cases it is the initial subevent (e.g. *she worked*) which is predicated of by *on* and treated as metaphorically traveling along an extended PATH. The example in (268c), with an event nominal, is provided by McIntyre to support the claim that the 'aspectual' use

of *on* takes event arguments rather than entities, though I take it as evidence that the particle is simply predicated of the lowest nP.

(268) a. We prodded/moved/passed them on; We marched/walked on

b. She worked/talked/typed/danced on unperturbed; It continued/droned on

c. The shouting went on all night (McIntyre 2004:529)

The following examples provide the denotations of example containing the spatial and 'aspectual' uses of *on* in McIntyre's analysis. $\&_{contemp}$ indicates that the two subevents occur contemporaneously.

(269) a. Spatial *on*: $[_{Event}$ DO(WE$_i$,MOVE)] $\&_{contemp}$ $[_{Event}$ GO ([THING$_i$],$[_{Path}$ EXTENDED])]

b. 'Aspectual' *on*: $[_{Event}$ DO(SHE,WORK)]$_i$ $\&_{contemp}$ $[_{Event}$ GO ([EVENT$_i$],$[_{Path}$ EXTENDED])]

While McIntyre (2004) treats the 'aspectual' use of *on* as a marker of an extended event path, Toivonen (2006) argues that *on* is predicated not of an event, but of an nP. Toivonen claims that *on* "denotes continuation or onward movement through space or time" (p. 181). Thus, in examples like (268b), the lowest nP would be construed as traveling a metaphorical PATH "onward through space or time". Toivonen agrees with McIntyre, however, in assuming a distinction between the spatial and temporal senses of *on*, in large part because the Swedish particle *på*, the near equivalent of 'aspectual' *on*, only allows the temporal (non-spatial) sense.[35]

One notable aspect of Toivonen's account is that it predicts that *on* should be compatible with transitive constructions, a prediction that runs counter to the usual belief that *on* occurs in intransitive constructions only. Toivonen demonstrates that transitive constructions

[35] In addition to arguing that *on* predicates of the lowest nP, Toivonen also discusses the aspectual properties of *on* and the aspectual restrictions on verbs with which *on* may combine. While it is ultimately important to understand these properties if we wish to predict exactly which constructions *on* is compatible with, I do not discuss these factors here.

with 'aspectual' *on* do exist, as the reproduced examples in (270) demonstrate. This is confirmed by McIntyre's own diagnostic for distinguishing between the spatial and 'aspectual' uses of *on*, as shown in (271).[36,37]

(270) a. Her role became such of a success, that she starred in her own show, "Rhoda". Valerie Harper was at the time unsure about doing her own show, but Mary encouraged her on, and the Rhoda character lasted until 1979, 4 1/2 seasons and 110 episodes.

b. The schoolmaster saw he did not like to study and coaxed him on with a rod.

c. I wanted to stop singing, but everybody spurred me on. (Toivonen 2006:203f)

(271) a. * I wanted to stop singing, but everybody spurred me onwards.

b. I wanted to stop singing, but everybody spurred me on and on.

(Toivonen 2006:204f, modified)

By treating *on* as a secondary predicate, Toivonen is able to explain why *on* appears to resist transitive constructions. In order for on to occur as a secondary predicate, the lower nP must be construed as continuing in space or time, while the higher predicate must indicate the CAUSE of this result (at least in a transitive construction). Thus, in (270c) above, it is the event of *spurring* (meaning 'encourage' or 'cheer') which results in the lower nP (*me*) continuing onward with the singing. The ungrammaticality of typical examples of *on* in transitive constructions is due to the failure of one of these two conditions. Consider the following. The grammaticality judgments reflect the intended readings involving the 'continuative' use of *on* only.

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[36] Note also that *on* may be ambiguous between spatial and 'aspectual' readings, as the following example, noted in Toivonen (2006:207), demonstrates.

(i) Lisa ran on.
Lisa ran onwards.
Lisa ran on and on.

[37] Examples (270a)-(270b) are attested examples from the Internet, though the URLs found in Toivonen (2006) appear to be no longer active.

(272) a. Susan ate on.

b. * Susan ate {on} bread {on}. (Toivonen 2006:186)

(273) a. Susan played on.

b. * Susan played {on} her guitar {on}. (Toivonen 2006:186)

The (b) examples of (272) and (273) are ungrammatical because it is implausible that *Susan* causes the *bread* or *guitar* to continue spatially or temporally in either situation. On the plausible readings, it is the sentential subject, and not the object, that continues the activity denoted by the verb; however, because *on* must be predicated of the lowest nP, such a reading is not possible. In the (a) sentences, it is indeed the subject (the lowest nP) which continues spatially or temporally.

McIntyre's analysis predicts that *on* will only occur in constructions lacking an object because, in essence, resultative subevents only have one external argument position; if this position is filled by the event, there is no position available for an entity argument. But this cannot account for the occasional existence of transitive sentences involving 'aspectual' *on* that Toivonen highlights. It is not clear how McIntyre's analysis can allow constructions like (270c), which is transitive but involves 'aspectual' rather than spatial *on*.

In a brief critique of Toivonen's analysis, McIntyre (2007:358) criticizes the lack of support and detail provided by Toivonen for her semantic denotation of *on*. This critique is valid, so I shall attempt to provide a more detailed account along the same lines as Toivonen's analysis. First, I suggest starting with denotation of a particle verb containing 'aspectual' *on* which is only slightly different from McIntyre's analysis of the spatial use of *on*.

(274) Intransitive construction with 'aspectual' *on*

$[_{Event}$ DO([THING$_i$],[VERB])] $\&_{contemp}$ $[_{Event}$ GO ([THING$_i$],$[_{Path}$ EXT([TIME])])]

This denotation differs from McIntyre's analysis only in that the event does not travel along a PATH; rather, the initial subevent is contemporaneous with the entity moving on an extended (unbounded) temporal PATH, resulting in the sense of continuation. In an intransitive construction, the participant in the initial subevent is the same as the entity moving forward in

space and time; in contrast, the participant in the initial subevent of a transitive construction is distinct from the participant in the second subevent, and the initial activity must be the CAUSE of the second subevent.

(275) Transitive construction with 'aspectual' *on*

$[_{Event}$ DO([THING$_i$],[VERB])] $\&_{cause}$ $[_{Event}$ GO([THING$_j$],$[_{Path}$ EXT([TIME])])]

Now, consider the ungrammaticality of *Susan played her guitar on*. For this to be grammatical, Susan's playing (of the guitar) must cause the guitar to move ON temporally or spatially. This sounds nonsensical, but why should this be the case? After all, the guitar continues to make sound while Susan plays it. I suggest that this sentence is nonsensical because guitars cannot move ON without continued outside intervention by their player. Let us assume that this is a condition on the entity in the subevent in the denotation ON: the entity must be able to continue *on* without additional intervention by the causer after the initial CAUSE subevent. In *Susan rolled the ball on* (with spatial *on*), *the ball* may continue to move forward in space without Susan's continued intervention (though others may also give it a push), so it is grammatical. Likewise, in *I wanted to stop singing, but everybody spurred me on*, the lower nP (*me*) is able to continue ON without continued outside intervention, so the result is grammatical.

This extra assumption brings about an interesting and unexpected result. The function of *on* in expressions like *turn the TV/car on* now seems surprisingly similar to that of 'aspectual' *on*. In a metaphorical sense, when a TV or car is powered on, it may GO ON without outside intervention of the causer. In contrast, when these devices are powered off, they cease to function in any way, and they can thus not GO in any metaphorical sense. Admittedly, I am not convinced that we wish to treat *on* in *turn on the TV* in the same manner as 'aspectual' *on*, but it seems that the two readings are closely related semantically.[38] If my analysis is correct, it is easy to see how one reading could have developed from the other.

[38] Problems for a unified analysis of these variants include the fact that only the non-'aspectual' use contrasts with *off*, and also the fact that we can say *the TV is on* but not **the ball is on* (cf. *Sally rolled the ball on*).

One final set of evidence that supports the Toivonen-style analysis is the following sentences.

(276) a. John finally got on with his life.

b. John went on singing.

In McIntyre's analysis, (276a) would require the event of *getting* to travel along a path, but it is entirely unclear what an event of *getting* would be. In contrast, if *get* takes a resultative predicate argument, as I claimed earlier, then (276a) indicates that *John* continues ON, traveling the same PATH as *his life* (see §4.6.1.1.1 for relevant discussion of *with*).[39] In (276b), *singing* is intuitively what *John* continues doing, but it is neither the subject nor the verb of the matrix clause. Instead, this is an adjunct denoting an activity contemporaneous with the entire event.

3.2.2.3.3 *along*

Consider next the 'aspectual' use of *along*. I repeat McIntyre's denotation of 'aspectual' *along* and also show the denotation of an 'atransitive' particle verb containing 'aspectual' *along*.

(277) *along*: $[_{Path}$ PARALLEL TO$([_{event/path}\ \emptyset])]$ (McIntyre 2004:533)

(278) $[_{Event}$ <activity>$]_i$ $\&_{contemp}$ $[_{Event}$ GO $([_{Event}]_i$,$[_{Path}$ PARALLEL TO$([_{event/path}\ \emptyset])])]$

(based on McIntyre 2004:532f)

In an earlier text, McIntyre (2001a) also includes the condition NEAR alongside PARALLEL TO, and I will include this in my own representations below.

The non-'aspectual' use of *along* is fairly straightforward. In *John walked along the beach*—involving a transitive use of *along*—John walks PARALLEL TO and NEAR the beach. When *along* is used intransitively, the GROUND argument is pragmatically determined, often

[39] This becomes more plausible when we consider an expression like *John put his life on hold*, indicating that *his life* (referring to the events making up his life, rather than the biological opposite of death) is prevented from going ON.

identified as the complement of *with*. For example, *John walked along with Bill*, John's path is dynamically determined by the movement of Bill. Likewise, in *John sent along the book with Mary*—a causative construction—the book's path is dynamically determined by the movement of Mary.

Now, let's consider the 'aspectual' or 'event-path' use of *along*. In the following constructions, there is a sense that the two events are occurring at the same time and are somehow related; Cappelle (2005) refers to this relation as "synchronized temporal development". Both McIntyre (2001a) and Cappelle (2005) note that the activities may be different, so long as they are somehow related. This is demonstrated by (279b).

(279) a. Stan sang and Fran sang along.

b. The band played, and the audience clapped/stomped along.

(McIntyre 2001a:150)

For McIntyre (2004), it is the subevent of *clapping/stomping* in (279b) which is PARALLEL TO (and NEAR) the path, which is presumably determined by the first event.

As with other 'aspectual' particles discussed in McIntyre (2004), the 'aspectual' use of *along* is supposedly restricted to intransitive particle-verb constructions. Furthermore, according to Cappelle (2005:380), the simplex verbs which occur with this use of *along* must themselves be intransitive or have an intransitive variant.

(280) John sang (a song), and Bill played (*his guitar) along.

An alternative way of viewing a situation like that in (279a) is that *the audience* is traveling PARALLEL TO and NEAR the PATH of *the band* (which is *playing*) while contemporaneously engaging in *singing/clapping*. The ability to state this argument overtly in a *with*-adjunct suggests that this view is correct. Recall that the PATH of nonspatial uses of *along* can be identified by the complement of *with*.

(281) The band played, and the audience clapped/stomped along with the band.

Because the PATH is determined pragmatically when *along* is intransitive, it is not restricted to the subject of the initial event, so long as the reading is plausible; for example, replacing *with the band* with *with the song* in the example above is possible.

If *along* predicates not of the event but of the clause's subject (*Bill* in (280)), the apparent transitivity restriction likely follows for a similar reason 'continuative' *on* is typically restricted to intransitives. *Along* takes the lowest nP—*his guitar* in (280)—as a FIGURE argument, and as such it must be construed as moving on a contextually determined PATH, with the movement having been initiated by Bill's playing. In the discussion of *on*, I suggested that only nPs which could plausibly be construed as moving on an abstract path without continued outside intervention of the initial causer could occur as arguments of 'continuative' *on* in transitive constructions. I suggest that the same condition holds here. Bill's playing of his guitar cannot cause it to continue moving along the specific path determined by John without his continued intervention. That said, this does not explain why a sentence like **John ran down the hill, and a ball rolled along* is ungrammatical on the interpretation where *the ball* necessarily remains alongside *John* throughout the event. I suggest that in the case of *along*, the PATH of the moving entity (i.e. the FIGURE of *along*) must move in a controlled fashion so that it remains PARALLEL TO and NEAR another path. A ball cannot adjust its motion so that it remains PARALLEL TO and NEAR a path, hence the result is ungrammatical.

Although the explanation above explains why 'aspectual' *along* does not easily occur in transitive constructions, it does not rule them out entirely. I suggest that the following examples demonstrate that 'aspectual' *along* does, in fact, occur in transitive constructions. This is not possible in McIntyre's analysis.

(282) a. We helped them along with a little money.[40]

b. As they told me their stories I encouraged them along by asking questions.[41]

[40] *With* used here is not the same as *with* used elsewhere in this section. Here, it indicates the means of *help*, rather than identifying the GROUND.

[41] http://www.reachinginreachingout.com/E-NEWSBRIEF/documents/ResilienC-Issue7-Creating_stories_with_children.pdf, retrieved 10/13/2013.

As final evidence that *along* is a predicate of nPs, its use in non-spatial (presumably 'aspectual') contexts is sometimes possible with the copula *be*, where it places the FIGURE argument of *along* on a path NEAR and PARALLEL TO some GROUND. For example, *I'm just along for the ride* places *I* on a pragmatically determined PATH that need not be spatial (it would probably be another person or group of people, if this expression is used). When *along* is used with the copula, the path is frequently a temporal path, as is *I'm barely along in my pregnancy* or *He's getting along in years* (where the time aligns with *my pregnancy* and *years*). It can also be other abstract PATHS, such as the PATH through a book: *How far along in the book are you?* (or with *get* in *How far along have you gotten in the book?*).

Before continuing to the next particle, I feel I should briefly note another use of *along* which has been called 'continuative'. Cappelle (2005:376f) points out that two authors (Brinton 1985:166 and Bolinger 1971:106ff) have called the use of *along* in motion contexts like *the runners jogged {along/on}* and *We drove {along/on} for miles* markers of 'continuative' or 'durative' aspect. Cappelle rejects this notion, claiming that "In motion contexts, *along* merely expresses the spatial idea 'further in the same direction', and this, of course, inevitably gives rise to the idea of continuation of time" (p. 377). My discussion thus far has not actually distinguished spatial from non-spatial uses of *along*, and I am not sure we need to do so, either. It simply appears that in intransitive motion contexts with no additional context, the pragmatically determined GROUND is understood by default as the path they are already traveling on (or alongside). Thus, 'aspectual' and spatial uses of *along* differ only in the nature of the verb (compatible with motion events or not) and the nature of the path traveled by the GROUND (physical or not).

3.2.2.3.4 *about* and *around*

In this section, I combine discussion of the particles *about* and *around*. In their 'aspectual' uses, these particles appear to be largely interchangeable, with the preference for one form or the other depending on dialect (see Cappelle 2005:367ff).[42]

[42] McIntyre (2004:531) claims that *(he)rum* functions as the German counterpart to *about/around*, even though the forms are not historically related.

(283) a. The kids are out fooling about/around outside.

b. John is out driving about/around in his car.

I will exclusively use the form *around* as it is the more common of the two in my variety of American English, but the discussion below applies to *about* as well. I repeat McIntyre's denotation of *around* and also show the denotation of an 'atransitive' particle verb containing 'aspectual' *around*.

(284) *around*: $[_{Path}$ -INTENDED GOAL] (McIntyre 2004:533)

(285) $[_{Event}$ <activity>$]_i$ $\&_{contemp}$ $[_{Event}$ GO $([_{Event}]_i,[_{Path}$ -INTENDED GOAL$])]$

(based on McIntyre 2004:532f)

According to McIntyre, there are two uses of *around* that we must distinguish: a spatial sense and a nonspatial sense. He states that the spatial sense may occur in both transitive and intranstive constructions (e.g. (286a)-(286a)), and the nonspatial sense is found only in intransitive ('atransitive') constructions (e.g. (286c)). Both of these uses are found only in unbounded/atelic events. One of the salient characteristics of *around* in both these uses is the sense of 'aimlessness' it adds to constructions.

(286) a. John walked around.

b. The child pulled {around} the wagon {around}.

c. John joked around.

As was the case with *along*, McIntyre claims that *around* predicates of entities in the spatial sense and of events in the nonspatial sense.

McIntyre's analysis is problematic for several reasons. First, his claim that 'aspectual' (nonspatial) *around* only occurs in intransitive constructions does not seem to be true. There are numerous transitive particle verbs with *around* which do not seem to have any more of a spatial sense than (286c), and in this regard should be classified with 'aspectual' *around*. For example, one can *boss someone around* in a metaphorical sense, from one task to the next, even if all those tasks are completed while sitting at the same computer.

McIntyre (2001a) notes this, and argues against grouping such constructions together with 'aspectual' *around*, claiming that the object in such examples is "metaphorically caused to go 'around"' (p. 133). It seems to me, however, that we can make the same claim about the lowest argument in a sentence like (286c), giving the construction the following (simplified) denotation.

(287) $[_{Event}$ DO(JOHN$_i$,JOKE)] $\&_{contemp}$ $[_{Event}$ GO (JOHN$_i$,$[_{Path}$ -INTENDED GOAL])]

In (286c), *John* is engaged in an activity of joking, and he is contemporaneously involved in another subevent in which he travels a metaphorical goalless path. Because John is the participant in both subevents which are temporally mutually dependent, we derive a sense of goallessness for the event as a whole.

If the transitive *boss someone around* involves the same use of 'aspectual' *around* as the intransitive sentence in (286c), McIntyre's analysis is unable to account for it because the existence of an 'event' FIGURE argument precludes the appearance of an object. In the present analysis, no such conflict exists. That said, we must again ask why *around* does not occur in a construction like *play (*a silly game) around* (from McIntyre 2001a:131). The reason for this is the same reason why 'aspectual' *on* and *along* do not frequently occur in transitives: it must be able to be construed such that the initial subevent causes the FIGURE to traverse a PATH, in this instance a goalless PATH, and many combinations lead to implausible meanings. A tentative semantic representation of a transitive particle-verb construction with 'aspectual' *along* is presented below. It differs from (287) in the use of the event relator $\&_{cause}$ rather than $\&_{contemp}$, and in having two entities which are not necessarily coindexed.

(288) $[_{Event}$ DO(JOHN,BOSS)] $\&_{cause}$ $[_{Event}$ GO (EMPLOYEE,$[_{Path}$ -INTENDED GOAL])]

Given such a denotation, **John played a silly game around* is infelicitous because it would result in the nonsensical meaning that John played, resulting in the game traveling a goalless path.

Until now, we have examined spatial and 'aspectual' uses of *around*. Cappelle (2005) suggests that there is a third class of constructions with 'aspectual' (or 'goalless') *around*

involving "verb[s] of hitting or jerky movement" (p. 372), which are formed from transitive verbs of hitting or intransitive/transitive verbs of jerky movement. He claims that this sense of *around* lacks the sense of aimlessness found in other uses; instead, he believes that it has a sense of intensity. I have already argued against a distinction between a distinct aspectual and spatial sense of *around* (beyond the obvious fact that one involves a more abstract, nonspatial path), and I see no reason to distinguish this third class either. In fact, this third class actually provides additional support for the analysis I have pursued for the other cases.

In the case of verbs of hitting, it is plausible that the hitting event physically moves the verb's THEME argument, or a part of the THEME, from one place to another without any specific goal (for any single event of hitting). Anticipating such an argument, Cappelle claims that *slap someone around* argues against this possibility, as the person does not move. This does not seem to me to be a valid counterexample, for it is not difficult to imagine a person's face moving from side to side as they are repeatedly slapped. That it is sufficient for just a subpart of the affected entity to move is further demonstrated by a sentence like *the tree blew around in the wind*, where it is not the entire tree but rather subparts of the tree which blow around in the wind. When an action denoted by a verb does not effect any movement of the THEME—even if it implies some type of physical contact—then *around* is not allowed. This is shown in the following examples.

(289) John stabbed/jabbed/poked Bill repeatedly.

(290) * John stabbed/jabbed/poked Bill around.

Stabbing someone does not cause them to move, as the cutting instrument simply penetrates the person. Nor does jabbing or poking someone result in the movement of the person or a subpart thereof to a nonspecific goal. If, however, we consider a context where a giant pokes a regular-sized human, such that the smaller human does move, the combination of *poke* and *around* seems acceptable: *the giant poked the man around a bit*. Given this, it appears that this third category of verbs behaves like other verbs of movement in that the

individual subevents of the larger action taken upon the THEME have no specific goal.[43] Any intransitive verbs of jerky movement, such as *shake*, involve the movement of the lower nP with no apparent goal (for any of the subevents, at least), and thus do not present a counterargument.

Before ending this section, I wish to examine the semantic denotation of the particle *around* in greater detail in order to make explicit what the nature of the PATH is and why it adds a sense of 'aimlessness'. Until now, the only difference between the spatial and aspectual uses of *around* has been the nature of the PATH. Spatial *around* involves physical PATHS, while 'aspectual' *around* involves metaphorical, nonspatial PATHS. Both of the constructions involve unbounded PATHS, and a sense of 'aimlessness', and here I wish to explain how these senses follow naturally from one of the basic, spatial meanings of *around*.

As a preposition used in spatial contexts, *around* has at least two meanings. It can denote a PATH that encircles some GROUND, placing the FIGURE on that PATH, as in *John walked around the lake*. Alternatively, *around* can delimit the outer bounds of the GROUND, placing the FIGURE within this area, as in the reading of *John walked around the park* where he remains within the park. It is this latter use which has been extended to form 'aspectual' *around*. In this use, the PATH traveled by the FIGURE is unbounded ('goalless'), but because it is restricted by the outer bounds of the GROUND, it must constantly change direction in order to continue. Taken together, unbounded movement within a confined area yields the sense of 'aimlessness' found with *around*.[44]

The atelic/unbounded nature of *around* is likely explained by examining its etymology. *Around* is historically derived from *on round*. In an earlier section, we saw that 'continuative' *on* denotes an extended PATH which is necessarily unbounded, just like I have claimed for the PATH in the denotation of *around*. *Round* itself denotes a circle, and in at

[43] Note that the entire event itself may have a goal, such as teaching someone a lesson through a beating. In the semantic denotation, however, it is only the second subevent which lacks a goal.

[44] Note that something similar to the sense of 'aimlessness' is also found when *around* is used with the copula *be* or nonmotion verbs, usually requiring a plural FIGURE argument, as in *There are monsters all around* or *The people stood just around, talking*. Here, there is a sense that the members of the FIGURE argument are scattered about randomly.

least some varieties of English it can still be used as a preposition, taking a GROUND as its complement and denoting an area of pragmatically-determined length extending out in all directions from this GROUND.[45] If we look at older texts, it is possible to find some uses of *on round* where we would use 'aspectual' *around* today, as the following attested example demonstrates.

(291) "...but from the class of scholars who hang on round all *yamens* we met with a good deal of underbred impertinence..."[46]

Based on the discussion above, I propose the following denotation of 'aspectual' *around*, which combines the use of ROUND as a boundary marker with the denotation of 'aspectual' ON. This denotation is also the same as one of the prepositional uses of *around*, differing only in whether the GROUND argument identifying the PLACE is overt or covert. Spatial and non-spatial uses of *around* differ in whether the PLACE and PATH below are physical or metaphorical.

(292) *around*: [$_{Place}$ ROUND & [$_{Path}$ EXTENDED]]

3.2.2.3.5 *away*

The 'aspectual' use of *away*, represented in the examples below, seems to me the most likely candidate to be an actual aspectual particle, though I still argue against this possibility. This use of *away* marks an activity as continuing for an unbounded period of time, and it is generally claimed to be compatible only with intransitive constructions. It is compatible with most verbs with an activity reading (in the sense of Vendler 1957) or those which can at least be construed as such (e.g. through an iterative reading), though it seems that verbs that may never occur in an intransitive frame (e.g. *he pounded and pounded* vs. **he put and put*) may not occur with the 'aspectual' variety of *away*. Note that certain frames, such as

[45] The etymology of *about* may support this type of claim, though it is slightly less clear. *a-* derives from the ancestor of *on*, and *b-* from the ancestor of *by*. While *on* contributes the unbounded path to the meaning, *by+out* must work together to have a similar function to *round*. If they mean, essentially, 'by ('near') the outer side of' some GROUND, then the similarity to *round* is easy to see.

[46] From p. 94 of Isabella Lucy Bird's (1897) *Korea and her neighbors: a narrative of travel*.

Go ahead and ... or *Keep on ...*, facilitate placing a wide range of verbs in the $away_{continue}$ construction.

(293) a. The baby cried away through the night.

b. He came up to the door and just started pounding away.

c. John hammered away (at the rock).

d. John kicked away (at the door).

e. Go ahead and laugh away.

f. Keep on digging away until you find oil.

As a lead-up to the 'aspectual' use of *away*, let us consider first it spatial sense. In this sense, *away* typically indicates movement that distances one entity from another. *Away* is also commonly found in sense of removal or disappearance as well, which are simply minor extensions of the spatial sense. These sometimes seem to have a 'decremental' sense, but this follows naturally if there is a metaphorical PATH traveling away from the GROUND.

(294) a. John walked away (from Bill)

b. John sent the boys away.

c. Maggots ate the dead skin away.

d. The ghost faded away.

A temporal extension of the spatial sense above appears to be involved in the 'time'-*away* construction (here, $away_{time}$) examined in Jackendoff (1997b) and exemplified in the examples below. While transitive constructions in the spatial sense can arguably appear in both causal- and contemporaneous-event interpretations (compare (294b) with (294c)), $away_{time}$ appears to favor a contemporaneous-event interpretation. In (295a), for example, the event of John singing and the event of the night going away are mutually-bound temporally, with the night slowly 'going away' while John sings. A similar analysis is found in McIntyre (2003:4), who takes $away_{time}$ to be predicated of the time expression, stating that $away_{time}$ has a "decremental effect on the direct object".

(295) a. John went to the karaoke and sang the night away.

b. John is wasting his life away.

c. John hammered the day away.

d. John punched and kicked the hours away in his dojo.

e. They laughed the night away (at the comedy club).

f. They dug the days away in search of oil.

Thus far, *away* appears to denote the distancing of one entity from another, either physically or abstractly, suggesting a denotation like the following. The argument [$_{Thing}$] may be physical, temporal or abstract, giving rise to the various uses of *away* seen thus far.

(296) [$_{Path}$ DISTANCE.FROM([$_{Thing}$])]

Let us return now to the 'aspectual' use of *away* in (293), which I will label $away_{continue}$. I pursue an approach in which $away_{continue}$ differs from $away_{time}$ only in that the latter takes an overt nP time argument, while the former has a covert time argument which remains undefined, hence unbounded.[47] Assuming the subevents are contemporaneous, as I claimed was true of $away_{time}$, the interpretation of the second clause of (293b) would be 'John's pounding was contemporaneous with an undefined (unbounded) passage of time', which is essentially the meaning we need. (Of course, we can use an additional PP to bind the time, as in (293a), but the denotation of $away_{continue}$ itself has no bound.) In this regard, $away_{time}$ and $away_{continue}$ are two sides of the same coin, differing only in whether the temporal GROUND is present (and overt) or undefined (and covert).

In his discussion of the $away_{time}$ construction, Jackendoff (1997b:540) also considered conflating $away_{continue}$ with $away_{time}$, but he rejected the possibility for two reasons which I contest here. First, he notes that $away_{time}$ constructions are telic while $away_{continue}$ constructions are atelic. This problem is easily overcome if we claim that it is the nature

[47] In an alternative analysis to the one presented here, the subject could be construed as traveling a temporal PATH *away* from some start point while contemporaneously engaged in the activity denoted by the initial subevent. I shall not adopt such an analysis here, though such an analysis is certainly in line with claims about other particles above.

of the GROUND argument of *away*, rather than the lexical denotation of *away* itself, which determines whether the construction is telic or atelic. In $away_{time}$, the presence of a bounded-time-denoting nP is what forces the construction to be telic. In contrast, if there is an undefined time argument, the entire construction will lack an bound and be atelic.

Jackendoff's second argument is that $away_{time}$ but not $away_{continue}$ allows quantificational modification, as in the following examples.

(297) a. * Sally waltzed {entirely / partly / half} away.

b. Sally waltzed the afternoon {entirely / partly / half} away.

(Jackendoff 1997b:540)

Again, the difference here relies on the nP rather than *away*. Quantificational modifiers like *entirely*, *partly*, and *half* are only compatible in contexts where the length/duration of the element in question is known. This is the case for $away_{time}$, whose nP clearly delimits a finite period of time. In contrast, if there is an covert, undefined time argument, it would make little sense to talk about *half* of the time period.

Note that I am not only conflating $away_{continue}$ with $away_{time}$, but I am also considering them to be essentially the same as the spatial use of *away*, with the difference being the nature of the GROUND argument. Such an analysis is certainly not universally accepted (e.g. Jackendoff 1997b, Cappelle 2005; see McIntyre 2003 for counterarguments). Cappelle (2005:447ff), for example, ultimately claims spatial *away* and $away_{time}$ are distinct based on the following example. (His rejection of the conflation analysis is curious, since he actually accepts all of McIntyre's (2003) arguments against Jackendoff (1997b) and adds one of his own.)

(298) Bill gambled his life away. (Jackendoff 1997b:550)

On the 'spatial' reading, Bill bets his life and loses, while on the $away_{time}$ reading, Bill spends his time gambling, such that the activity consumes his life. But this difference does not indicate that there are two different *away*s at play; rather, the difference between the two readings of (298) lies in whether *life* is interpreted as a type of entity—as it is in the sentence

I gave you life, and I can take it away—or as a measure of time. When *life* is interpreted as an entity, it is his life that Bill wagers; on the other hand, when *life* is interpreted as a measure, Bill spent his life gambling. It is the interpretation of the FIGURE nP argument, and not *away*, which is crucial in distinguishing the ambiguity in (298). Note that the different interpretations of the FIGURE argument here will also determine the interpretation of the GROUND argument.

If we accept this explanation of $away_{continue}$, then unlike most particles, $away_{continue}$ is not be predicated of the lowest overt nP but rather of some abstract, undefined time element. This could, however, explain why this construction is always intransitive: the covert time argument fills the internal argument slot, preventing any overt argument from filling it.

Despite my claim that $away_{time}$ and $away_{continue}$ can be conflated, there is at least one apparent difference between the two. While $away_{continue}$ readily allows the understood THEME of the verb to occur in a conative *at*-PP, its occurrence with $away_{time}$ is much more restricted.

(299) a. John pounded away at the door.

b. John chugged away at his beer.

c. John chiseled away at the ice.

(300) a. John chiseled the day away.

b. * John chiseled the day away at the ice.

While this might be tied to the presence of an overt argument in the latter but not the former, it is not entirely clear how this distinction could be made to fall out from what I have claimed. Note, however, that it is not necessary that the *at*-PP mark an understood THEME of the verb, nor is it always impossible for an *at*-PP to co-occur with $away_{time}$, as the grammaticality of (301d) (for at least some speakers) indicates. Unfortunately, I am unable to provide an explanation for this data here, so I leave it for future research.

(301) a. * John slaved the painting.

b. John slaved away (at the painting).

c. John slaved his days away.

d. John slaved his days away at the painting.

3.2.2.3.6 'Completive' *off*

In the particles discussed above, their uses described as 'aspectual' generally seemed to capture a unified class of verbs. In the case of 'completive' *off*, however, it seems that the label has been applied to a variety of slightly distinct uses of *off*. For example, Live (1965:436) states that *off* "contributes a terminative slant" in the combinations "*pay off*, *write off*, *shut off*, *call off*, *sleep off*, *swear off*, *finish off*". These combinations, as well as others that have a similar 'terminative' feel, were already discussed in §3.2.1, where they were treated as extensions of the spatial use of off_{away}. Here, I content myself to highlight a problem that arises if *off* is treated as a mere marker of aspect. Consider the difference in grammatically in pairs like *write off someone's debt* and **write off one's name/dissertation*, where the choice of nP affects whether the phrase is acceptable or not. If *off* were just a verb-modifying aspect marker, and specifically a 'terminative' aspect, it is not clear why the noun's denotation in this case should affect the particle's ability to modify the verb (phrase), and I am not aware of any attempts to explain why this should be so. In contrast, if *off* is a secondary predicate as I have argued, it is not surprising that it is able to place restrictions on the type of nPs that it may be predicated of. In this case, *off* indicates that the *debt* goes away or disappears as a result of the (somewhat metaphorical) *writing* subevent. Writing one's name or dissertation, on the other hand, does not cause it to go away in any metaphorical sense regularly found with the particle *off*.

3.2.2.3.7 'Inchoative' *off*

Off has a second 'aspectual' use: the so-called 'inchoative' use (briefly discussed in §3.2.1). Examples of this use are repeated below.

(218) kick, lead, push, set, sound, spark, start, take, tee, touch, trigger

a. The baseball season kicked off with a pair of upsets.

b. Edward Snowden sparked off a debate about the constitutionality of the NSA's domestic spying.

c. The official sounded off the alarm.

This use is also considered an event-path particle by McIntyre (2004), who paraphrases its denotation as "a path which is the initial bound of a larger path" and claims this to be the source of its inchoative feel. Formally, McIntyre ascribes it the denotation in (302), and (303) places it inside its licensing context, where it is predicated of an event.

(302) *off*: $[_{Path}$ INITIAL PART OF$(_{path}\ \emptyset)]$ (McIntyre 2004:533, modified)

(303) $[_{Event}$ GO ([THING/EVENT],$[_{Path}$ INITIAL PART OF$(_{path}\ \emptyset)])]$

(based on McIntyre 2004:532f)

The alternative to treating *off* as a predicate of events is to treat it as a predicate of the lowest nP. In this case, the subject of an intransitive expression like *John teed off* 'John started his game of golf' would be located on the initial portion a temporal path delimited by the length of the golf game. This latter type of analysis is supported by the occasional ability of *off* to occur as the complement of *get*, *be* or the motion use of *come*, as in the following

examples.[48]

(304) a. And they're off! (said at start of race)

b. I'm off (to the bank). (said as one begins to leave)

c. The show got off to a good start.

d. The show is off to a good start.

e. John comes off as a bit arrogant, but he's not bad once you get to know him.

Finally, I wish to briefly consider the reason for the 'inchoative' flavor of *off*. I suspect that the sense that one is on the initial portion of this path can be explained by recalling that the denotations of *off* provided in §3.2.1 include a presupposition that the entity in question was previously ON the contextually determined GROUND (in the case of $off_{support}$) or AT the contextually determined GROUND (in the case of off_{away}). When *off* is used together with a verb to describe the 'resulting' path/place of an affected argument, there is a presupposition that this movement or change originated AT something. One use of off_{away} targets the "path which is the initial bound of a larger path" because it is during the initial portion that the shift from AT to off_{away} occurs.

3.2.2.3.8 *out*

Out is one of the most prolific particles, and along with *up* it is discussed extensively in Lindner (1983) (see also Morgan 1997). Most uses of *out* can be given rather straightforward analyses as predicates which maintain one of the basic functions of spatial *out*; nonetheless, *out* has been called an aspectual particle in at least some combinations. Live (1965:436) claims that, in such combinations, *out* "contributes a connotation of thoroughness and culmination". Even in this description, we see that *out*—with its claimed sense of 'thoroughness'— apparently carries more meaning that what a purely 'aspectual' particle would carry. Live provides the following list as examples of 'aspectual' *out*.

[48] The expression *get sthg off the ground* (e.g. a plan, a project) might be a reflex of 'inchoative' *off*.

(305) work out, puzzle out, carry out, fight out, wear out, seek out, sweat out, buy out, sell out, burn out, think out, turn out 'end', give out 'be exhausted' (Live 1965:436)

As with many lists of 'aspectual' particles, the list above seems to combine a number of uses of *out* and attempts to treat them together as a single use. If we examine them individually (or rather, in more appropriate groups), various uses of *out* become apparent.

One of the more common 'extended' uses of *out* noted by Lindner (1983:80) is denoting the "change from hiddenness to accessibility" (as when something *jumps out* at someone, such as a notable aspect of a painting or a piece of literature). This includes the verbs *work out*, *puzzle out*, *seek out* and *think out* above, as well as *figure out*, an example used by Farrell (2005:107) to demonstrate the most idiomatic type of verb-particle combination (inadvertently supporting my claim that particle verbs really aren't very idiomatic). *Turn out*, in the sense of 'end (up)', seems to belong to this group as well, the endstate becoming 'accessible' where it previously had not been. This use of *out* also occurs with the raising verb *get*, as in *News of the NSA's domestic spying program got out*.

According to Lindner (1983:87ff), *out* can also have the opposite meaning: "change from accessibility to inaccessibility" (as in *out of sight, out of mind*). As a result of spatial motion, 'inaccessibility' is an obvious consequence; if John *walks out* of a classroom, in some sense he is inaccessible to those remaining within the classroom. Of the list of particle verbs provided by Live, this arguably includes *wear out* (in the sense of non-functioning objects being inaccessible), *buy out*, *sell out*, *burn out*, and *give out* in its meaning 'be exhausted'.

A third regularly occurring denotation of *out* is the "expansion to full or canonical form" (Lindner 1983:99), which is an extension of the use of *out* in the spatial domain in constructions like *stretch out*, *roll out*, or *flatten out*. Of the particle verbs above, *carry out* and *sweat out* are examples provided by Lindner of this use, and *fight out* may belong to this category as well. Other particle verbs like *fill out* or *write out*, which have also been called 'aspectual', fall into this category.

As Lindner shows, it is possible to treat the 'aspectual' uses of *out* as metaphorical extensions of more basic spatial uses of *out*. Any aspectual qualities, then, can be derived from these denotations without treating particles as event modifiers. In the denotations suggested by Lindner, the particle is predicated of the lowest argument nP.

3.2.2.3.9 *through* #1

There are two common uses of *through* frequently treated as particles, though neither one actually occurs in the continuous order.[49] In one use, *through* is used in constructions indicating the formation of a type of connection. McIntyre (2004) considers this use of *through*, which he claims only occurs in intransitive 'telephone verbs' like the examples below, an 'event-path' particle, though he does not provide an explicit denotation.

(306) a. Stan rang {the secretary/the number}.

b. Stan rang through (with the details)

c. Stan rang {*the secretary/*the number} through.

[cf. *Stan rang through the details (to the secretary)–DL]

d. Stan rang the details through (to the secretary). (McIntyre 2004:535)

Again, it does not seem correct to treat this use of *through* as a predicate of events rather than entities. We can create constructions pairing the same use of *through* above with unaccusative *get* and the copula *be*, where it is difficult to comprehend, even abstractly, what it would mean for an event of *getting* or *being* to traverse *through* any metaphorical PATH: *John got through to the secretary*, *John is through to the President*. If it is instead *John* who metaphorically travels *through* some PATH—in these cases ending at *the secretary* or *the President*—the sense of 'connection' conveyed by this use of *through* seems to be quite natural. Additionally, the transitive (causative) use of *get* and *put* can also occur in telephone

[49] Because the continuous word order is not possible, the lexical representation of these uses of *through* must indicate that they are obligatorily projecting, in contrast with 'true' particles. The use of *over* which means something like 'again', as in *do something over*, is also sometimes called a particle even though it cannot precede the nP argument.

contexts: *The secretary got/put John through to the President*. This is entirely unexpected in McInytre's account.

The claim that this use of *through* is limited to telephone verbs or telephone contexts is also incorrect. Consider the following examples, the first involving a spatial PATH and the second a metaphorical PATH. In (307a), *John* is able to traverse some barrier to reach the *inner circle*. Depending on the context, *inner circle* could refer to a spatial configuration (one circle inside another) or a metaphorical group (e.g. a core group of insiders). In either case, it is intuitively clear that *John* is located at/in the *inner circle* at the end of this event. In (307b), *Stan* puts forth an effort to move across a metaphorical PATH (or through a metaphorical barrier—in this case, psychological or emotional) to *his son*, thereby connecting with him. There is a sense in which *Stan* is now in the same metaphorical space (here, emotional or otherwise cognitive) as *his son*. If we replace *his son* with a location, it is clear that the subject comes to be located here through a certain amount of effort.

(307) a. John got through to the inner circle.

b. Stan finally got through to his son.

These examples can be unified with the *through* found in the telephone context above if it is treated as denoting the formation of a connection by traveling through some barrier.

3.2.2.3.10 *through* #2

A second use of the 'particle' *through* involves what McIntyre (2004) calls 'Ground Promotion' (see §3.2.4 for discussion). In these constructions, an otherwise transitive preposition is used intransitively, and its GROUND argument precedes it. McIntyre (2004:537f)

also calls this an event-path construction. In the example below, the idea is that Joe's thinking (metaphorically) goes through the issue.[50]

(308) a. Joe thought the issue through.

b. $[_{Event}$ DO(JOE,THINK)$]_i$ &$_{contemp}$ ($[_{Event}]_i$,$[_{Path}$ THROUGH(ISSUE)])]

c. $[_{Path}$ THROUGH(X)] denotes a path inside x. (McIntyre 2004:539)

In this instance, the evidence against treating *through* as an event-path modifier is slightly weaker. It does not appear possible for this use of *through* to occur when paired with *be*, *get*, *let* or other unaccusatives. Nonetheless, I see no strong argument for treating this as an instance of the *thinking* subevent traversing the issue, as McIntyre does, as opposed to one in which *John* metaphorically traverses the issue while thinking; that is, the subevents of John thinking and John (metaphorically) traveling through the issue are contemporaneous. Absent compelling evidence to the contrary, treating *through* as a predicate of the lowest nP if preferable, as it maintains a uniform treatment of particles in English.

3.2.2.3.11 'Completive' *up* and Scalar Particle Verbs

In the literature, *up* is the quintessential 'aspectual' particle, often claimed to be a marker of completion or telicity. As such, it is important for the current pursuit to examine whether *up* can be viewed as a predicate or whether it is better treated as some type of aspectual marker or event modifier. In this section, I argue that 'completive' *up* consists of two, possibly more, related but distinct uses of *up*. Because of their similar nature, I discuss 'completive' up together with what I refer to as 'scalar' particle verbs. I first examine scalar particle verbs as a whole, including the scalar use of *up*, which is one variant of 'completive' *up*. I then discuss a second variant of 'completive' *up* which, though quite similar to scalar *up*, is compatible only with telic events. For discussion of additional variants of *up*, I refer the reader to Lindner (1983).

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[50] It may seem like this use of *through* allows the alternate word order (e.g. both *John thought through the issue / John thought the issue through* are grammatical), but speakers feel a slightly different nuance in each of the two orders that it not present in the case of other particles. When *through* follows the nP, it has been noted to have a more 'holistic' feel to it than when *through* is used in front of the nP (e.g. McIntyre 2007:354).

The examples below demonstrate a subset of scalar verbs which occur with the particles *down* and *up*. The main verbs in this subset are derived from gradable adjectives (see Lindner 1983:167 for additional examples and discussion).

(309) a. *down*: calm, cool, dim, quiet, slim, slow, smooth, thin

b. *up*: clean, free, heat, pretty, slow, speed, tense

c. *-en up*: brighten, fatten, lighten, liven, loosen, quicken, redden, shorten, smarten, thicken, whiten

On first glance, it does not seem likely that the particle of these combinations is predicated of the lowest nP. By *cooling down the table*, for example, there is no understanding that the table ends up *down* in any spatial sense. By making reference to the scalar property of the (derived) verbs, however, we are able to see that the particles do, in fact, predicate over the lowest nPs.

I have claimed above that a particle denotes a spatial relation, locating its FIGURE argument on a PATH or indicating direction of movement along a PATH. Because a scale is a type of PATH, the scalar verbs in (309) can be viewed as denoting a linear PATH, with the FIGURE argument moving along this PATH. Thus, *cool down the table* consists of a scale of *cool(ness)*, with the particle *down* indicating that *the table* moves down this scale (where the lower ends are colder). One can find precedents in the literature for a similar treatment of certain scalar particle verbs (Lindner 1983) and other change of state predicates as well (Jackendoff 1996:331).

This analysis comes with some caveats. Many scalar particle verbs allow for traveling in one direction only. Thus, one may *cool down* but not **cool up*, and one can *heat up*, *clean up*, or *speed up* but not **heat down*, **clean down*, or **speed down*.[51] This behavior is not unique to these particle verbs, though. We ask someone *how tall/old are you* rather than *how short/young are you* because people (usually) move towards the *tall/old* ends of the height/age scales and away from *short/young* ends, and our language use reflects this

[51] With at least one of the non-de-adjectival particle verbs I discuss further below, both *up* and *down* are possible: *level down/up*, used in the context of video games.

directionality. It is, therefore, not surprising to see one direction being marked and one unmarked in scalar particle verbs.

Two points need to be made with respect to this caveat. Scalar particle verbs formed from de-adjectival verbs ending in *-en* seem to always allow *up*. Thus, even though we would usually place *short* on the bottom of a height scale, opposite *tall*, we still say *shorten up* and not *shorten down*.[52] There are also a few scalar verbs which may take either *up* or *down*, such as *slow up/down* and *quiet up/down*. While one variant is more common than the other (the variant with *down* in these two examples), both are possible in at least some English varieties, and there is little apparent difference in their meaning.[53]

A second caveat to the analysis of scalar particle verbs is that formation of new, non-*en*-derived deadjectival scalar particle verbs does not appear to be highly productive. We cannot say **happy up*, **anger*/**angry up*/*down* or **kind up*, even though such constructions seem plausible based on the discussion thus far. This restriction appears to be related to whether the adjectives are able to occurs as verbs without particles. All of the non-*en*-derived deadjectival scalar particle verbs in (309) are homophonous with their adjectival forms (unlike *anger*) and can be found independently as verbs without particles (unlike *kind*

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[52] Online searches reveal that some people apparently allow the combination *darken down*, though this appears to be in addition to *darken up*, which is more widely attested. To me, the variant *darken down* feels like a type of wordplay to contrast with *lighten up*.

[53] Benjamin Bruening (p.c.) notes that he feels a difference between *slow down* and *slow up*. He states that *slow down* just means move down the scale of speed, but *slow up* implies some barrier or border, approaching which requires slowing. While such a nuance may exist for some speakers, examples attested in an online search for "slow up a bit" suggest that not all speakers share Bruening's distinction. Some examples are provided below.

(i) I do have to slow up a bit to give you a chance to try to keep up...
http://www.oldgoldfreepress.com/forums/WaterCooler/messages/7624.shtml

(ii) The bikers that make it through in the first wave should try to slow up a bit to let the second wave catch up before picking up the pace.
http://www.crisfieldtourdushore.org/Register.html

(iii) My posts may slow up a bit now, seeing as I have started full-time study.
http://thenamegarden.tumblr.com/post/48109652490/my-posts-may-slow-up-a-bit-now-seeing-as-i-have

or *happy*). If this is correct, we might expect to find that if a gradable adjective comes to be used as a verb over time, it will occur as part of a scalar particle verb as well. Concerning *-en*-derived deadjectival scalar particle verbs, this pattern appears to be productive, freely allowing combination with *up*.

If we accept that the particles in (309) place the FIGURE along a scalar PATH denoted by the deadjectival verb, we might also expect to find non-deadjectival verbs in verb-particle combinations which give rise to some type of scale. Jackendoff (1996:331) includes the simplex verb *grow* in *the crowd grew* as an example of a change-of-state predicate invoking a scale along which the lower nP moves. If this type of analysis is correct, *grow up* might receive a similar analysis, as well as *die down* (e.g. *the noise died down*) and many similar combinations. An expression like *build up an empire*, for example, differs from *build an empire* in that only the former implies 'increasing' the size/power of the empire through building. Lindner (1983:§3.4.2) shows that a large number of particle verbs involving so-called 'completive' *up* can be analyzed in scalar terms, with *up* denoting direction on a path towards achievement of the goal state of the activity denoted by the verb (whence the PATH). While scalar particle verbs involving the 'completive' use of *up* often imply completion, it is relatively easy to modify them with degree modifiers like *a little* or *all* (e.g. *John cleaned up his bedroom a little*), indicating that *up* is a direction on a PATH rather than merely an aspectual marker of completion.

There are even some denominal verbs which seem likely candidates to belong to the set of scalar particle verbs as well. For example, *doll up* designates a path of increasing doll-like quality, while *balloon up* designates a path towards a balloon-like shape (e.g. gaining weight). *Level up/down* is found in video game contexts for advancing to the next level, or reverting to a previous one.

A possible semantic denotation for scalar *up/down* is provided below.[54]

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[54] Benjamin Bruening questions the inclusion of the point in (310c), claiming that the fact that the relevant forms only occur with *up* should be semantically derivable. He suggests that *darken up* and *blacken up* are not possible, presumably because dark and black are perceived as lower ends of scales, but both are well-attested online (though *darken down* is also attested). I do not disagree that the pattern with *-en* should be derivable from the semantics, but I assume that the semantic denotation of *-en* affects the scalar construal in such a way

(310) *down/up*$_{scalar}$: [$_{Path}$ ADVANCE(SCALE)], where

a. metaphorical paths with a fixed direction of advancement use *up* or *down*, accordingly

b. the default direction for advancement is *up*

c. grammatical affixes may force the use of default *up*

This denotation indicates that the type of PATH is determined by the (often derived) verb. The argument advances along this PATH, moving either *up* or *down* in accordance with the stated conditions.

A related use of *up* is found in constructions which Lindner labels 'subtractive processes', including standard examples of 'completive' *up* such as *eat something up* and *drink something up*. In this subclass, the FIGURE argument moves towards non-existence, thus the FIGURE itself appears to serve as the scale. Unlike the use of *up* described above, however, the degree modifier *a little* may not occur with the particle for members of this subclass. This likely indicates that we are dealing with a slightly different flavor of *up*.[55] I provide a denotation of 'nonexistence' *up* below.

(311) *up*$_{nonexist}$: ([$_{Place}$ NONEXISTENCE)])

Support for treating the denotation of *up*$_{nonexist}$ as the property of nonexistence is found in expressions such as *your time/luck is up*, where *up* indicates that the entity denoted by the nP ceases to exist. While using *up*$_{nonexist}$ with the copula is quite restricted in English, its Dutch equivalent is more freely able to occur with nouns in copula constructions: *de soep is op* 'the soup is gone' (Blom 2005:96). This indicates that this use of *op* is transparent in Dutch, but not in English.

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as to make *up* the appropriate particle. Determining the exact denotation of *-en*, however, I leave for future research.

[55] Benjamin Bruening questions whether the imperative use *Eat up!/Drink up!* should receive the same treatment as the transitive use exemplified here, noting that there is no expectation that all of the food in the situational context will be eaten (e.g. if one is at a buffet). Here, the sense appears to be 'until full' (i.e. eat/drink as much as you want), suggesting that there may be some implied scale of fullness.

In this section, I have claimed that 'completive' up can be split into at least two subtypes, including 'scalar' *up* (forming a group with *down*) and 'nonexistence' *up*. I claimed that scalar *up/down* indicate the direction of movement of the FIGURE argument along a scale denoted by the verb, while nonexistence *up* predicates the property of nonexistence on an argument.

3.2.2.3.12 Conclusion

In the present section, I claimed that so-called 'aspectual' particles retain an abstract spatial meaning in their denotation, which is predicated of an external FIGURE argument. I provided such analyses for the particles most commonly classified as 'aspectual', demonstrating how the apparent aspectual meanings fall out from the particles' spatial denotations. My analyses followed the line of argumentation in McIntyre (2001a, 2004), though I rejected his claim that certain 'aspectual' particles are predicates of event rather than entities, noting among other factors the frequent ability of these particles to occur with unaccusative/causative *get* which is unexplained in his account.

3.2.2.4 Covert Arguments

Although I suggest that it is almost always the case that a particle predicates of the lowest argument nP, that being the object of a transitive or subject of an intransitive particle-verb construction, there are several apparent exceptions to this claim, including *shout out* verbs, *light up* verbs, *start off* verbs and the $away_{continue}$ construction. I briefly examine these in this section, and I conclude that in each instance, there is an understood abstract argument that functions as the FIGURE of the particle. Thus, these apparent exceptions do not constitute a counterexample to the claim that (prepositional) particles are predicates.

Consider first the *shout out* class of particle verbs, consisting of numerous manner of speaking verb and the particle *out*. Included in this class are the verbs *cry*, *scream*, *shout*, and *sing*. While these particle verbs may take an overt object nP of which *out* is clearly predicated, they may also occur intransitively. When these verbs lack an overt object, the particle is intuitively predicated of some unspecified vocalization and is not predicated of

the lowest overt nP, the subject. Thus, *out* in the *shout out* class remains a predicate despite lacking an overt FIGURE.

(312) a. John cried/screamed/shouted his attacker's name out.

b. John sang the song out.

(313) a. John cried/screamed/shouted out (in pain).

b. John sang out at the top of his lungs.

The *light up* class, noted in McIntyre (2001a:144) and McIntyre (2004:543), patterns with the *shout out* class insofar as the FIGURE argument is optional in particle-verb constructions, but it differs in that the simplex verbs they are built upon are obligatorily transitive when used in the relevant sense, unlike those in used in the *shout out* class.[56]

(314) John cried/screamed/shouted (his attackers name).

(315) a. Adrian lit/rolled up (a cigarette). / Adrian lit/rolled *(a cigarette).

b. Sally locked/tidied up (the house). / Sally locked/tidied *(the house).

(McIntyre 2001a:144 and McIntyre 2004:543)

The 'inchoative' use of *off* might also allow optionally covert FIGURE arguments in some instances, as the examples below demonstrate. This class differs from both the *shout out* and *light up* classes in that the combinations appear to allow an ergative-causative shift.

(316) a. John started (the discussion) off with a review of the facts.

b. John kicked (the game) off with a homerun.

(317) a. The discussion started (off) with a review of the facts.

b. The game kicked *(off) with a homerun.

[56] The particle verb *chip in* may belong to this class as well, although the meaning of the verb in the construction is unavailable without a particle: *The students all chipped in (some money) for pizza. / *The students all chipped (some money).*

Note, however, that one might plausibly analyze the variants in (316), with seemingly covert arguments, like other intransitive particle verbs, where the matrix subject is also the underlying FIGURE argument. For example, even if *John* is not the first batter of the game, he might *kick off with a homerun*, so long as it is his first at-bat of the game.

The final apparent exception is the $away_{continue}$ construction discussed in §3.2.2.3.5. I repeat the examples from (293) below.

(293) a. The baby cried away through the night.

b. He came up to the door and just started pounding away.

c. John hammered away (at the rock).

d. John kicked away (at the door).

e. Go ahead and laugh away.

f. Keep on digging away until you find oil.

I argued above that $away_{time}$ takes a temporal *figure* argument that remains unspecified. Thus, the construction indicates that the initial subevent is contemporaneous with the subevent denotion the passage of an unspecified amount of time. If such an analysis is correct, then *away* also contains a type of covert argument.

As the examples and discussion above shows, there are some particle verbs in which the particle is predicates not of the lowest overt argument, but of a covert argument.[57] Constructions in which this was noted to occur include the *shout out*, *light up*, *start off* and *V away* constructions.

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[57] There are two relevant questions regarding covert arguments that I am unable to adequately address at the moment. The first question is what licenses the presence of covert arguments. The existence of (deletable) cognate objects, arguably present in the *shout out* class, might be one sufficient licensing condition. In contrast, the *light up* class only allows covert arguments for specific meanings (e.g. we can *light up a cigarette* or *light up a stove*, but only the former reading is available with a covert argument), so I assume that they are memorized and a relatively unpredictable class. In 'inchoative' *off* and $away_{time}$, the particle alone seems responsible for licensing a covert argument, and this must be specified lexically (though it is not clear why other particles should not do so). Alternatively, it may be that both are actually predicated of the lowest overt argument, an alternative which was noted above and in fn. 47 earlier. The second question, which I am unable to answer at present, is whether these covert arguments are present syntactically or only semantically or pragmatically.

3.2.2.5 Conclusion

In this section, I argued that particles are predicates of nPs. I first argued that using the inability of a particle to occur with the copula *be* as evidence that any given particle use was not predicational, while the ability to occur with the copula *be* is evidence that a particle is predicational. Using this as a test of predicatehood, I showed that a number of nontransparent particles can, in fact, be shown to be predicates, though their occurrence with the copula is often restricted to specific linguistic contexts. I showed that by expanding this type of test to include other verbs which take small-clause complements and the verbs of basic motion, additional nontransparent particles can be shown to be predicational. In a few cases, particles are able to function as verbs, again evidence of their predicational nature. I then examined the class of so-called 'aspectual' particles, the most likely candidates for being non-predicational. I demonstrated that the aspectual quality of these particles follows from underlying abstract spatial meanings. Finally, I claimed that there are certain particles which allow covert FIGURE arguments and should not be considered counter-evidence to the claim that particles are predicates.

3.2.3 *Back* as a Test for Spatial Meaning

Until now, I have presented the discussion of the meanings of particles in a synchronic light, but how can we know whether the (types of) meanings I have suggested are not merely reflections of earlier meanings of the particles—presumably held at the point in the past when they were able to productively form new combinations? This is not a simple matter to answer, especially considering that the suggested meanings are abstractions of more literal senses and not easily falsifiable. Nonetheless, there is some evidence that particles do retain at least some spatial component to their meaning, as I have been suggesting here; specifically, the ability of particles to occur with the restitutive use of the modifier *back* appears to verify the existence of this spatial component. If this is correct, then the ability of *back* to easily occur with a wide range of particles, including many 'aspectual' particles and particles in what some consider 'idiomatic' combinations, indicates that these particles denote (concrete or abstract) spatial relations.

Before examining the restitutive use of *back*, I briefly mention two other uses of *back* as a particle which should not be confused with restitutive *back*. One use of *back* occurs in particle verbs denoting quick consumption, usually of alcoholic drinks though it can also be found less commonly with foods. Here, *back* denotes the direction of the consumable as it enters the mouth. This is shown in (318). In (319), we see a second use of *back* which denotes a general spatial or temporal direction. As with other particles, both of these uses of *back* take a FIGURE argument.

(318) a. Let's kick/knock/pound/put/slam/toss/throw {back} a few beers {back} before the game.

b. Let's get a movie and throw {back} some popcorn/chips/cookies {back}.

(319) a. The army fought {back} the invaders {back}.

b. John pushed {back} the car / deadline {back} as far as he could.

The use of *back* we are concerned with here is the restitutive use of *back*. Consider the following examples.[58]

(320) a. John is back ((at) home).

b. John went back (to the store).

c. John ran back (under the bridge).

d. John threw {back} the ball {back}.

e. John threw {?back} the ball {back} to Bill.

f. John sent back out a response.

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[58] When restitutive *back* occurs with particles, I have a preference for the discontinuous order, especially when followed by a PP specifying the end location of the FIGURE. I do not have an explanation for why this is, nor have I tested whether this preference is common. Google searches, however, confirm that (iii), for example, is strongly preferred in the discontinuous order, though the continuous order is also attested.

(i) Bill came back (to the store).

(ii) John called {*?back} Bill {back} (to the store).

(iii) John put {?back} the cup {back} (on the table).

(iv) John sold {back} his books {back} at the end of the semester.

(v) John gave {?back} Mary {back} her books {back}.

As these examples demonstrate, restitutive *back* is not restricted to particle-verb constructions. It may occur with a copula, with an overt PP argument, as a particle, or as a (prepositional) particle-modifier. When *back* occurs with an overt P(P), it adds the presupposition that the spatial relation it denotes had existed previously.[59] This presupposition is also present when *back* does not precede an overt PP, where there is an implied PP. Although it might be possible to treat restitutive *back* as an event modifier, I analyze restitutive *back* similar to other particles. I assume that it takes a FIGURE argument and a (sometimes null) PP GROUND argument which shares the same FIGURE argument. The denotation of *back*, formalized below, indicates that the FIGURE argument is reversing their movement along a PATH (cf. *backtrack*) away from some origin, which is denoted by the PP GROUND when overt. More specifically, *back* denotes a new PATH which is the reverse of this earlier-traveled PATH.

(321) $[_{Path}$ REVERSE($[_{Path}$ AWAY.FROM(PLACE)])]

When restitutive *back* occurs with prepositions, it only does so when they have a spatial meaning. Temporal prepositions like *before*, *after* or *since* cannot occur with restitutive *back* (though *before* can occur with the general spatial *back*), restitutive *back* occurs with *with* only when *with* can be construed as spatial (when *together* is also possible; e.g. *John is back (together) with Mary*), and it fails to occur with more idiosyncratic prepositions like *like*, *about*, *of*, *per* or *notwithstanding*. When *back* occurs without prepositions, it typically occurs with verbs of motion, though it can occur with other verbs so long as it can be construed as indicating the endpoint of (possibly abstract) motion of some entity (e.g. *John repeated the order back (to Mary)*). Absent such a possible construal, *back* does not occur with verbs; for example, *John ate lunch again* cannot be rephrased as **John ate lunch back*.

[59] In some respects, restitutive *back* is similar to *again*, which has been discussed most notably by von Stechow (1995, 1996); Beck & Johnson (2004). Both of them add the same presupposition that the state denoted by the relevant phrase had previously existed. That being said, they differ in some respects as well. In terms of word order, *again* typically occurs to the right of the clause, while *back* precedes PPs (compare (58) with *Bill came to the store again/*back*) and may precede nP arguments of the verb (compare (58) with **John sold again his books.*). Additionally, *again* is not restricted to occurring with stative eventualities, as seen in *John won the lottery again/*back*.

If the description of restitutive *back* above is accurate, then it provides us with a test to determine whether a word has a spatial component to its meaning. The ability of *back* to occur with the verb *have* (e.g. *Can I have my wallet back?*) thus suggests that scholars who have claimed that the verb *have* decomposes into BE + AT or similar expressions—noting that other language frequently use spatial prepositions comparable to *at* in possession constructions—are correct (e.g. den Dikken 1995). We can expand this to the double-object construction, which also freely allows *back* (e.g. *John handed Bill back his wallet*), suggesting that accounts positing some type of null HAVE predicate to mark the possessive relationship between the two arguments are correct.[60]

But what is most important for the present purposes is that the ability to modify particles with *back* indicates that they have a spatial component to their meaning. If certain particles are simply 'aspectual' markers or words lacking semantic content of their own (i.e. if some particle verbs are noncompositional idioms), then they should be incompatible with *back*. The following examples include likely candidates for 'aspectual' particles or idiomatic particle verbs (several are, in fact, classic examples thereof), yet they are able to occur with *back*, suggesting that these particles must add their own semantic, spatial component to the

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[60] In double-object constructions, restitutive *back* is unlike other particles in that *back* may follow the second object quite easily. Below are some examples retrieved from the internet based on the Google search *"gave the * her * back"*. See §5.3.2 for syntactic discussion on this point.

(i) a. Jesus knew that, and gave the woman her son back alive.
Retrieved from http://www.sermonsfromseattle.com/series_c_jesus_raises_the_widows_son_GA.htm on 12/02/2012.

b. This gave the client her confidence back.
Retrieved from http://www.pryers-solicitors.co.uk/success-stories/clinical-negligence-success-stories/ on 12/02/2012.

particle verb.

(322) a. John looked the word back up.

b. John, being completely drunk, drank the beer back up a second time (after having vomited it out once).

c. The wolves have only just "started" to make a comeback and everyone is ready to just kill them back off.[61]

d. Though he had given up smoking, John caved back in last week and started up again.

e. I know the track as well as *anyone* but it took me 10 laps to figure the place back out simply because of the gearbox.[62]

Despite my claim that *back* picks out spatial meanings and shows that particles have a spatial component to their meanings, *back* does not easily occur with particles denoting unbounded PATHS, including certain uses of *along*, *around*, *away* and *on*. This does not mean these particles are not spatial; rather, *back* seems to avoid occurring in constructions without a clear endpoint, as the following examples demonstrate. Example (323a) but not (323b) indicates that *John* has reached an endpoint, and only the former is compatible with *back*.

(323) a. John walked up the mountain yesterday. He walked back up the mountain again today.

b. John tried walking up the mountain but only last 20 minutes. *The next day he climbed back up the mountain for 20 minutes.[63]

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[61] http://magblog.audubon.org/proposal-delist-gray-wolf-nationwide-triggers-outcry, comments section, retrieved 9/23/2013.

[62] http://forums.autosport.com/topic/31003-a-question-for-ross/, retrieved 10/16/2013.

[63] This sentence is grammatical only if *John* climbs to the top and remains there for 20 minutes. It cannot mean that he climbed upward again for 20 minutes.

There is, in fact, one final use of *back*: a marker of reciprocation of an action. The reciprocal sense of *back* can be seen in examples like the following. Notice that the verb modified by *back* need not be identical to the verb in the preceding clause or event.

(324) a. Why don't you call {back} your sister {back}?

b. John yelled at the lion, and it roared back.

c. The company didn't expect its employees to fight back so hard after reducing their benefits.

At first approximation, reciprocal *back* appears to be an event modifier, adding the presupposition that, at some previous point, there was a similar type of event which occurred, with the roles of the participants reversed. It also indicates that the current event is a response to that previous event. The distinction between reciprocal *back* and restitutive *back* is not always clearcut, though; for example, in constructions with verbs of communication, like that in (324b), there might be a covert argument SPEECH construed as volleying back and forth between the speech participants, in which case we might argue that *back* in (324b) is really an instance of restitutive *back*. I suspect it may be possible to possible to derive the sense of reciprocal *back* from the denotation of restitutive *back* above, thereby treating it as a predicate of individuals rather than a predicate of events, but I must leave this issue for future research.

To conclude, the restitutive use of *back* appears to be compatible only with spatial uses of prepositions. As a result, we can use *back* as a test to determine whether certain words or constructions contain a spatial component to them. Taken together with the fact that *back* occurs quite freely with particles, including many so-called 'aspectual' particles or those in 'idiomatic' particle verbs, we find evidence that particles contribute their own, (metaphorical) spatial meanings to particle verbs.[64]

[64] In a blog post (http://lingcomm.blogspot.com/2011/11/non-question-uses-of-hell.html), Benjamin Bruening discusses several uses of *the hell* (also *the fuck/heck*), one of which he notes can occur to the left of a directional PP or particle. This suggests that *the hell* can also verify the presence of a spatial component particles, and it again indicates that at least some nontransparent particles have a spatial component: *Shut the hell up*; *YOU look it the hell up if you want to know the meaning*; and even the seemingly

3.2.4 Is the Argument of a Particle-verb Always a FIGURE?

Full prepositional phrases in which the preposition is used with a spatial sense contain a GROUND argument as an internal argument and a FIGURE argument as the external argument, as demonstrated in (325). The FIGURE argument may immediately precede the preposition, but it may also correspond to the verbal subject as well when it is the lowest nP above the PP, as indicated in (326).

(325) a. He wiped the dust$_{figure}$ off the table$_{ground}$.

b. * He wiped the table$_{ground}$ off the dust$_{figure}$.

(326) John$_{figure}$ fell off the table$_{ground}$.

I have been operating under the assumption that particles take as a FIGURE argument the lowest argument of a particle-verb construction, and that the GROUND argument is covert. This assumption is widely held, at least for 'resultative' particles for those who distinguish several semantic types of particles. There are a few instances, however, where it has been claimed that the sole overt argument of a particle is its GROUND argument. Svenonius (1994:Ch. 3, §5.4), for example, notes that when the particles *off* and *out* are used with certain verbs of removal, either the FIGURE or the GROUND argument may be overt.

(327) a. He cleaned/scrubbed/wiped {off} the dirt {off (the table)}.

b. He cleaned/scrubbed/wiped {off} the table {off}.

(328) a. He cleaned/cleared/swept {out} the dirt {out (of the garage)}.

b. He cleaned/cleared/swept {out} the garage {out}.

In a later article, Svenonius (2003) suggests that the lower argument in (327b) is, contra appearances, a FIGURE argument of the particle, stating "I believe that *off* in these constructions takes a Figure in any case, but that the flexible meaning of *off* in the context

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idiomatic *make out*, as shown in *I'm going to make the fuck out with you*. Like *back*, *the hell* does not seem to easily occur the unbounded uses of *away* (#*Hammer the hell/fuck away, if you want!*) or *on* (#*Play the hell on, if you want!*), but unlike *back*, *the hell* can occur with *around* (*Why do you let him boss you the fuck around?*) and *along* (*Sing the fuck along!*).

of cleaning allows the Figure to be an affected surface" (p. 442). Presumably, we could say something similar about *out* in (328b), noting instead that *out* is compatible with containers rather than surfaces, as the following examples show.

(329) a. * He cleaned/scrubbed/wiped {off} the garage {off}

b. * He cleaned/cleared/swept {out} the table {out}.

Unfortunately, Svenonius is not explicit about what the exact denotation of the particles *off* and *out* is in the instances above. Despite their somewhat 'completive' senses, they are certainly not just aspectual particles, otherwise we would not be able to capture the restriction if *off* to surfaces and *out* to containers. At the same time, if the present assumptions about the semantics of particle verbs are correct, we would need to relate the special meanings of *off* and *out* to a metaphorical extension of the particles' underlying spatial meanings. It is not obvious what this denotation would be, and I shall not attempt to develop one here.

Another possibility would be to assume that *off* and *out* in (327) and (328) are used in their usual sense, but their ability to take the apparent GROUND as a subject is because the nPs themselves are used metaphorically to indicate the contents contained in/on them. Consider the following example that does not involve a particle verb. Here, *a glass* is used to refer to the contents of a glass rather than the actual container.

(330) a. John had only one glass (of wine) before leaving.

b. John poured his glass (of wine) on Bill's head.

If the nPs in (327b) and (328b) are used in this same manner, such that *the table* and *the garage* refer to the contents contained on or in them, then they constitute the FIGURE of their respective particles rather than the GROUND.

Another particle Svenonius (2003:443) discusses which appears to allow a GROUND argument is *fill in*. This particle verb but differs from those above in not having a variant allowing a GROUND and FIGURE argument to occur together.

(331) a. I filled {in} the hole {in}.

b. * I filled clay$_{figure}$ in the hole$_{ground}$. (Svenonius 2003:443, modified)

(332) a. John filled {in} the form {in}.

b. * John filled the information$_{figure}$ in the form$_{ground}$.

Alternatively, if *in* is changed to *into*, both arguments may appear.

(333) a. John filled clayed into the hole.

b. John filled the information into the form.

Svenonius (2003) suggests that *fill in* has become an idiom, such that the lower nPs in (331a) and (332a) are actually FIGURE arguments of a particle *in* meaning 'full'. One potential problem for this account is that it cannot relate the sentences in (331) and (332) to the sentences below, which initially appear to differ only in having an overt FIGURE rather than an overt GROUND. In the sentences below, *in* could not mean 'full' if it is predicated of the overt argument, so they must involve a different use of *in* than the sentences in (331)-(332) if Svenonius is correct.

(334) a. John filled {in} the information$_{figure}$ {in}.

b. ? John filled {in} the clay$_{figure}$ {in}.

While distinguishing the two constructions might seem undesirable, there is some support for the claim that *in* exhibits a special meaning in the presence of *fill* when the apparent GROUND is overt. In the following examples using other verbs, this special meaning of *in* is not available despite the context being similar. Unlike *fill in*, these particle verbs do not allow the GROUND argument to occur without the FIGURE. This is predicted if *in* has a special meaning restricted to its occurrence with *fill*.

(335) a. John poured {in} the water$_{figure}$ / *the bucket$_{ground}$ {in}.

b. John carved {in} his name$_{figure}$ / *the tree$_{ground}$ {in}.

c. John tossed {in} the ball$_{figure}$ / *the box$_{ground}$ {in}.

Nonetheless, *color in*, *shade in*, and *stencil in* can all be used similarly to *fill in*, so the special meaning of *in* is not entirely restricted to *fill*.[65]

[65] The suggestion above that the apparent GROUND argument of *out* and *off* is used metaphorically to represent its contents does not extend easily to the class of *fill in* verbs. If *the hole* in (331a) refers to the contents of the

Even if the type of analysis Svenonius provides is correct, and English always take the lower nP as a FIGURE argument, it does not follow that other Germanic languages will behave likewise. Svenonius (2003) claims that OV Germanic and VO Germanic languages are distinct in whether they allow or disallow GROUND arguments to participate in particle-verb constructions. He claims that the Scandinavian languages pattern with English in disallowing them (assuming that *fill in* is not a counterexample), while the OV Germanic languages allow GROUND arguments to occur. I repeat his examples for German (336) and Dutch (337) below. The reader may find additional examples for Dutch and German in Blom (2005:135ff) and Los et al. (2012:72ff) (who use the term 'relator' particles) and other Germanic languages in Svenonius (2003).[66]

(336) a. Er lädt die Koffer ab
he loads the suitcases off
'He loads off the suitcases'

b. Er lädt den Gepäckwagen ab
he loads the baggage.cart off
'He unloads the baggage cart' (Svenonius 2003:431)

(337) a. Ik paste een nieuwe jas aan.
I fit a new jacket on
'I'm trying on a new jacket'

b. Jan kleedde zijn zoontje aan.
Jan clothed his son on
'Jan dressed his son' (Svenonius 2003:431)

Svenonius accounts for the supposed distinction between OV and VO languages concerning the appearance of overt GROUNDS with particle verb as follows. Prepositions can be

hole, it refers to empty space, or nothing. Clearly, it makes little sense to fill a hole with nothing. The only way for the proposal to extend to *fill in* verbs is if the nP metaphorically refers to the contents with which it will be filled, but this does not seem highly plausible. Unlike the examples in (330), where the container referred to its contents, an empty space cannot be used to describe its previous or possible future contents (e.g. **the mouse ate a hole*).

[66] Los et al. (2012:73), among others, note that when particles occur with their GROUND rather than their FIGURE argument in German (but not in Dutch), Case is determined by the particle/preposition. Whereas objects of particle verbs otherwise receive Accusative Case, objects of particle verbs with GROUND arguments receive either Accusative or Dative Case in German, depending on the particle/preposition.

broken down into (among others) a pP layer a PP layer, analogous to *v*P and VP. The FIGURE is introduced in pP, and the GROUND in PP. Prepositions in the VO Germanic languages must always project a pP layer, while this is not necessary in OV languages. When the pP layer is absent, the preposition is unable to assign Case to its complement (the GROUND), which must then raise to receive Case from the verb.

An alternative account of constructions like those discussed here is presented in McIntyre (2007), who calls these cases of 'Ground Promotion', similar to object promotion in passive constructions. In this account, the FIGURE argument has been suppressed in the relevant examples above, and the overt nP in question is the actual GROUND argument of the particle. Thus, the difference between the (a) and (b) sentences in (327) and (328), or the sentences in (331a) and (332a) on the one hand and (334) on the other hand, is only whether the FIGURE or GROUND argument has been suppressed. This is an obvious benefit of this approach, as these pairs are intuitively closely related semantically. It also saves us the trouble of developing distinct semantics denotations for the variants with the apparent GROUND arguments. Although McIntyre is not explicit in his analysis of Ground Promotion, given that the promoted GROUND behaves just like a normal particle-verb object, I assume that the FIGURE argument must be suppressed in the semantics so that it is not projected in the syntax. Under the assumption that FIGURE arguments merge into specifier positions of prepositions and GROUND arguments merge as complements of prepositions, a syntactically-present, covert FIGURE argument would block the GROUND argument from raising and appearing in the usual positions in which FIGURE arguments are found.

McIntyre's account suffers from one problem: if Ground Promotion is possible, why it is so rare? Most particle verbs do not alternate between a form containing an overt FIGURE and one containing and overt GROUND; for example, while we can say *put a hat on (one's head)*, we cannot say *put one's head on* with the meaning 'put something on one's head'. Further, if (327) and (328) are examples of Ground Promotion, then it appears to be that case that they involve the transparent, spatial uses of *off* and *out*. But the following examples involving what seems to be the same spatial use *off* show that it does not generally allow the

promotion of GROUND arguments. The same is true of *out*.

(338) a. John broke the handle$_{figure}$ off the door$_{ground}$.

b. John scared the kids$_{figure}$ off the roof$_{ground}$.

(339) a. John broke {off} the handle$_{figure}$ {off}.

b. John scared {off} the kids$_{figure}$ {off}.

(340) a. * John broke {off} the door$_{ground}$ {off}.

b. * John scared {off} the roof$_{ground}$ {off}.

These examples show that if Ground Promotion is possible in English, it is limited to a very small set of lexical items. I do not believe this is any more of a problem for the Ground Promotion account than for the type of account put forth by Svenonius, as both of them need to rely on the lexicon to limit the productivity of particles with these special uses. In the Ground Promotion, the lexicon restricts when the FIGURE can be suppressed and the GROUND promoted, while in Svenonius' account the lexicon specifies new meanings for these special uses of particles.

McIntyre's account also extends nicely to several other particles. McIntyre (2007) lists *through* in *run someone through (with a sword)* as an instance of Ground Promotion. *Through* is slightly different from the particles above because it only has a special meaning in the discontinuous order, a meaning McIntyre (2004:538) describes as have a more 'holistic' sense than the continuous order. In any case, though, it is intuitively clear that the person is the GROUND of *through* in this examples. The special meaning of the discontinuous order must be lexically specified alongside whatever specifies the particle as allowing Ground Promotion.[67]

Other particles that follow easily from this account are some uses of *over*, *off* and *by* (and probably others), as the sentence pairs below demonstrate. In (342) and (343), there is a slight meaning shift when the discontinuous order is found, but the nP appears to remain the semantic GROUND argument.

[67] For more discussion of *through*, see McIntyre (2004:538ff) and Cappelle (2005:409ff), and references therein.

(341) a. John ran (his car) over the dog.

b. John ran the dog over.

(342) a. John ripped something off Bill.

b. John ripped Bill off.

(343) a. John passed by me.

b. John passed me by.

If we are to adopt Svenonius account, each of the particles above must be assigned a novel denotation in which the lower nP argument is interpreted as its FIGURE, rather than GROUND, argument. While this may be possible, it has not been done explicitly, and it is not immediately obvious what such denotations would look like. In contrast, Ground Promotion (which Svenonius admits does occur in some languages) provides a relatively straightforward analysis of the semantics of these particle uses, and it also matches the intuition that the sentences pairs alternating with an overt FIGURE or an overt GROUND are related.

In this section, I examined several constructions in English which have been suggested to show that GROUND arguments may surface as the object of a particle verb. I examined two proposals of how to account for this class of constructions, concluding that treating the object as a type of promoted GROUND provides the most straightforward account. Although these particle verbs do not contain an overt FIGURE, they do not constitute counterevidence to the present claim that particles are predicates denoting spatial relations. Instead, they can be viewed as predicated of an implicit argument, which in many cases can occur overtly in place of the GROUND argument.

3.3 Conclusion

In this chapter, I have argued that English particles are predicates that denote concrete or abstract spatial relations between a (usually overt) FIGURE argument and a (usually covert) GROUND argument. I demonstrated that particles can be subdivided into subuses, each regularly occurring with distinct sets of verbs. I argued that particles that are sometimes believed

to be part of 'noncompositional' particle verbs and those which are called 'aspectual' systematically denote spatial relations, thereby rejecting the existence of 'noncompositional' particle verbs and 'aspectual' particles.

Though one must be willing to accept a certain degree of abstractness if one is to treat all particles as abstract spatial relations, there are many benefits in doing so. The present analysis otherwise straightforwardly accounts for the following.

(344) a. Particles have regularly occurring meanings rather than idiosyncratic meanings in each combination.

b. Particles can add 'unselected' arguments.

c. So-called 'aspectual' particles are often restricted to specific classes of verbs, exhibiting limited productivity unlike pure functional morphemes.

d. So-called 'aspectual' particles with apparently the same function are tied to specific verb classes (e.g. some instances of *off*, *out*, *up* have all be claimed to mark completion or perfectivity, yet they are not interchangeable).

e. So-called 'aspectual' particles and those in supposedly 'noncompositional' particle verbs behave the same way syntactically as other particles.

f. *Back*, which is compatible only with spatial P(P)s, is able to modify even 'aspectual' particles and those in 'idiomatic' combinations.

g. Modern English particles are derived solely from the class of spatial prepositions (e.g. *of* cannot be a particle)

Consider a likely alternative, in which particles are divided into three classes: (i) predicative, (ii) aspectual and (iii) those in idiomatic (noncompositional) verb+particle combinations. This type of claim generally treats many verb+particle combinations as idiomatic, failing to observe that there is, in fact, considerable regularity in the various meanings of particles in combination with various classes of verbs. The ability of particle verbs to add arguments not selected by the base verb can only be treated as a lexical property of each combination, rather than the single generalization made herein that all particles take an external argument. 'Aspectual' particles, despite supposedly performing only a grammatical

function, must be treated on par with idiomatic verb+particle combinations to prevent them from being productive and to prevent them from being interchangeable with other 'aspectual' particles that supposedly mark the same function. In the present analysis, at least some of this restricted behavior can be explained by appealing to compatibility with specific spatial relations. The lack of large syntactic differences between the various types of particles is surprising, especially since the functional 'aspectual' particles behave similarly to the more meaningful particles. This is less surprising in the present account, as these 'aspectual' particles retain a type of abstract spatial meaning from which any aspectual quality is derived. The ability of particles, including 'aspectual' ones and those in 'idiomatic' combinations, to be modified by the spatial-predicate-modifier *back* can only be treated as a consequence of the history of the words, but this still lacks an explanation of what exactly *back* is modifying in the present-day use of such particles. Only the observation that English particles are derived from spatial prepositions remains relatively unproblematic for this alternative account under the assumption that it is easy for spatial prepositions to grammaticalize over time. As should be evident, although the reader may be apprehensive to accepting the semantic denotations of the type proposed herein, the trade-off in doing so is that we arrive at greater explanatory power.

Chapter 4

SYNTAX OF SIMPLEX PARTICLE-VERB CONSTRUCTIONS

The set of structural accounts of particle-verb constructions which have been put forth since at least Chomsky (1957) is frequently divided into those in which particles head their own phrases and those in which particles form a type of complex head together with the verb. Rather than choose between these possibilities, the present chapter pursues a structural account of the particle-verb construction which takes both options to be correct, with the central claim that English particles are optionally projecting heads. In doing so, we are able to overcome the problems that arise for accounts which take particles to always project phrases or to never project phrases.

In order to aid the reader as they work through the present account, I provide a reference below containing the most central aspects of the present account. These are presented in more detail and defended below. As a reminder to the reader, I refer to the order in which the verb and particle are adjacent as the continuous order, and the order in which they are separated by an argument as the discontinuous order.

(345) a. English particles are optionally projecting heads.

b. The topmost projection of a particle (Prt or PrtP) merges with V in the particle-verb construction.

c. Nonprojecting particles:

i. form a complex head with the verb, taking an argument as a syntactic complement.

ii. remain *in situ*.

iii. allow for the derivation of both the continuous and discontinuous orders.

d. Projecting particles:
   i. head a small clause taking an external argument in their specifier position.
   ii. may move in certain constructions, if transparent.
   iii. allow for the derivation of the discontinuous order only.

e. Overt raising of 'object' nPs above VP for Case
   i. is optional for normal objects.
   ii. is preferred or necessary for ECM subjects of small clauses, depending on speaker.

4.1 Structure of Particle-verb Constructions

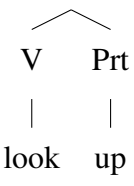
4.1.1 Overview

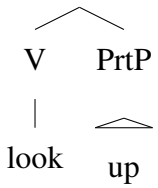
Let us begin the discussion of the structure of particle-verb constructions by examining the word-order alternation found in simple, transitive particle-verb constructions in English. The continuous and discontinuous orders are exemplified in (346a) and (346b), respectively.

(346) a. John looked up the information.
   b. John looked the information up.

At the heart of the present analysis is the claim that particles are syntactic heads which may but need not project phrasal structure, something which I assume is specified in the lexicon. This is not a novel idea, and many accounts of particle verbs have related the word order alternation of the particle-verb construction in English to the projection either of any phrasal material or of functional material; such proposals have been made in different forms, including proposals in den Dikken (1995), Neeleman (1994, 2002), Neeleman & Weerman (1999), Zeller (2001), Toivonen (2003), Elenbaas (2007), Basilico (2008), Kremers (2009), and Los et al. (2012). The present account differs from several of these in allowing both orders to be derived when a particle does not project, while only allowing the discontinuous when a particle projects a phrase. This will be discussed in more detail below.

Regardless whether the particle projects or not, I claim that it(s projection) merges directly with a categorized verbal head. When it does not project, the combination of the verb and particle form a syntactic head; in $\bar{X}$-Theory, this means that the resulting node has the status of X^0 rather than $\bar{X}$. For clarity of exposition, I label nodes formed from the merger of two heads X^+ to distinguish them from minimal categorized heads, for which I use the label X or X^0. When a particle projects a phrase, the node immediately dominating the verb and particle-headed phrase is an $\bar{X}$ node.

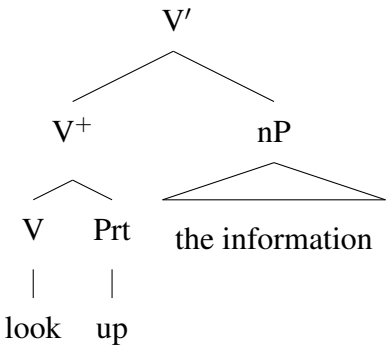
(347) a. 

b. 

Though I do not assume that particles form a distinct lexical class, I use the labels Prt and PrtP when discussing or illustrating their syntactic structure. This allows us to capture generalizations that exist among prepositional particles and particles belonging to other syntactic categories, including adjectival, nominal and verbal particles.

Consider first the case of a nonprojecting particle, with the underlying structure in (347a). Once the verb and particle are merged together, the resulting complex merges with an argument, which behaves as the complement of the complex head. Crucially, the argument's linear order after the particle is what we would expect of a complement. Were this argument treated as a specifier, merging into the specifier position of VP rather than merging with V^+, we would expect the argument to always precede the particle, unless the particle is able to raise left of this position, which I argue in §4.4 does not occur. More specifically, I claim that nonprojecting particles remain *in situ*. The particle's θ-role percolates to V^+ along with any internal θ-role of V^0, from where it is/they are assigned to/checked by the complement of V^+.

(348)



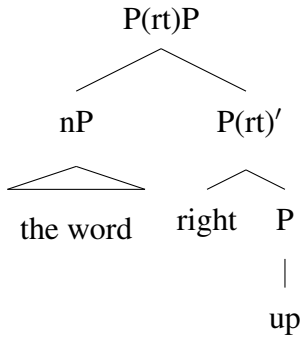
From this position, the object of the particle-verb construction raises to a Case position above VP either overtly or covertly. The claim that objects and (some) ECM subject are able to raise overtly or covertly is adopted from Lasnik (1999, 2001, 2002, 2003), and some of his argument will be repeated in §5.1, insofar as they relate to complex particle-verb constructions. If the complement nP of a complex V^+ does not raise overtly, it surfaces to the right of the particle. In contrast, if this nP raises overtly, it surfaces to the left of the particle. Thus, the nonprojecting structure allows us to derive either the continuous or discontinuous word orders. This optionality will prove crucial in my analysis of complex particle-verb constructions, and it also makes several other interesting predictions which are discussed throughout.

Although we can derive the discontinuous order form the nonprojecting structure, we must still allow the particle to project. One reason for this is that particles can generally be modified by *right*, which requires the particle to project a phrase (*right*-modification is discussed in §4.6.2.1). Other reasons will become apparent throughout (e.g. they may sometimes undergo movements typical of XPs, discussed in §4.3.2 and §4.5).

I claim that a projecting particle projects a small-clause structure, unless it is a nominal particle, in which case it simply projects a phrase. The subject of the small clause is merged into the specifier position PrtP, the outermost layer of the particle-headed SC, where it receives a θ-role. This argument must raise for Case by LF. If the argument receives Nominative Case, raising is overt; if the argument receives Accusative Case, it is generally not deducible from the surface order alone whether overt raising has occurred, but in §5 we will

see that overt raising from SCs seems to generally occur. As for the particle, it heads the innermost XP, which is identified by the lexical category of the particle.[1] A projecting particle may also contain a *right* modifier (see §4.6.2.1), which I assume is adjoined to P̄rt, as in the following structure.

(349)



Regarding the structure of the verb phrase, I assume that verbal projections include a lower VP layer, an upper *v*P layer introducing the subject of a transitive particle-verb construction, and any number of functional projections between the two, including a functional projection in which Accusative Case is assigned. I assume that the verbal head raises from V to *v*; however, even when the verb and particle form complex head, only the minimal verbal head of the complex moves, stranding the particle. Head movement itself will be argued to occur by means of the Conflation mechanism described in Hale & Keyser (2002) and Harley (2004), which we be discussed in greater detail in §4.1.1.2.

4.1.1.1 θ-Roles

I claimed above that the argument of a nonprojecting particle verb may receive a complex (i.e. multiple) θ-roles. In doing so, I reject the Theta-Criterion; instead, I adopt the movement theory of control first described in Hornstein (1999, 2001), in which (copies of) arguments may merge into multiple θ-positions.[2] Only the highest copy will be pronounced

[1] It must be noted that although I have made reference to the outermost and innermost layers of projecting particles in this paragraph, I present them as if there were only a single layer in the remainder of this dissertation. I mention them here for readers who adopt the view that prepositions consist of multiple layers (e.g. PP and pP) or who assume that small-clauses contain a separate layer introducing the SC's external argument.

[2] Ramchand & Svenonius (2002) and Ramchand (2008) also reject the Theta Criterion in their treatment of particle-verb constructions and resultatives.

overtly.[3] I demonstrate below how θ-assignment/checking proceeds for the various types of particle-verb constructions.

It was noted above that when the particle projects, an nP merges into the specifier position of PrtP, where it receives a θ-role (usually FIGURE) from the particle.[4] As the nP raises (via copying) towards its Case position, it may receive/check additional θ-roles. Thus, in *John tossed the ball up*, *the ball* receives the role of FIGURE in SpecPrtP and THEME from the verb in SpecVP. Likewise, in the unaccusative construction *The ball rolled away*, *the ball* receives θ-roles in both SpecPrtP and SpecVP. Note, however, that just as there are 'unselected' arguments in canonical resultative constructions, there are also 'unselected' arguments in particle-verb constructions in which the verb does not provide the argument with a θ-role. For example, in *John signed his rights away*, *his rights* do not receive a θ-role from the verb as they move through SpecVP to their Case position.[5]

One might imagine some constructions in which the particle does not assign a θ-role to any nP while a verb does. For example, one might believe that my treatment of 'completive' *up* in §3.2.2.3.11 is misguided and that this use of *up* actually modifies the verb. If this is the case, then the verb alone assigns a θ-role to the lower nP. The effect on my syntactic proposal would be minimal; the nP argument would simply be externally-merged in SpecVP rather than SpecPrtP, yielding no difference in word order or meaning (but see fn. 5). Likewise, a nonprojecting particle-verb construction could still take an argument as its complement, with the verb alone assigning it a θ-role.

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[3] If we follow Hornstein (2001:Ch. 5) and reduce Binding Theory to a theory of movement, then chains can extend across Case positions, and multiple copies can be pronounced.

[4] See §3.2.4 for exceptions where the particle apparently assigns a GROUND θ-role. Also see §3.2.2.4 for discussion of covert FIGURE arguments with intransitive particle-verb constructions.

[5] Given what I have claimed here, one might wonder whether it is necessary to assume that the FIGURE argument first merges in SpecPrtP, rather than simply assuming that all nP arguments of particle verbs are projected in SpecVP. θ-roles could be assigned through percolation, as in the case of particle-verb constructions with non-projecting particles. In terms of word order, it would make no difference if this was claimed; however, it is crucial for the present analysis that the double-object construction involve a small clause in which the external (POSSESSOR) argument originates, and the same must be true of the null-BE-headed small clause in the *make out [John a liar]* construction (see Chapter 5). Furthermore, the analysis of the variability of judgments regarding subextraction from FIGURE arguments of projecting particles in §5.6 suggests that FIGURE arguments originate in the small clause PrtP.

4.1.1.2 Complex Heads, Phrase Structure and Head Movement

Despite treating the combination of V and Prt in the continuous structure as a complex head for syntactic purposes (e.g. they can take a complement), the present account claims that they are two distinct syntactic and phonological heads. This is, in fact, an unavoidable conclusion. Both the verb and particle bear word-level stress in both the continuous and discontinuous orders, indicating that PF recognizes both V and Prt as heads. In terms of head movement, we must accept that the lower V^0, or the phonological content thereof, moves separately from the particle head and must therefore be treated as a distinct head. Evidence for this is found whenever a verb raises above negation or the surface subject, such as in V2 contexts in both VO and OV Germanic languages. In such contexts, the particle never raises with the verb. This is true even when the particle precedes the object—indicative of the nonprojecting structure in the present account—as the following Early Modern English example from the King James Version of the Bible demonstrates. The order in which the particle remains after negation in V2 contexts is well-attested, while the particle is unattested in pre-negation position (see §4.4 for more discussion).

(350) a. Lift not up your horn on high... (KJV Psalm 75:5)

b. * Go up not... (unattested order)

Further, if one assumes affixation of tense and aspect morphemes occurs in (or after) the syntax (contra the lexicalist hypothesis), the placement of verbal suffixes such as *-ed* becomes problematic (e.g. *looked up*, not **look upped*). If the verb and particle were to move as a single head, it is unclear why the suffix should not should adjoin to the right of particle; however, all VO and OV Germanic languages place tense/aspect morphology between the particle and the verb. In contrast, in the case of 'inseparable prefix' verbs in OV languages, tense/aspect morphology ignores their internal structure and attaches to the front of the entire complex.

One could attempt to overcome the affixation problem by proposing the existence of some mechanism which attaches inflection onto the verbal portion of the complex head rather than the particle, but even if such a solution is able to be motivated, it is not compatible

with the present analysis regardless. Recall that in the present analysis, the finite verb always raises to at least *v*, stranding the particle. Even when the verb and particle merge to form V^+ in the nonprojecting structure, the object may overtly raise across the particle for Case, creating the discontinuous order on the surface. The ability to create the discontinuous order from the nonprojecting structure will be crucial in the discussion of the complex particle-verb constructions, which means that the present account must allow the verb to separate from the particle even when the initially form a complex head. As a result, my account cannot rely on special rules of affixation to place tense and agreement morphology on the verb rather than the particle, because even the object can intervene between the verb and a nonprojecting particle.

There are actually two issues which must be resolved if we are to accept the existence of syntactically complex heads and the ability to strand part of a complex head while the other portion raises. First, our assumptions about syntax and linearization must allow for the formation of complex heads which can take complements (crucially, to the right in English). Second, we must determine the nature of the actual head-movement mechanism.

4.1.1.2.1 Phrase Structure

Consider how $\bar{X}$-Theory can accommodate merging the particle verb's object as the complement of $[_{V^+}$ V Prt] rather than treating it as a specifier or adjunct.[6] The crux of the problem is that if the verb and particle are both heads, then the verb must presumably be projecting *in some sense* for the combination of $[_{V^+}$ V Prt] to also be treated as a verbal head. $\bar{X}$-Theory, however, does not traditionally contain a rule allowing two heads to merge together; rather, it is limited to the following three phrase structure rules.

(351) a. $XP \rightarrow \bar{X}$ (YP) (YP = specifier)

b. $\bar{X} \rightarrow \bar{X}$ YP (YP = adjunct)

c. $\bar{X} \rightarrow X$ (YP) (YP = complement)

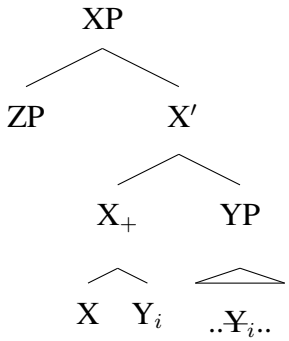
[6] See Neeleman (1994:§5.2.2) for an alternative defense of complex heads in $\bar{X}$-Theory.

If the theory is limited to these three phrase-structure rules only, there is no way to generate the structure I have proposed. For that, we need the following rule.

(352) $X \rightarrow X\ Y$

Although this rule is not traditionally part of $\bar{X}$-Theory, the resulting structure has frequently been claimed to arise as a result of syntactic head movement, with one head adjoining to another. Now, if both head-to-head movement and the result of the merger of two heads result in the same structure, we might expect them to behave in a similar manner syntactically and at PF, which I assume ultimately maps syntactic structure to linear order.[7] Assuming they do, then the claim that [$_{V+}$ V Prt] can take a complement should not be controversial at all. Consider the structure in (353), representing the result of syntactic head-to-head movement. Of importance is that (in accounts assuming this type of adjunction) the complement of X prior to head adjunction of Y, YP in this case, remains the complement of the complex X^+. If the language typically linearizes complements of heads to the right of their sister, then YP in the structure below will be linearized to the right of X^+.

(353)

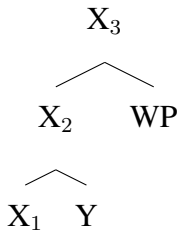


Ultimately, I do not adopt an approach involving syntactic head movement; however, accepting that many others do take head movement to be syntactic, I wish to highlight that the syntactic head movement depicted in (353) violates Chomsky's (1993) Extension Condition (see also Chomsky 2000:137), and it also creates complications with respect to the c-command requirement on binding traces. The 'head-movement' account to be adopted below avoids both of these complications.

[7] I nonetheless represent linear order in the syntactic trees and continue to discuss order as if it were syntactic. I do this for expository purposes.

Some might question my use of $\bar{X}$-Theory rather than Bare Phrase Structure (BPS), which is favored by many recent syntactic approaches working within the Minimalist Program. I do not adopt BPS here in part because it is unclear how to implement the idea of a complex head composed of two syntactic heads. Because the levels corresponding to XP, $\bar{X}$ and X are determined in a purely relational sense in BPS, there can be only one truly 'minimal' head. Specifically, given the structure in (354), X_1 and Y are both minimal, while X_2 is no longer minimal. Complements in this framework are sisters of minimal heads, but since the sister of WP is not minimal, WP cannot be treated as its complement. Presumably, WP—which receives a θ-role from the complex particle verb—would be interpreted as a specifier at PF, where it would be linearized to the left of the particle.

(354)



It is due to this problem that I adopt $\bar{X}$-Theory over BPS.

4.1.1.2.2 Head Movement

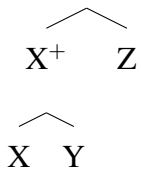
Consider now how movement of V without Prt can proceed from the underlying continuous structure. The obvious solution to this issue, which has been proposed in many accounts of particle-verb constructions involving a complex head (either underlyingly or as the result of overt incorporation), is to say that the verb or (less commonly) particle excorporates from the complex head. But there are both syntactic and conceptual problems for this claim which will lead me to reject this solution.

The excorporation mechanism is generally attributed to Roberts (1991). In that article, Roberts provides argumentation which would allow excorporation of either Y or the lower X from the structure below.

(355) X^+

It is this latter type which is more commonly adopted in accounts of particle verbs which make use of excorporation, generally with little or no discussion of how it works within the theory (in contrast, Neeleman 1994 excorporates the particle, which would correspond to Y in the structure above). In accounts where verb and particle first raise together as a complex, followed by excorporation of the verb alone, both types of excorporation would in fact be necessary, provided one assumes head movement involves adjunction rather than substitution (e.g. Johnson 1991; Koizumi 1993; Radford 1997). In such instances, the following partial, intermediate structure arises, where X corresponds to the verbal head and Y to the particle.

(356) Z^+



In fact, in more recent work, Roberts (2010:207) explicitly rules out excorporation of the lower X in (355) as a violation of the A-over-A Principle, presumably under the assumption that any features of the lower X which a probe could attract would percolate up to the higher X^+, and thus the higher node would be targeted for movement. Excorporation of Y remain possible, provided X (and Z in (356)) lacked the relevant feature which Y bore.

Another problem for those accounts in which the intermediate structure in (356) arises is that even if extraction of X from this structure can be made compatible with a syntactic theory, it is unclear what would motivate a particle to raise with the verb. If the verb must excorporate at some point in the derivation—the example in (350a) above and additional examples in §4.4 prove that it would need to—it would be more economical to leave the particle *in situ* from the beginning. Furthermore, it does not seem likely that the particle

has some uninterpretable feature requiring it to raise as part of a complex.[8] Prepositions are not typically assumed to have uninterpretable features checked outside their own domain, and to my knowledge, prepositions in English and Germanic do not take inflectional suffixes which would require them to raise to some Agreement or Case projection.

In the present account, excorporation of the verb from the complex head would require the type of excorporation Roberts (2010) considers a violation of the A-over-A Principle: excorporation of X from the structure in (355). We might argue that raising X out of (355), rather than raising X^{+}, is not actually an A-over-A violation, but is in fact necessary to ensure the movement is economical—that movement targets the smallest node possible while ensuring phonological well-formedness or Full Interpretation. The A-over-A condition originally intended to prevent the raising an NP out of the specifier position of a more inclusive NP; i.e., raising X of type A out of a larger Y of type A, but where X and Y are distinct. In contrast, X and X^{+} in (355) are arguably nondistinct, since X^{+} is simply an extension of X. If the A-over-A condition only holds when neither A is a projection of the other, then it should not rule out extraction of X from the structure above. Turning to economy, consider that English verbs are commonly assumed to raise to at least little *v*. This movement is presumably triggered for phonological reasons or the need to check some feature. Now, given that V moves alone in a simple sentence and is able to satisfy the needs of its probe, it is probable that the verb's (phonological or syntactic) features alone are required to move in a particle-verb construction. While movement of either V^{+} or V^{0} would satisfy the probe's needs, it would be less economical to move V^{+}, and thus this option is ruled out. As a result, the minimal verbal head of a complex verb+particle head will raise alone, stranding the particle. For this to work, of course, the probe must look into V^{+} even after detecting the relevant feature at V^{+}, which might itself be considered inefficient. Alternatively, one might argue that economy conditions are irrelevant; rather, the relevant feature of V^{0} simply does

[8] See Koizumi (1993:75) for a proposal that particles have a feature to check in a higher projection related to the expression of an 'end point, goal, or result'. Optionality of movement is then due to whether the relevant feature is strong or weak. Why only some intransitive prepositions should be able to bare the weak feature is not clear, nor is it clear why the feature should never result in any overt marking on the particle in any Germanic language. This also fails to account for the behavior of adjectival, nominal or verbal particles.

not percolate up to V^+ at all, so only V^0 can be targeted for movement. This is the approach taken in Groos (1989) to explain why V^0 and not V^+ raises under V2 in Dutch.

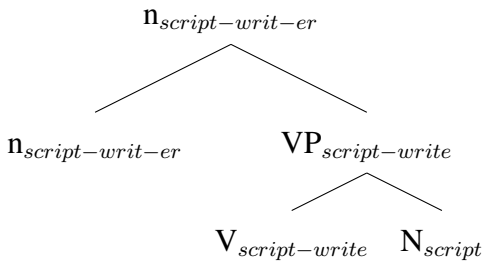
Although I have suggested how we might be able to derive excorporation of the verb from a structure like that in (355), there is an alternative proposal that derives the intended result in a much more natural way. The account of head movement found in Hale & Keyser (2002) and Harley (2004) can be implemented in a way that allows one (and only one) of the heads of a complex head to undergo a type of head movement without pied-piping the second half. I also show that this is possible only when two heads are merged without either head having adjoined to the other (i.e. only when two heads externally merge together).

Conflation was originally proposed as an operation on labels in the framework of Bare Phrase Structure. It has the effect of conflating the label of a head X with the label of a projection YP when X merges with YP, where a label consists of the phonological features of the head of the phrase referred to as its 'p-signature'. Conflation does not always take place when a head merges with a maximal projection; rather, it occurs only when the head merging into the structure contains a 'defective' p-signature, which is the case when the p-signature is empty or when it is an affix. Hale & Keyser (2002) claim that the semantic and syntactic features, forming the 's-signature', are unaffected by Conflation, which would account for the general lack of semantic effects found in constructions where the head has 'moved'. I assume that p-signatures resulting from the combination of more than one p-signature maintain at least a minimal amount of information about the distinct parts, allowing primary stress to be appropriately placed (e.g. not on prefixes) and ensuring that irregular verbs like *do* remain irregular even when they combine with affixes (e.g. *outdo* becomes *outdid* and not *outdoed*).

To exemplify Conflation, consider Harley's derivation of the synthetic compound *script-writer* below. Harley claims that in synthetic compounds, the p-signature of the verbal head is defective, which she indicates with the feature [+affix]. When the verb *write* is merged with the noun *script* (with labels [write] and [script], respectively), Conflation occurs because in this case the p-signature [write] bears the feature [+affix] (Harley assumes lexical roots can generally be assigned this feature when they enter the numeration). The p-signature

of the complement of *write* is copied into the p-signature of *script*, yielding a combined p-signature [script-write]. This merges with *-er*, also defective, Conflating to form *script-writer*. Harley includes the traditional category labels together with the p-signature—the latter being the actual label—for ease of exposition, and I will do likewise.

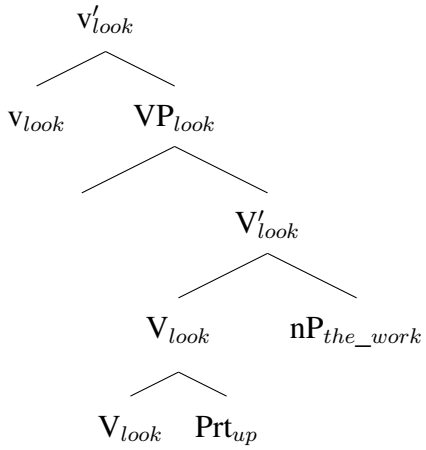
(357) (Harley 2004)



When Conflation occurs, the lower p-signature is deleted, its phonological contents having been copied into the higher p-signature; thus, a p-signature is pronounced only once. If Conflation does not occur (because the p-signature of the head merging into the structure is not defective), the lower p-signature is neither copied nor deleted, and it is pronounced within the phrase in which it remains. From this it follows that head movement—which is simply Conflation of a p-signature into a higher p-signature—is a strictly local process.

Now, let us consider how Conflation applies to particle-verb constructions. In finite clauses, I assume neither the verbal nor the particle heads have defective p-signatures; thus, when the verb and particle first merge, the particle head cannot Conflate with the verbal head, and the latter merely sends its p-signature up to V^{+}. The verb's p-signature continues to transmit upward in the manner it normally would in any finite construction, Conflating with heads of functional projections (with defective p-signatures) along the way.

(358)



If Conflation is the process by which head movement occurs, then 'incorporation' of the particle into the verb would be derived via Conflation, so long as one claims the particle heads the complement of the verb (and 'incorporation' accounts always do so, as far as I am aware).[9] If a particle were to first 'incorporate' into the verb, the verbal head would be unable to raise without the particle, as the p-signature of the verbal head would include the p-signature of the particle. Since the p-signature is little more than phonological information, no syntactic feature further up the tree would be able to split them up. Note that this then explains why excorporation after movement of a head (i.e. Conflation) is not possible (the p-signature is essentially 'fixed' upon Conflation), while excorporation of a verbal head from a verb+particle complex in which no incorporation (i.e. Conflation) has yet occurred is possible (since the p-signatures never merged).

4.1.2 Factors Influencing Projection/Word Order

One question I do not examine in depth in this dissertation is what determines whether a particle will appear in the continuous or discontinuous orders; however, for the sake of completeness, I offer a brief overview of various factors which have been claimed to influence which word order is used in the particle-verb construction. I assume that the interaction of these and other factors is ultimately responsible for determining whether a particle projects or not and whether an object raises overtly or covertly.

[9] Hale & Keyser (2002) allow that syntactic head movement of the type in Baker (1988), rather than Conflation, may be involved in Noun Incorporation of the type that occurs out of a specifier position.

There are some factors which are purely syntactic. For example, if a particle is to be modified by a word like *right*, or if is it to undergo certain transformations which only XPs may participate in (e.g. fronting), then the particle must project. Factors which are less clearly purely syntactic and may have an phonological aspect include the strong preference for nPs with post-N modifiers and otherwise heavy nPs to follow particles, the inability of CP arguments to precede a particle, and the requirement that unstressed object pronouns precede particles. The inability for the particle to appear in the continuous order in coordinations or gapping structures may be tied in to prosody, with the particle needing to 'lean on' the verb in a sense (e.g. Svenonius 1994:Ch. 3, §3.5; see also §4.3.3.1 below). Information Structure has long been noted to play a role, with speakers preferring to place nP arguments containing 'new' or contrasted information in post-particle position while preferring those with 'given' information in pre-particle position (e.g. Bolinger 1971; Fraser 1976; Svenonius 1996a; Dehé 2002). Processing considerations favoring the avoidance of ambiguity likely play a role in the dispreference for *ing*-nominalizations occurring as objects in the discontinuous order (see §4.6.1.3). It also seems to be the case that not all particle verb allow both orders equally; for example, while *I called John up* and *I called up John* are relatively equivalent in terms of their felicitousness, *I shut John up* seems much better than *I shut up John*, though even this order seems grammatical. Other factors and more detailed discussion may be found in Gries (2002) and Dehé (2002).

Throughout the rest of this dissertation, the word order is presented as the interplay of two syntactic options: projection/nonprojection of the particle and overt/covert object raising. What is ultimately responsible for choice among these options, however, should be understood as the interaction of various syntactic and nonsyntactic factors like those listed above.

4.2 Are Particles Resultatives?

Before continuing with a defense of the proposed structure, I wish to compare particle-verb constructions with resultative constructions. The structure of projecting particle-verb

constructions adopted here, with the particle heading a SC-complement of a verb, is frequently claimed to be found in resultative constructions as well. Additionally, in Chapter 3, I argued that particles are predicated of the lowest nP in the particle-verb construction, often comparing them to resultative secondary predicates. The literature occasionally treats particle-verb constructions as a type of resultative construction, and it is widely accepted by proponents of other accounts as well that at least some particle-verb constructions are resultative. It is, therefore, worthwhile to consider the relationship between particle-verb constructions and resultatives, given that the two constructions exhibit syntactic differences and particle-verb constructions do not always match the semantic properties often associated with resultative constructions. In this section, I argue that most particle-verb constructions could be considered a type of resultative construction, depending on one's definition of resultative, but I also show that there are some particle verbs that can only rather tenuously be considered resultative.

This section will also explain how particle-verb constructions come to receive the appropriate interpretation in both their projecting and non-projecting forms, and it will also serve to explain how we can derive the intended interpretation of constructions involving both a particle and (i) an adjectival resultative secondary predicate or (ii) a double-object construction. These latter two points, however, will be discussed in §5 when the complex constructions are introduced.

4.2.1 Similarities with Resultatives

Let us first consider how particle-verb constructions are similar to canonical resultatives. What I assume to be a canonical resultative is a construction composed of two subevents, the initial subevent corresponding to the verb in the main clause and the second subevent corresponding to the secondary predicate of the category AP or PP. The constructions are transitive and telic, with the secondary predicate indicating the endstate of a change caused by the initial subevent. Some typical examples of resultative constructions are provided below.

(359) a. John hammered the metal flat.

b. John drank the pub dry.

c. John sang himself hoarse.

d. John shot Bill dead.

e. John shot Bill to death.

Another crucial property of resultative constructions is the so-called Direct Object Restriction, which says that the underlying object of the constructions is introduced by a resultative secondary predicate. It may or may not be interpreted as an argument of the verb as well, and in the latter case the object is referred to as an 'unselected' argument.

All of the properties above appear to be present in at least some particle-verb constructions, including the following examples.

(360) a. John tossed the ball up.

b. John broke the handle off.

c. The bartender kicked the drunkard out.

Each sentence above consists of two subevents in which the first subevent causes the second subevent, the latter denoting the endstate of the object; the constructions are all telic (e.g. they can be modified by *in* α *time*); and the indirect object is introduced by the particle in all instances and arguably receives a θ-role from the verb in each example as well. A further similarity is that the relation between the resultative head in (359a)-(359d) or particle in (360) and its external argument can be paraphrased with the use of a copula (e.g. *the metal is flat*, *the ball is up*).

There are additional syntactic similarities between the distribution of resultative secondary predicates and particles. In terms of word order, they appear to occupy the verb's complement position and exhibit some adjacency effects. For example, Neeleman & Weerman (1993a) indicate that Dutch particles and resultative predicates must both surface adjacent to a finite verb when not in V2 position, unlike other elements in the 'Mittelfeld', which

lack a fixed order.

(361) a. dat Jan het meisje {*op} vaak {op}-merkte.
that Jan the girl {*up} often {up}-noticed

b. dat Jan de deur {*groen} vaak {groen} verfde.
that Jan the door {*green} often {green} painted
(Neeleman & Weerman 1993a:436, modified)

In English, both particles and resultative predicates may be separated from the verb by the same set of limited elements: an nP argument or a modifier of the secondary predicate. Other types of modifiers may not intervene.

(362) a. John hammered the metal completely/*yesterday flat.

b. John broke the handle completely/*yesterday off.

One final piece of evidence in favor of treating particles as a type of resultative is the existence of adjectival particles with clearly resultative meanings comparable to their non-particle counterparts in (359). In English, the set of adjectival particles includes *free*, *open*, *short* and several others.[10] Like prepositional particles, they may precede or follow the construction's object. In the present account, these adjectives differ from other resultative secondary predicates only in that they need not project phrases.[11]

(363) a. John set {free} the slaves {free}.

b. John cut {open} the watermelon {open}.

c. John cut {short} the meeting {short}.

Similar overlap between adjectival particles and resultatives is found in other languages as well. In Norwegian, the color *blå* 'blue' may function like a particle and precede or follow the object, while another color, *fiolett* 'violet', must follow the object. Nonetheless, both have resultative interpretations in the constructions below.

[10] For a proposal as to why these specific adjectives behave as particles, see Elenbaas (2007:93f), Los et al. (2012:135f) and references therein.

[11] I presume that the dearth of adjectival particles is because adjectives have clear meanings that cannot be easily bleached or used metaphorically. On the other hand, spatial prepositions are more open to metaphorical uses and thus more prone to undergoing grammaticalization processes.

(364) a. Vi måla {blå} bilen {blå}
we painted {blue} car.the {blue}
'We painted the car blue.'

b. Vi måla {*fiolett} bilen {fiolett}
we painted {*violet} car.the {violet}
'We painted the car violet.' (Åfarli 1985:84)

4.2.2 Differences with Resultatives

We see, therefore, that there are a number of reasons to think that particles are a type of resultative secondary predicate. But despite these similarities, there are also reasons to doubt whether particles should be conflated with resultatives. First, it is clear that particle-verb constructions and canonical resultative constructions are not syntactically identical. The examples below show, respectively, that (i) particles in some VO Germanic languages may precede the particle verb's object, while non-particle resultative heads must follow it, (ii) in Verb Raising constructions in Dutch, particles but not resultative secondary predicates may 'raise' with the verb, and (iii) particles but not resultative heads may appear after *aan het* in the Dutch *aan het*+INF construction.

(365) a. John hammered {*flat} the metal {flat}.

b. John broke {off} the handle {off}.

(366) a. dat Jan de informatie {op} wilde {op} zoeken
that John the information up wanted up search
'that John wanted to look up the information'

b. dat Jan zijn fiets {oranje} wilde {*oranje} verven
that John his bike orange wanted orange paint
'that John wanted to paint his bike orange.' (Los et al. 2012:61, adapted)

(367) a. Jan is de informatie {op} aan het {op} zoeken
John is the information up at the up search
'John is looking up the information'

b. Jan is zijn fiets {oranje} aan het {*oranje} verven
John is his bike orange at the orange paint
'John is painting his bike orange.' (Los et al. 2012:61, adapted)

Although data like that above shows that particle-verb constructions and canonical resultative constructions in English and Dutch are syntactically distinct to some extent, it is still possible that particle-verb constructions are a subtype of resultative construction. In the present account, the syntactic differences above follow from the ability of particles to merge with verbs without projecting, whereas canonical resultative secondary predicates in English must project. It is not necessary, however, to claim that resultative secondary predicates in general must project; Williams (2008, to appear), for example, claims that languages may have phrasal resultatives, like the canonical resultatives in English, or nonphrasal, like resultatives in Mandarin. The present claim is that particles alternate between these two types.

Even if we accept that the syntactic differences in the examples above are not sufficient in denying resultative status to particle-verb constructions, there are other syntactic and semantic differences which question their inclusion in the category. I am not referring in general to the so-called 'idiomatic' and 'aspectual' particles which are often contrasted with 'resultative' particles; I argued in Chapter 3 that both 'aspectual' and 'idiomatic' particles are predicates denoting a(n often metaphorical) PATH which could be considered a type of resultative subevent. I am instead referring to the fact that particles are not always transitive, not always causative, not always telic, and do not always lead to a change of state of the argument predicated over. These were properties I understand to be commonly treated as the defining characteristics of what I have been calling 'canonical' resultatives. The properties are present in (359) and arguably in (360) as well, but they are not all present in the particle-verb constructions below. Example (368a) is arguably not causative in its most likely interpretation (Stephen Hawking being wheelchair-bound), (368b) is neither transitive nor causative, and (368c) is not causative, transitive, or telic, and the lowest nP does not appear to undergo a change of state. These examples clearly show that particle-verb constructions are not all canonical resultatives.

(368) a. The event's host walked/saw Stephen Hawking out.

b. The candle burned out.

c. The band played on.

Despite these differences, however, the particles otherwise behave like the particles in (360). What needs to be determined, then, is why particles exhibiting the general properties of canonical resultatives and those that do not exhibit those properties behave in similar ways, and in what ways particle-verb constructions are similar to resultative constructions.

4.2.3 The Solution

One possible solution is to adopt a more general definition of 'resultative', such as that implicitly found in Goldberg & Jackendoff (2004). Their description of resultatives includes those which are intransitive, noncausative, atelic, and/or do not require the lower nP to undergo a change of state, but also allow them to undergo a change of location (i.e. both property- and path-denoting predicates may function as resultative secondary predicates). The following examples exhibit some of these properties, with all of these properties present in (369c).

(369) a. The river froze solid.

b. John kicked free.

c. The ball floated down the river (for hours).

The sentences above are similar to canonical resultatives in several ways. The lowest nP argument c-commanding the secondary predicate is introduced by the secondary predicate itself (cf. the Direct Object Restriction) and may but need not additionally receive a θ-role from the matrix verb. Although they do not require the lower nP to undergo a change of state as it is often understood, the lower nP must undergo a more general change, which could be a change of location. The secondary predicate is not easily separated from the verb, unlike a depictive secondary predicate. And the secondary predicate cannot easily be 'stacked' with canonical resultative secondary predicates, again unlike a depictive secondary predicate.

(370) ?? The ball floated yesterday down the river.

(371) John$_i$ visited the doctor yesterday nude$_i$.

(372) John ate the meat raw nude in his bed.

(373) * John shot the deer dead to pieces. (cf. John shot the deer dead/to pieces.)

This broader definition of 'resultatives' manages to capture the vast majority particle-verb constructions, including those in (368).[12] But even this broader category of 'resultatives' is too strict to capture all particle-verb constructions; a few particle verbs do not denote a change of any sort—property or location—but rather indicate that the lower nP remains in the same state or location throughout the event. Such particle verbs are exemplified below.

(374) a. Keep/stay away/back/off/out!

b. Hold back/off/out (on sthg).

c. John single-handedly held back the enemy troops.

d. John hung a charm on his house to keep out the evil spirits.

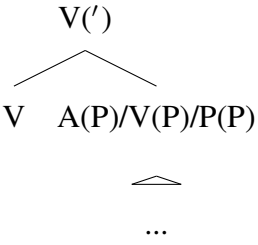
I suppose these could be considered results in that by averting one possible outcome a different outcome is brought about. A resultative would then be said to require the lower nP to undergo a general change, where by 'change' we mean change of state, change of location, or change of an otherwise likely outcome. Whether such a definition of 'resultative' is ultimately warranted or not I leave as an open question.

I suggest that the main unifying property that all of these constructions share is that they involve a verbal head whose complement is an *n*-place (small-clause) predicate, including A(P)s, V(P)s and P(P)s (i.e. the complement of the verb is a small-clause or a nonprojecting head). Given this configuration, the subevents denoted by the verb and the secondary predicate are interpreted as correlated, with the second subevent restricting the initial subevent temporally. The initial subevent is temporally bound in that it is not construed as continuing past the endpoint of the second subevent, if it has an endpoint. States are treated as endpoints, while PATHS may or may not have and endpoint. The two subevents

[12] The example (368c) is less straightforward, but it was argued in §3.2.2.3.2 that sentences like this involve two contemporaneous subevents involving the same participant, and because the second subevent is unbounded, the initial subevent also receives an unbounded or 'continuous' interpretation.

may be interpreted as contemporaneous or subsequential (cf. McIntyre 2004), though I assume this to be determined by the semantics and/or pragmatics; I assume the choice between the contemporaneous or subsequential interpretation is not dependent on a specific syntactic configuration.

(375)



The structure in (375), of course, includes other ECM and raising constructions such as *John finds Bill intelligent*. The implicit definition put forth in Goldberg & Jackendoff (2004) would appear to rule out some constructions sharing this structure with the implicit condition that the secondary predicate denote a change (of state or location), while what I have been calling the 'canonical' resultative adds several additional restrictions. For example, the requirement that canonical resultatives be telic largely restricts the class of secondary predicates to APs and PPs denoting bounded PATHS, and the requirement that such resultatives be transitive might force the presence of a *v*P layer (cf. Chomsky 1995b). But again, these properties are all external to the base structure in (375), which I claim is the unifying property shared by resultatives and all particle-verb constructions alike.

Let me talk now about the temporal relation between the two subevents. I claimed that, given the configuration in (375), the second subevent restricts the construal of the temporal duration of the initial subevent. When the second subevent is a property, the initial subevent is generally construed as ending when the second subevent becomes true, as in the canonical resultative.[13] Some particles like $on_{function}$ may arguably be treated as property-denoting predicates, though they may also be bounded PATHS. With secondary property-denoting subevents, the events are generally treated as subsequential, but they are arguably contemporaneous when the initial subevent is filled by a semelfactive.

[13] An exception to this would be the non-resultative construction *John believes Mary intelligent*, which exhibits the same ECM structure as in (375). I leave discussion of these for future research.

(376) a. John hammered the metal flat.

b. The river froze solid.

c. John turned the TV on.

d. The door banged shut.

When the second subevent is a bounded PATH, the initial subevent cannot be construed as continuing past the PATH's bound. The events may, however, be construed as contemporaneous or subsequential. For example, in (377a) the running subevent and the subevent of John traveling a PATH OUT are contemporaneous. In contrast, in (377b) the subevent of John kicked and the subevent of the ball traveling a PATH AWAY are subsequential.

(377) a. John ran out.

b. John kick the ball away.

Finally, when the second subevent denotes an unbounded PATH, or a property resultative when construed as gradable, the initial subevent may remain temporally unbound as well, though this is not necessary. When there is an external causer, the two subevents may be construed as subsequential or contemporaneous, as the following examples show.

(378) a. The rocket carried the astronauts away. (contemporaneous)

b. While outside the spaceship, the astronaut threw the wrench up. (subsequential)

c. John pushed the door [ever wider] / [wider and wider]. (contemporaneous)

d. John pushed the ball on. (subsequential)

The most interesting cases with regards to particle-verb constructions (which were already discussed in §3.2.2.3) are intransitive constructions involving unbounded PATHS, which contain a single participant and no external causer. Here, both subevents are construed as contemporaneous and, being unbounded, only allow atelic interpretations. In (379b), this forces an iterative reading. In (379c)-(379e), the different types of abstract, unbounded PATHS give rise to the different connotations discussed earlier.

(379) a. Superman flew away.

b. John jumped away.

c. John played on.

d. (Bill sang and) John played along.

e. John joked around.

To conclude, resultative constructions and projecting particle-verb constructions are similar in that both contain secondary predicates which head SC-complements to the verb. Beyond this, some projecting particle-verb constructions may have the same syntactic and semantic properties as resultative constructions, but not all projecting particle-verb constructions do. I claimed that configuration shared by both constructions, shown in (375), gives rise to a temporal restriction which prevents the initial subevent from being construed as continuing beyond the endpoint of the second subevents. I also claimed that the two subevents may be construed as contemporaneous or subsequential, this being a matter external to the syntax.

4.3 Particles and Projection

Let us return to the claim that particles are optionally projecting heads. From a semantic point of view, it seems appropriate to treat (prepositional) particles as small-clause predicates on par with a treatment of directional PPs denoting PATHS, as particles have readings involving abstract PATHS which are predicated of a FIGURE argument, adding meanings distinct from the verbs with which they combine. This was shown in Chapter 3. From a syntactic and morphological point of view, however, the particles appear to have mixed behavior, sometimes behaving like part of a complex verb and other times behaving as a phrase in their own right. This mixed behavior has led to an increasing number of accounts of particle verbs which claim that particles sometimes project phrasal structure and sometimes do not, subject to the context in which a particle occurs and language variation (e.g. Neeleman 1994; Neeleman & Weerman 1999; Zeller 2001; Neeleman 2002; Toivonen 2003; Elenbaas 2007; Kremers 2009; Los et al. 2012). Many of these accounts have argued that English particles

(and often those of other languages) may alternatively behave as a nonprojecting head or as a phrasal head, deriving either the continuous or discontinuous order (Neeleman 1994; Neeleman & Weerman 1999; Neeleman 2002; Elenbaas 2007; Kremers 2009; Los et al. 2012). For his part, Zeller (2001) argues that particles do not project in certain word-formation processes (e.g. deriving nouns from particle verbs), but that they project phrases lacking functional structure in other contexts. In his conclusion, however, he suggests that unmodified particles could be interpreted as both maximal and minimal projections if one adopts a Bare Phrase Structure. Toivonen (2003) argues that Swedish particles are non-projecting syntactic heads, while English particles project in the discontinuous order but form complex heads with the verb prior to syntax when appearing in the continuous order. I argue that particles optionally project in English. In the following subsections, I examine specific (morpho)syntactic evidence in favor of treating particles sometimes as projecting heads and other times as nonprojecting heads.[14]

4.3.1 Evidence of Nonprojection

Ultimately, it is rather difficult to find any single construction which provides uncontroversial evidence in favor of the claim that particles may be nonprojecting heads. Most arguments which might seem to support this conclusion can (and have) received plausible accounts without allowing for the existence of non-projecting particles. For example, while particles are able to be modified by words like *right* in the discontinuous order, such modification is not possible in the continuous order (but see §4.6.2 for rarely-noted exceptions). Although this pattern follows naturally from the claim that particles in the continuous order are non-projecting heads (as there is no position for a modifier), there are other ways to explain the data without resorting to the claim that the particle optionally projects, one of which was discussed in the review of den Dikken (1995) in §2.1.4.

[14] While Elenbaas (2007) and Los et al. (2012) treat particles as optionally projecting heads, they claim that the default status of a particle is nonprojecting. Particles project when required to do so by syntactic or pragmatic reasons, such as when particles are modified or when particles are given contrastive stress. I suspect they may be correct in this regard, but I will not address the issue of a default status here.

(380) a. John sent the message right over.

b. * John sent right over the message.

In the present dissertation, the evidence of the ability of particles to remain as unprojected heads ultimately comes from the differential behavior of modified and unmodified particles in a wide range of constructions. This difference in behavior will nicely follow if we posit the presence of a nonprojecting particle in addition to a projecting particle; thus, the strength of the claim that particles need not project will build incrementally throughout this and the following chapters.

Although we face this conundrum with much of the data, there are some phenomena which do not seem to have received analyses involving projecting particles, and I discuss a few such examples here. First, several authors (e.g. Basilico 2008:746; Elenbaas 2007:81) have noted that a transitive particle verb may be coordinated with a simplex transitive verb and share an object, as in the examples below. If the particles are projecting phrases in the (a) examples and coordination with a simplex verb is possible, then the verb + P(rt)P sequences in the (b) examples should also be able to coordinate with a simplex verb. As the judgments below indicate, this is not the case, suggesting that the verb and particle form a complex V^0. Example (381) demonstrates that projecting particles pattern with typical resultatives in this regard.[15]

(32) a. John [picked up] and [kissed] his daughter.

b. * John [picked right up] and [kissed] his daughter.

(33) a. John [put on] and [adjusted] his hat.

b. * John [put ___ on his head] and [adjusted] his hat.

cf. John put his hat on his head and adjusted it.

[15] In fact, the coordination pattern exhibited here is slightly more complicated than it initially appears if we adopt a split-VP analysis and assume that tense morphology is acquired after the verb has raised, as I have done. This means that the coordination in (380a) is not the coordination of two V nodes, but rather the coordination of (minimally) two $\bar{v}$ nodes. If we assume that coordination requires structural identity and involves deletion of the left copies of shared materials (i.e. the object here), the distinction can still follow from the distinct projecting/nonprojecting structures proposed earlier.

(381) * John shot dead and buried his enemy.

The behavior of particles in adjectival passives has also not, to my knowledge, received an analysis involving projecting particles. In pre-nominal adjectival passives, it is generally the case that nothing can intervene between the participle and the following nP that it modifies. Particles, however, are able to intervene, but only when unmodified, suggesting that the verb and particle form a complex V^0. This is shown in example (382) below. See §6.2.6 for further discussion of adjectival passives, including an analysis which relies on the claim that these particles are not projecting.[16]

(382) a. John tried to steal the locked (*right) up bicycle.

b. The charity sorted through the dropped (*right) off items.

c. The child grabbed at the broken (*partially) off piece of chocolate.

A final example involves the presentational-*there* construction. In this construction, verbs may not assign Accusative Case, and thus surface objects may not appear. Nonetheless, nominal particles such as *place* below are able to appear. (See §4.6.4 for brief discussion of nominal particles crosslinguistically.)

(383) There took place a riot.

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[16] Basilico (2008) provides a similar argument involving adjectival passives, but he provides the following examples where the particle verb is not pre-nominal, in contrast to my examples in (382).

(i) a. John folded the chairs right/back up.
b. John covered the jewels right/back up.
c. John locked the prisoners right/back up.

(ii) a. The chairs remained folded (*right/*back) up.
b. The jewels remained covered (*right/*back) up.
c. The prisoners remained locked (*right/*back) up. (Basilico 2008:750, adapted)

I do not use Basilico's examples in the main text because there are some apparent counterexamples to the data in (i) and (ii), as pointed out to me by Benjamin Bruening (p.c.). The examples in (iii) are relatively acceptable.

(iii) a. Despite our best efforts to remove it, it remained pushed all the way in.
b. He wanted to get it fixed, but for weeks it remained ripped half(way) off.

In his discussion of Noun Incorporation, Baker (1988:106ff) claims that incorporated objects do not need Case. Although I do not consider *place* to have incorporated (since, for example, inflection does not attach to *place*), I assume that Baker's claim can be extended to cases in which a nominal head merges directly with a verbal head. If correct, the grammaticality of (383) is easily explained by assuming *place* is a nonprojecting particle here.

Other constructions which do not appear to have received analyses involving projecting particles include the Verb Raising constructions in OV Germanic languages and the Quotative Inversion construction in English. In contrast, these constructions have frequently been put forth as evidence of the nonprojection of particles. Although I argue in favor of considerably different analyses of these constructions than previous authors in §4.4.2-§4.4.3, my analyses likewise depend on the ability of particles to not project.

4.3.2 Evidence of Projection

Countering the evidence above suggesting that particles need not project, there is also evidence that particles may project a phrase. The most salient piece of evidence to me that particles may project is their ability to be modified by words like *right* in the discontinuous order, as is shown in (384). The examples in (385) highlight that *right* is able to function as a prepositional modifier but not as a verbal modifier, demonstrating that it must be modifying the particle rather than the verb.[17]

(384) a. John looked the word right up.

b. * John looked right up the word.

(385) a. * John right jumped.

b. * John jumped right. (ungrammatical on intended reading)

c. John jumped right onto the table.

[17] See Blom (2005:350f) for argumentation that *right* modification does not require particles to project. See also §2.3.2 for problems with this claim.

The ability of particles to occur as main predicates in copula constructions or to head small clauses in the absence of a verb, and to be modified in these positions, also indicates that particles can project phrasal structure.

(386) a. Your time is short / almost up.

b. With his clothes soaking wet / completely off, John ran onto the soccer field.

Finally, on the assumption that only XPs may front in constructions like those below, the ability of particles to appear in fronted position indicates that they may project. In (387a), *down* fronts without triggering inversion, while (387b) is an example of fronting in the locative inversion construction. See §4.5.3 for discussion of these constructions.

(387) a. Down they came, one by one.

b. ...and away rolled the car.

Thus, while the previous section demonstrated that particles need not project phrases, the present section indicates that, at least in English, particles are able to project phrases. I conclude that particles do not need to project, but they may optionally do so. Additional support for this conclusion is provided after the excursus.

4.3.2.1 Excursus: Functional Projections

Although I argue that particles optionally project phrases, it is possible that even projecting particles project less structure than their non-particle counterparts. Such a claim is pursued in Zeller (2001), who argues that particles generally project phrases but not functional structure. In support of the claim that particles lack functional structure, Zeller first notes that several scholars have claimed that referentiality of nominals is encoded in the upper nP layer of a nominal expression (DP for Zeller). Nominal particles, however, must be non-referential, suggesting they lack the functional nP layer. In the following examples, the nominals may not be referential, indicating the absence of a covert determiner, which in turn suggests the absence of a nP layer.

(388) a. Peter fährt Auto
P. drives car
'Peter is a car-driver'

b. Peter spielt Klavier
P. plays piano
'Peter plays the piano' (Zeller 2001:129)

In the case of prepositional particles, Zeller ties in the lack of functional structure with the inability of such particles to assign Case, in contrast with their uses as transitive prepositions.[18] This argument mimics the structure of unaccusative verbs in many accounts assuming an extended verbal projection, where Accusative Case is either assigned in a functional projection, or the ability to assign Case is tied to the presence or absence of a higher functional projection (e.g. *v*P).

Zeller (2001:294f) additionally cites evidence from Åfarli (1985:97, fn. 8) and Svenonius (1996b:11f, incl. fn. 4) suggesting that adjectival particles lack functional projections. Åfarli notes that adjectives in Norwegian agree with nouns, but the agreement marker is optional when adjectives occur in pre-object position.

(389) a. Vi vaska golvet reint/*rein

b. Vi vaska reint/rein golvet
we washed clean the.floor
'We washed the floor clean.' (Åfarli 1985:97,adapted)

Svenonius (1996b:fn. 11) states that adjectival particles in Norwegian "typically appear in non-agreeing forms". In the examples he provides, *fri* 'free' and *løs* 'loose' appear in bare form rather than their agreeing forms (plural *frei* and neuter singular *løst*). Note that unlike Åfarli's example above, Svenonius' examples indicate that the bare form is possible in the post-object position as well.

[18] See Zeller (2001:§5.2.3) for some exceptions where the particle appears to determine Case in German.

(390) a. Aktivistene slapp {fri} prøvekaninene {fri}.
the.activists let free the.test.rabbits free
'The activists released the guinea pigs'

b. Vi heiste {løs} vraket {løs}.
we hoisted loose the.wreck loose
'We hoisted the car free' (Svenonius 1996b:12)

If the lack of adjectival agreement depends on certain functional structure, then the data above suggests that adjectival particles lack certain functional structure.[19]

Other work on prepositional phrases, including Koopman (2000) and den Dikken (2010), suggests that there exists a continuum of possible structures for prepositional elements, varying in the amount of functional structure present. In such accounts, particles fall at one end of the continuum with the least amount of structure. Koopman (2000) further distinguishes between two types of particles, 'idiomatic' and directional. Based on the greater syntactic mobility of the directional particles (e.g. they can topicalize; see §4.5), she suggests they have more functional layers than the 'idiomatic' particles.

For the present purposes, I do not believe it is crucial to enter the debate on whether particles contain fewer functional layers than other prepositional projections, so I will remain agnostic on this issue. I will point out, however, that such a claim offers an alternative account to the one adopted in §4.5 of the difference in mobility between what I call 'transparent' and 'nontransparent' particles (only the latter being able to topicalize, for example). According to Koopman, it is the presence or absence of certain functional structure that determines the degree of mobility of different types of particles.

[19] In contrast, the data in (389b) suggests that adjectival particles may agree, even in pre-object position. In fact, Zeller (2001) reproduces Åfarli's example in (389b) without including *reint* in the pre-object position. It is unclear why this was omitted, but if agreeing forms truly can precede objects, Zeller's claim of the lack of a functional projection comes into question. Likewise, in the present analysis, pre-object particles are non-projecting heads, and they presumably cannot take agreement if it depends on the presence of functional structure. I leave this issue for future research. One potential avenue which I have not explored the implications of is found in Levinson (2010), who distinguishes between different types of resultatives and includes discussion of similar data (pp.146f).

4.3.3 Additional Support for Optional Projection from Coordination and RNR

Data from coordination and Right-Node Raising also provides limited support for the claim that particles optionally project, and for the specific structures I have proposed. In this section, I show that these constructions treat the verb and particle as a constituent in the continuous order. In contrast, the particle and nP behave as a constituent in the discontinuous order, but not the verb and nP. This is predicted if the verb and particle form a complex head in the continuous order and the nP and particle form a small clause in the discontinuous order.

I already pointed out in §4.3.1 that a transitive particle verb may coordinate with a simplex verb, sharing an object. It is, therefore, unsurprising that two transitive particle verbs may do likewise, as shown in (391).

(391) a. John [bought up] and [ate up] the sandwiches.

b. John [turned off] and [threw out] his TV.

In the discontinuous order, it is possible to coordinate an nP and a (transparent) particle, but it is not possible to coordinate a verb and nP without also including the particle in both conjuncts. This is shown in (392) and (393), respectively. The sentences in (393) become grammatical if the particle is interpreted with only the verb in the second conjunct.

(392) a. John turned [his TV off] and [his radio on].

b. The Scotsman pulled [his kilt up] and [his underwear down].

(393) a. * John [turned the TV] and [flicked the lights] on.

b. * The Scotsman [ripped his kilt] and [pulled his underwear] off.

In the present analysis, we can explain the pattern above as follows. If a particle projects, it forms a small-clause with the nP with the linear order [nP Prt]. Coordination of two such small clauses yields the order in (392). It also follows from this structure that the verb and nP cannot form a constituent without the particle. Even if a particle does not project, the nP cannot form a constituent with the verb excluding the particle. When an nP merges into the nonprojecting structure, the verb and particle already form a constituent

([$_{V'}$ [$_{V+}$ V Prt] nP]), and even after the nP raises to get Case it cannot form a constituent with the verb while excluding the particle, as it would have the following structure (traces are used for expository purposes) [$_{vP}$ V_i [$_{FP}$ nP_j [$_{VP}$ [$_{V+}$ t_i Prt] t_j]]].[20]

Consider next how Right-Node Raising supports the present structural claims. When the particle precedes the object, an object nP may raise rightward alone (394), but not together with the particle (395), suggesting that [prt nP] does not form a (movable) constituent in the continuous order. This differs from full PPs, which may raise rightward in

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[20] In English, the particle and nP cannot be coordinated in the continuous order, suggesting that they do not form a constituent.

(i) a. * John turned [off his TV] and [on his radio].
b. * The Scotsman pulled [up his kilt] and [down his underwear].

One might suspect that (i) is ungrammatical because the examples would bear contrastive stress, which might limit the ordering options of the particle. This does not appear to be the case. Though it may be more common for contrasted particles to appear after the object, it is still possible to contrast pre-object particles. Not all speakers find the examples in (ii) and (iii) acceptable, and I have changed the grammaticality judgment of (ii) from its original source to reflect this.

(ii) % He threw óut the trash and packed ín the bags. (Bolinger 1971:46, modified)

(iii) % John turned ón the TV, and then Mary turned óff the TV.

Further, coordination of [particle + nP] strings is not possible with noncontrastive particles, either.

(iv) * John turned on the TV and on/up the lights.

Although the coordination of two [particle + nP] strings is not possible in English, Toivonen (2003) indicates that it is possible in Swedish, providing the following examples. PAR indicates that the examples were taken from the PAROLE corpus.

(v) Han ville kaste **in** kläderna och **ut** skorna.
he wanted throw in clothes.the and out shoes.the
'He wanted to throw the clothes in and the shoes out.'

(vi) Tokyo och Washington har således ett gemensamt intresse av att få **upp** dollarn och **ner** yenen.
T. and W. have thus a common interest of to get up dollar.the and down yen.the
'Tokyo and Washington thus have a common interest in getting the dollar up and the yen down.' (PAR)

(vii) Då tog hon **opp** källarn och **ner** vinden...
then took she up basement.the and down attic.the...
'The[n] she brought the basement up and the attic down...' (PAR) (Toivonen 2003:169)

This order is not entirely unexpected. Starting with the continuous structure [$_{V'}$ [$_{V+}$ V Prt] nP], once the verb raises out of VP, coordination of $\bar{V}$ or VP would yield the order seen in Swedish (provided the nP need not raise to object overtly). I suggest in the following subsection that this order may be ruled out in English for prosodic reasons, but I have no explanation for why the prosodic restriction discussed there would not also apply in Swedish.

RNR constructions (396).

(394) a. John bought up, and (then) Bill ate up, the sandwiches.

b. John turned off, and (then) Bill threw out, the TV.

(395) a. * John flicked ___ and Bill clapped ___ on the lights.[21]

b. * John bought ___ and Bill ate ___ up the sandwiches.

(396) a. John walked ___ and Bill ran ___ up the mountain.

b. John rolled ___ and Bill rode his bike ___ down the mountain.

In contrast, when the particle follows the object, it may not raise rightward alone (397), but it may raise together with the nP (398), suggesting that [nP prt] forms a constituent in the discontinuous order.

(397) a. * John turned the TV, and Bill flicked the lights, on.

b. * The Scotsman ripped his kilt, and John pulled his underwear, off.

(398) a. John flicked ___ and Bill clapped ___ the lights on.

b. John kicked ___ and Bill tossed ___ the ball up.

The data from coordination and Right-Node Raising appears to indicate the following. In the continuous order, [V prt] forms a constituent while [prt nP] does not (at least not initially; see fn. 20). In the discontinuous order, [nP prt] forms a constituent, while [V nP] does not.[22] This is expected in the present analysis, where the verb and particle form a complex head V^{+} in the continuous order, while the nP and particle form a small clause in the discontinuous order.

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[21] Bill uses the Clapper, a device that turns lights on and off when it detects a clap.

[22] Note that the string [nP prt] is only possible in the coordination and Right-Node Raising structures in (392) and (398) when they are transparent. Similar data will be discussed in §4.5 and an explanation provided in §4.5.5.

4.3.3.1 An Alternative, Prosodic Explanation

Svenonius (1994:Ch. 3, §3.5) proposes an alternative explanation for the coordination data above which calls into question whether the pattern demonstrated above is due to syntax. It has often been noted that particles appearing in the continuous order in English form a prosodic unit with the verb. Svenonius suggests that particles, at least in the continuous order, are prosodically dependent on the verb to their left, behaving in this regard as clitic-like elements (though not actually clitics). The ungrammaticality of coordinating [prt nP] conjuncts, as in (20), or of raising them in Right-Node Raising constructions, as in (395), could then be seen as the result of the particle being leftmost in its conjunct with nothing to 'lean on'.

Even if this prosodic explanation of some of the coordination and Right-Node Raising facts is correct, it supports the structures proposed here. To understand how, we must first ask why a particle in pre-object position should be prosodically 'deficient' in this way. Recall that the accounts by Neeleman & Weerman (1999) and Neeleman (2002) on the one hand and Kremers (2009) on the other, reviewed in §2.4.2 and §2.4.3, argue that only projecting particles can form their own phonological phrases, following Selkirk's (1986) end-based theory of mapping from syntax to phonology. In this theory, the right edge of an XP maps onto a prosodic phrase boundary. In the present account, a nonprojecting particle merged in the continuous order is prosodically 'deficient' in that it cannot form its own phonological phrase, as it is not an XP. Apparently, this deficiency also causes the particle to 'lean' leftward, forming part of the prosodic phrase of the preceding material. I have no idea why it should lean left rather than right (Svenonius points out that complementizers and auxiliaries in English also lean left), but let us assume for the sake of the argument that there is a principled reason for this. In the underlying discontinuous order, the particle projects a phrase, so it(s projection) maps to a phonological phrase. Recall, however, that the discontinuous surface order can be derived from either underlying order. This suggests that a particle should optionally 'lean' leftward onto an object nP that precedes it. This seems to be correct. In an

expression like *John turned the lights on*, *the lights on* may be parsed two ways, as follows.[23]

(399) a. {the lights on}

b. {the lights} {on}

In sum, some of the coordination and Right-Node Raising data above may be explained in an account referencing the prosodic structure of particles. I have shown that such an account can be made to fall out naturally from the syntactic account of particle-verb constructions proposed here.

4.3.4 What Gapping Reveals, or Does Not Reveal, about Projection

Let us now consider the behavior of particles in gapping constructions, which has been promoted as evidence that the verb and particle form a complex head, at least in the continuous order (e.g. Johnson 1991). I show that gapping is actually problematic for both accounts which assume particles project and complex-head accounts, but that the data is readily explained if we assume particles optionally project.

When a transitive particle-verb construction occurs in the continuous order, gapping is possible only if both the verb and the particle are absent in the second conjunct. Attempting to pronounce a particle in the gapped conjunct results in ungrammaticality when the particle precedes the object, even when the particle is transparent.

(400) Gary looked up Sam's number, and Mittie, my number. (Johnson 1991:591)

(401) a. * Jones pulled off the old tablecloth, and Peters, on the new one.

b. * John turned on the TV, and Bill, off the radio.

Although Johnson (1991) uses this to support a complex-head approach, there are accounts of gapping which are potentially compatible with other approaches to the particle-verb construction as well (including Johnson's own, more recent, accounts). Furthermore,

[23] My own impression is that unmodified, nontransparent particles sound better when they 'lean' on the preceding nP rather than standing alone as a prosodic phrase, so the phrasing is (399b) is less likely with those particles. Also, to my ear, the particle most felicitously stands alone when it bears contrastive stress.

not all treatments of gapping which would favor a complex head approach are compatible with the current claims. It is well beyond the scope of this dissertation to deliberate among the various accounts of gapping, but I briefly consider how these different accounts might interact with various types of particle-verb construction analyses.

First, let us consider a case where the present analysis and typical complex-head analyses differ. Consider an approach to gapping which involves phrasal (lower) VP coordination, with the gapping of the verb due to Across-the-Board movement of the verb into a higher VP above the conjoined VPs (e.g. Larson 1988:345f). If, in accordance with some complex-head approaches, the particle were to raise with the verb to the higher VP—or at least out of the lower VP—the data in (400)-(401) would fall out directly. In the present account, the particle is always stranded by verb movement, and it is therefore incompatible with the type of gapping account just described because the particle would appear in both conjuncts.

An alternative approach to gapping involves ellipsis of the verb (e.g. Hartmann 2000). If the particle is part of the elided (complex) head, the complex-head approach to the continuous order correctly predicts that particles will not appear in the second conjunct. The trick here is to force the particle to elide with the verb, meaning that either V^{+} must be elided rather than the minimal V^{0} (e.g. by some constraint against elision of part of a head), or the minimal V and Prt heads must elide independently. In Hartmann's analysis, gapping is a PF phenomenon, leaving in the target conjunct only contrastive XPs which are attached to VP/*v*P, IP and possibly CP. Because I claim that particles in the continuous order are not XPs but rather heads belonging to complex heads, they should be gapped necessarily in Hartmann's account of gapping.[24] Note that this argumentation does not actually require the verb and particle to form a complex head. As long as the particle does not project, it would be elided regardless of where it merged. For example, if a nonprojecting particle merged with V under the node $\bar{V}$, as in Radford (1997) (reviewed in §2.3.1), it would necessarily elide

[24] Hartmann actually discusses particles, and argues that they are phrases and can remain in the second conjunct. This is true, in fact, but only when the particle appears in the discontinuous order, as will be discussed below. Hartmann relies on German for her data, which does not exhibit a word-order distinction like English between projecting and nonprojecting particles.

due to it not being a phrase.

Accounts which are potentially compatible with an approach to particle-verb constructions not involving a complex head (as well as those involving a complex head) are those which move contrastive XPs out of VP, subsequently eliding the target VP (e.g. Sag 1976; Coppock 2001) or raising the remnant VPs (in both conjuncts) using across-the-board movement (e.g. Johnson 2009) (I refer to these, collectively, as the 'remnant' accounts below). So long as the particle, or the phrase it is in, does not leave the VP, it will not be pronounced in the second conjunct.

As we have seen, it is not necessarily the case that gapping of the verb and particle in the continuous order is evidence that the particle does not project, though such an account is often compatible with, and even preferable in, many existing treatments of gapping. But the facts relating to gapping in particle-verb constructions are slightly more complex than I have described so far. In the discontinuous order, a particle may appear in the gapped conjunct, provided it is transparent and contrasts with the preceding particle. This is demonstrated in the following examples, where only (402a) exhibits transparent, contrastive particles. Comparable data for German can be found in Zeller (2001:86, fn. 18).

(402) a. Jones pulled the old tablecloth off, and Peters, the new one on.

b. * Jones pulled the deal off, and Peters the money in. (Fraser 1976:3)

This new data is more problematic for complex-head approaches to particle-verb constructions than small-clause approaches. Given a complex-head approach, a phonological account of gapping in which everything but noncontrastive XPs is deleted should not distinguish between a pre- and post-object particle, both being (parts of) heads. If contrastive XPs raise out of VP prior to VP-ellipsis or Across-the-Board VP-raising, as in the remnant accounts, the particle would need to excorporate and raise rightward. But complex-head approaches in English generally assume that the verb excorporates at some point in the derivation. Excorporation is already problematic, but now we would need to allow two different types of syntactic excorporation: raising the lower V^0 out of a complex V^+, as well as raising Prt^0 out of V^+. Of the approaches I have outlines, only the approach attributed to Larson

(1988) is potentially compatible, provided the verb is able to optionally strand the particle somewhere within the coordinated VP to account for the discontinuous order.

For small-clause approaches, this new data seems unproblematic, but when taken together with the data from gapping in the continuous order, small-clause approaches also face problems. The small-clause approaches in Svenonius (1994) and den Dikken (1995) both derive the continuous order by raising the particle overtly to a position preceding the object and the discontinuous order by raising the object nP to a position in front of the particle, but still within the small clause headed by the particle. In both instances in both accounts, the raising is required for Case, which is assigned through a Case-chain in the continuous order, or via ECM in the discontinuous order. If they adopt Hartmann's phonological account of gapping, there is nothing obvious which would prevent either of these word orders from arising. In the remnant accounts, the small-clause must be able to raise out of the VP in the discontinuous order to allow (402a), but then it should be able to do so in the continuous order as well. Despite these problems, these accounts might be saved by the prosodic account brought up when I discussed the behavior of particles in coordinations (§4.3.3, esp. §4.3.3.1). There, we saw that [particle + nP] strings, indicative of the continuous order, could not be coordinated. One possible account of this, suggested by Svenonius (1994), was that particles in the continuous order must prosodically 'lean' on the verb to their left. Since the verb is absent in the right conjunct of [particle + nP] conjunctions, such conjunctions are ungrammatical. In gapping constructions, because the verb is also absent in the second conjunct the particle has nothing to 'lean' on, so the construction is correctly predicted to be ungrammatical.

In the present analysis, gapping is generally not a problem. The fact that I distinguish the continuous order from the (underlying) discontinuous order makes the present analysis generally compatible with both the phonological and remnant analyses discussed above, with the exception of the analysis in Larson (1988). Because the particle is (potentially) a phrase in the discontinuous order but not the continuous order, Hartmann's phonological account will only force ellipsis of the particle in the continuous order. In the remnant analysis, we

need only to assume that only phrases may raise rightward out of the VP to allow the projecting particle to raise in the discontinuous order (presumably after its subject has raised above VP for Case) and prevent a nonprojecting particle from escaping the VP in the continuous order. Of course, the prosodic account is also capable of explaining the ban on gapping in the continuous order in the present analysis, and this would also make it compatible with Larson's (1988) treatment of gapping.

To summarize this subsection, particles may occur in gapped conjuncts in the discontinuous but not the continuous order. This is generally problematic for both complex-head and small-clause approaches to particle-verb constructions, though the small-clause approach can be saved through the adoption of a prosodic condition on particles in the continuous order. In contrast, an approach which assumes the formation of complex-head in the continuous order but not (necessarily) in the discontinuous order is fully compatible with several alternative approaches to gapping.

4.4 Nonprojecting Particles Do Not Move with the Verb

4.4.1 V-to-C Movement and Other Instances of Obligatory Particle-Stranding

Now that we have seen arguments in favor of treating particles as optionally projecting heads, it is time to consider the evidence for another central claim of the present chapter: nonprojecting particles remain *in situ*. Recall that many accounts of the particle-verb construction have argued that the particle forms a complex head with the verb morphologically or through incorporation. If this is the case, then some other mechanism is necessary to account for the placement of inflectional suffixes on the verbal portion of the complex head rather than the prepositional portion (e.g. a complexity constraint or excorporation), and until now I have rejected such an account. The data presented in this section adds support to my claim that non-projecting particles always remain *in situ*. Specifically, using data from Northern Irish English, Early Modern English, and the Scandinavian languages of Icelandic, Norwegian and Swedish, I show that particles cannot raise with verbs to C^0, across negation, or even past verb phrase modifiers in VO Germanic languages, even when the particle precedes the object. This last point is important because some accounts derive the continuous

order by claiming that the particle raises with the verb. The evidence presented below would force such an account to have a mechanism and motivation for the verb to strand the particle at some position above the particle's base position but below the verb's final landing site. In contrast, my account faces no such problem. The data presented below is also critical because it demonstrates a shared property between the VO and OV Germanic languages: the inability for particles to raise to C^0 or I^0. I believe that the simplest solution is to maintain that particles never undergo head-movement together with verbs in any of the Germanic languages.[25]

First, let us consider some data from Northern Irish English. Svenonius (1994:Ch. 3, fn. 4) presents the following data provided by James McCloskey showing that a verb may front across an overt subject in imperatives and strand a particle, regardless whether the particle appears before or after an object. Moreover, Svenonius claims that the particle must be stranded in such constructions, though he does not provide ungrammatical examples.

(403) a. Shut you up!

b. Take you them clothes out to the kitchen!

c. Take you out them clothes to the kitchen! (Svenonius 1994:Ch. 3, fn 4)

On the assumption that the subject occupies SpecIP in the constructions above, the particle must be stranded no higher than I^0.

The following data from Norwegian likewise demonstrates that (non-projecting) particles may not raise past the subject even when the verb has, this time in yes/no- and *wh*-questions.

(404) a. * Sparka ut Kari hunden?
'Kicked out Kari the dog'

b. Sparka Kari ut hunden?
'Kicked Kari out the dog' (Åfarli 1985:93, adapted)

[25] A particle which can topicalize can raise past these positions, but it is clear that such a particle is not undergoing head-movement with the verb.

(405) a. Hvorfor **slapp** hun **ut** katten?
why let she out cat.the
'Why did she let out the cat?'

b. * Hvorfor **slapp ut** hun katten? (Taraldsen 2000:100, modified)

When NegP is present, particles cannot even reach I^0; instead, they must be stranded below NegP when the verb raises above it. This is demonstrated in the following examples from Icelandic, in which the particle must follow negation.

(406) a. Þeir sendu ekki peningana upp.
they sent not the.money up
'They did not send the money up.'

b. Þeir sendu peningana ekki upp.
they sent the.money not up

c. * Þeir sendu peningana upp ekki.
they sent the.money up not

(Collins & Thráinsson 1996:434)

(407) a. Þeir sendu ekki upp peningana.
they sent not up the.money
'They did not send up the money.'

b. * Þeir sendu upp peningana ekki.
they sent up the.money not

c. * Þeir sendu upp ekki peningana.
they sent up not the.money

(Collins & Thráinsson 1996:435)

Toivonen (2003) makes it clear that the same holds for Swedish; a particle must remain below negation. She further provides data showing that a particle must remain below the verb phrase modifier *ofta* 'often' when present, even when the verb has raised past it. Thus, the particle must be stranded within *v*P.

(408) a. Jan åt inte [**upp** kakorna].
J. ate not up cookies.the
'Jan did not eat up the cookies.'

b. Jan vill inte [äta **upp** kakorna].
J. wants not eat up cookies.the
'Jan does not want to eat up the cookies. (Toivonen 2003:13)

(409) a. Sofia kastar ofta **bort** saker.
S. throws often away things
'Sofia often throws things away.'

b. * Sofia kastar **bort** ofta saker
S. throws away often things
(Toivonen 2003:85, modified)

Standard American English lacks V2 and main verbs do not raise above negation or verb phrase modifiers like *often*, so we cannot directly see that particles would necessarily be stranded below these levels. Earlier varieties of English, however, did allow such constructions, and particles seem to have only occurred below subjects and negation, as I demonstrate below (see also Elenbaas 2007 and Los et al. 2012). My data for Early Modern English (EModE) is based on corpus searches of the King James Version of the Bible, whose first translation was completed in 1611.[26]

To check whether particles could precede subjects in EModE, I first searched the corpus for sentences containing 'ye up' and 'thou up', and the corresponding 'up ye' and 'up thou'. I then examined the results for instances of particle verbs occurring in imperatives. Below, I provide a representative sample of the attested instances. Only constructions in which the subject pronoun preceded the particle *up* were found. I presume that the order *up* + pronoun was ungrammatical in the imperative due to its absence in the data and on analogy with the Scandinavian languages above.

[26] The corpus used here can be found at www.gutenberg.org/ebooks/10 or http://ota.ahds.ac.uk/headers/1691.xml.

(410) a. **Lift ye up** a banner upon the high mountain... (Isaiah 13:2)

b. **Set ye up** a standard in the land... (Jeremiah 51:27)

c. **Fill ye up** then the measure of your fathers. (Matthew 23:32)

d. But **lift thou up** thy rod... (Exodus 14:16)

e. ...wherefore **shut thou up** the vision... (Daniel 8:26)

f. **Hold thou me up**, and I shall be safe... (Psalm 119:117)

g. Moreover **take thou up** a lamentation for the princes of Israel (Ezekiel 19:1)

(411) Unattested (presumed ungrammatical)

a. * Lift up thou thine eyes...

b. * Rise up ye...

A second search for sequences examples where *not* preceded or followed the particles *up* and *out* revealed numerous examples in which a main verb preceded negation while the particle followed it, but no instances in which the particle preceded sentential negation. Again, I include some representative examples below. I also include two unattested examples as representative of the absent order in which the particle precedes negation. I presume they were ungrammatical in EModE.

(412) a. **Lay not up** for yourselves treasures upon earth... (Matthew 6:19)

b. **Lift not up** your horn on high: speak not with a stiff neck. (Psalm 75:5)

c. Howbeit this kind **goeth not out** but by prayer and fasting. (Matthew 17:21)

d. And they **drave not out** the Canaanites that dwelt in Gezer... (Joshua 16:10)

e. Let burning coals fall upon them: let them be cast into the fire; into deep pits, that they **rise not up** again. (Psalm 140:10)

f. I charge you, O daughters of Jerusalem, that ye **stir not up**, nor awake my love, until he please. (Song of Solomon 8:4)

g. He that **putteth not out** his money to usury, nor taketh reward against the innocent... (Psalm 15:5)

h. Then said he unto me, This is the place where the priests shall boil the trespass offering and the sin offering, where they shall bake the meat offering; that they **bear them not out** into the utter court, to sanctify the people. (Ezekiel 46:20)

(413) Unattested (presumed ungrammatical)

a. * He that goeth out not...

b. * Go up not...

For comparison, the following examples from Norwegian are provided. Note that the while the object pronoun must precede negation, the particle may not.

(414) a. Derfor **slapp** han **n** ikke **ut**.
therefore let he it not out

b. * Derfor **slapp n** han ikke ut.

c. * Derfor slapp han ikke **n ut**. (Taraldsen 2000:102, modified)

(415) a. * Derfor slapp han n ut ikke.

b. * Derfor slapp n han ut ikke. (Taraldsen, p.c.)

It should be noted that in the case of transitive particle-verb constructions, the object always follows the particle in the extracted examples from EModE, except where the object

is a pronoun. I suspect there is a pragmatic reason for this and that the particle should be able to occur after the object as well. In modern VO Germanic languages, we can find examples showing that the particle need not precede an object when stranded under negation (e.g. the Icelandic example in (406a)) or when the verb has raised above the subject (e.g. the Northern Irish English examples in (403b)).

Before ending this section, I wish to briefly tie these facts in to the facts found in OV Germanic languages. In those languages, verbs raise to C^0 in V2 contexts, obligatorily stranding the particle. This is demonstrated in German by the difference between (416a) and (416b) below.

(416) a. ...dass das Konzert um acht Uhr an-fängt.
that the concert at eight o'clock AN-begin
'...that the concert begins at eight o'clock.'

b. Das Konzert {*an}-fängt um acht Uhr {an}.
the concert AN-begin at eight o'clock AN
'The concert begins at eight o'clock.'

Whether the particle is stranded at some intermediary head or not is harder to detect because of the head-final nature of the OV Germanic languages (CP excluded); for example, the data regarding particles in imperatives and under negation in matrix clauses is equivocable in Dutch and German, as rightward head-movement of the particle would not lead to a surface-order distinction (on the assumptions that sentential negation occupies a specifier position, and that specifiers are generally projected to the left).[27] Although the same diagnostics used in the VO Germanic languages will not work in the OV Germanic languages, evidence from the position of the infinitival morpheme and the aspect/participle morpheme suggests that a particle is limited in how high it could theoretically move.

[27] Some data from Old English (OE), which exhibited OV word order, suggests that particles remained under negation in this order. This is exemplified in example (i) below, when the negator *ne* appears between the particle and verb. I also include in (ii) an example showing that the particle and verb could be split up by the infinitival marker, as in Modern Dutch and German. For theoretical reasons and based on what we see in other Germanic languages, I assume that the particle could not follow the negation or infinitival marker in OV clauses in OE, but I have not carried out any corpus research to confirm the absence of such orders in OE. Both examples below were provided in Los et al. (2012:147), which provides further data from OE that conforms to the present claims.

That the particle does not raise with the verb to I^0 is revealed in the following data from German and Dutch, wherein the infinitival marker (*zu* in German, *te* in Dutch) necessarily precedes the verb and follows the particle. I assume the verb in these examples has raised to I^0.

(417) Ich habe versucht, sie {an}-zu-{*an}-rufen.
I have tried her AN-to-AN-call
'I tried to call her.'

(418) Zij probeerde haar moeder {op} te {*op}-bellen
she tried her mother up to up-call
'She tried to call her mother' (van Marle 2002:211, modified)

In the presence of an auxiliary, a verb in an infinitival construction is blocked from raising to I^0. Instead, the auxiliary adjoins to I^0.

(419) a. aussagen zu können
testify to can
'be able to testify'

b. * aus-zu-sagen können

Likewise, the particle must precede the morpheme(s) *ge-* in both German and Dutch, shown below. This holds for *ge-* in participle forms and in past tense forms.

(420) Das Bier wurde aus-ge-trunken
the beer was PRT-*ge*-drunk
'The beer was drunk.' (Zeller 2001:73, adapted)

(i) forðæm hio nanne swetne wæsðm *forð* ne *bringð*
because she no sweet fruit forth not brings
'because it does not produce any sweet fruit' (cocura, CP: 45.341.22.2297) (Los et al. 2012:147)

(ii) & deofolseocnessa *ut* to *a-drifanne*.
and demoniacal.possession out to PREF-drive
'and to drive out demoniacal possession.' (cosgosp, Mk [WSCp]: 3.15.2351)
(Los et al. 2012:147, adapted)

(421) a. Das Konzert hat um acht Uhr {an}-ge-{an}-fangen.
the concert has at eight o'clock AN-GE-AN-begin
'The concert began at eight o'clock.'

b. Ik heb jou {op}-ge-{*op}-beld
I have you up-GE-up-called
'I called you up.' (Koopman 2000:206, modified)

While the position(s) of *ge-* is not entirely clear, in past tense forms it occupies a syntactic position below the lowest auxiliary. If the particle were to raise with the verb, we would incorrectly expect *ge-* to precede the particle, unless we additionally posit some constraint/rule regarding the placement of the participle morpheme.

(422) Er müsste es aus-ge-sagt haben.
he must it AUS-PARTICIPLE-said have
'He must have testified (already).'

(423) ...[$_{FP}$ ... [$_{VP}$ aus ~~sag(t)~~] ... ge-sag(t)] haben

(424) * ...[$_{FP}$ ... [$_{VP}$ ~~aus-sag(t)~~] ... ge-[aus-sag(t)]] haben

There is one final question to address: if particles do not raise with verbs, why do they seem to be prefixes on verbs when they are linearly adjacent? I assume without argument that German particles are parsed together with the linearly adjacent verb prosodically at PF. It was suggested in §4.3.3.1 that particles 'lean' to the left in English; if so, it would seem that they 'lean' to the right in German.

The picture painted above is slightly more complicated than shown above. There are a few exceptions in which a particle prefixes onto a verb and moves along with it, which I discuss in §6.1.3. In the OV languages, the Verb Raising construction also appears problematic for the claim that particles remain *in situ* in the syntax, as it allows the particle to raise past various auxiliaries, provided the verb remains somewhere to its right (though not necessarily adjacent to the particle). Finally, there are several inversion constructions in English in which the verb and particle may come to precede a subject, a fact which has often been

explained by resorting to complex head movement. I discuss the Verb Raising and inversion constructions in the following subsections and provide analyses which do not require us to posit that particles raise as part of a complex head.

4.4.2 Verb Raising: Particles Do Not Raise Syntactically

4.4.2.1 The Problem

The Verb Raising construction found in OV Germanic languages appears to pose a problem for the claim that non-projecting particles do not move together with the verb; even some accounts which otherwise treat the verb and particle as distinct heads in the overt syntax conclude that the verb and particle may raise together as a single head in the Verb Raising construction (e.g. den Dikken 1995:78; Zeller 2001:271ff). In this section, I demonstrate that it is neither necessary to make such a claim nor is such a claim able to account for all the relevant data. Instead, I sketch a tentative explanation for the positioning of the particle which places the movement at PF rather than in the syntax. I begin with a brief overview of the relevant data.

Even though we saw above that particles in OV Germanic languages cannot raise to C^0 or even as high as the lowest auxiliary, the Verb Raising construction appears to present a counterexample to this pattern. In a Verb Raising construction, a verb raises rightward across one or more higher verbs or auxiliaries. When the verb which raises is part of a particle verb, the particle in some OV Germanic languages may optionally shift rightward with the verb, provided it is unmodified. This is demonstrated in the following Dutch example.[28,29] I employ the use of an underline to indicate the original location of the moved words without implying that they moved as a single constituent.

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[28] I rely primarily on data from Dutch in the following discussion, though Verb Raising is observed in varying degrees in most of the OV Germanic languages. See Wurmbrand (2000, 2005) for an overview.

[29] Not all OV Germanic languages behave the same. For example, Taraldsen (2000) states that particles in Afrikaans obligatorily raise with the verb in Verb Raising constructions.

(i) a. dat Jan Marie sal **op**bel
that Jan Marie will up.call
b. * dat Jan Marie **op** sal bel (Taraldsen 2000:105)

(425) a. ... dat Hans zijn moeder op bellen wilde

b. ... dat Hans zijn moeder ___ wilde op-bellen

c. ... dat Hans zijn moeder op ___ wilde bellen
that Hans his mother up wanted call
'...that Hans wanted to call up his mother.' (Booij 2002:22, modified)

The fact that the entire separable-prefix verb can raise together out of the clause appears to indicate that the particle and verb in Dutch can raise as a single unit, and this claim has been made by many scholars (usually claimed to move as a head, in some cases derived after incorporation; e.g. Groos 1989:51f; Booij 1990:46f; Neeleman 1994:21ff; den Dikken 1995:78; Zeller 2001:271ff; Booij 2002:22, 2010:94ff, 130f; Blom 2005:110f; Los et al. 2012:60ff). If this is the case, we might expect that no tense morphemes could intervene between the prefix and verb when they raise together.[30] I showed in §4.4 that particles and verbs are necessarily split by the participle *ge-* and infinitival *zu* in German, noting that the same held for Dutch, and I claimed this was evidence that particle do not raise with the verb. If particles do raise with the verb in the Verb Raising construction, then the Dutch participle *ge-* and infinitival *te* should precede the entire particle+verb complex when it raises. This is not the case. As in other constructions, the elements must intervene between the particle and verb.

(426) a. omdat hij mij ___ probeert op te bellen

b. omdat hij mij op ___ probeert te bellen
because he me up tries to call
'because he tries to call me up' (Haiden 2005, adapted)

[30] I am assuming that the Conflation mechanism whereby heads move and combine with affixes only allows the p-signature of affixes to Conflate onto the right or left edge of a p-signature. If affixes are allowed to be inserted elsewhere, we need to posit the existence additional rules just for the Conflation of tense/aspect morphemes.

(427) a. * dat Jan zijn pap niet ___ heeft proberen te op-eten.

b. dat Jan zijn pap niet ___ heeft proberen op te eten.
that Jan his porridge not has tried up to eat
'that Jan has not tried to eat up his porridge'

(den Besten & Broekhuis 1992:26, modified)

The fact that the participle and infinitival markers must intervene between the particle and verb suggests that the particle moves independently of the verb; thus, it is not possible that the particle raises with the verb via the Conflation mechanism described earlier. One might think that Verb Raising is an instance of two distinct syntactic head movements. But if the verb undergoes syntactic head movement, and the particle does as well, the particle must be able to move around lower copies of the verb, creating a Minimal Link Condition violation. It is also unlikely that the particle moves as a phrase, either as a PrtP or as part of a VP (cf. Verb Projection Raising), because particles with *right*-modifiers (e.g. *pal*, *vlak* in Dutch) necessarily remain *in situ* in Verb Raising. A particle may neither strand a *right*-modifier nor raise together with it, as shown in (428).[31] Furthermore, resultative secondary predicates, which are in many ways similar to particle-verb constructions except that they obligatorily project phrases, cannot raise together with the verb, as (429) shows.

(428) a. dat Jan de bal (vlak, pal) over heeft geschoten

b. dat Jan de bal (*vlak, *pal) heeft (*vlak, *pal) over-geschoten
that Jan the ball right has right over-shot
'that Jan shot the ball right over (the goal)' (den Dikken 2003:2, adapted)

(429) a. ... dat Jan de deur groen {ge-verfd} heeft {ge-verfd}

b. ... dat Jan de deur {groen} heeft {*groen} ge-verfd
that John the door green has green PREF-painted
'... that John will paint the door green.' (Los et al. 2012:32, modified)

[31] See den Dikken (1995:108) and references therein for discussion of a different type of modifier (an adverbial phrase such as *twee meter* 'two meters' rather than a *right*-type modifier) which can be stranded under Verb Raising.

Thus far, it seems that despite the ability of the verb and particle to occur together to the right of a higher verb in the Verb Raising construction, the particle and verb raise separately; however, it would appear that particles raise neither as heads nor as phrases. It may be that particles in the Verb Raising construction do not raise syntactically, but rather at PF. Further, if we wish to maintain that particles remain *in situ* in all Germanic languages, then we need a non-syntactic account of particle movement in the Verb Raising construction. And there is some evidence suggesting that a PF account of particle movement in Verb Raising construction fares better than a head-movement account.

The evidence I am referring to shows that particles which shift rightward in Verb Raising constructions in Dutch need not surface adjacent to the verb, so long as they remain to the verb's left and no further left than the particle's base position. This is demonstrated in the following examples from Bennis (1992), where a particle may occur *in situ* or between any of the verbs or auxiliaries in the construction.

(430) a. dat ik Jan {op} had {op} willen {op} bellen
that I John {up} had {up} want {up} call
'that I had wanted to call John up'

b. dat hij mij {weg} zou {weg} kunnen {weg} horen {weg} rijden
that he me {away} would {away} can {away} hear {away} drive
'that he would be able to hear me drive away

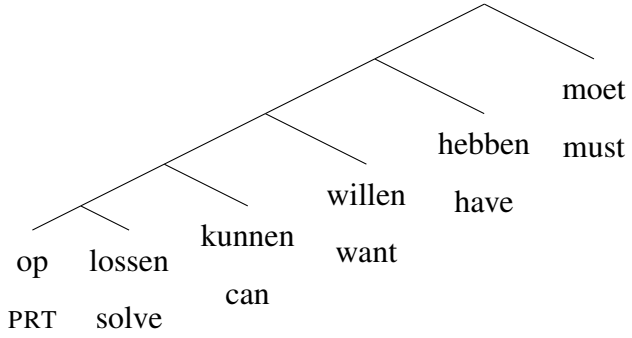
c. dat hij dat probleem {op} moet {op} hebben {op} willen {op} kunnen {op}
that he that problem {up} must {up} have {up} want {up} can {up}
lossen
solve
'that he must have wanted to be able to solve that problem'

(Bennis 1992:38f, modified)

Bennis notes that the intermediate positions of the particle are not always considered as acceptable as cases where it surfaces *in situ* or adjacent to the verb, but states that "native speakers tend to accept at least some of the intermediate cases" and "all speakers have a clear contrast between any of the above mentioned examples and ungrammatical examples in which the particle follows the verbal cluster" (p. 39).

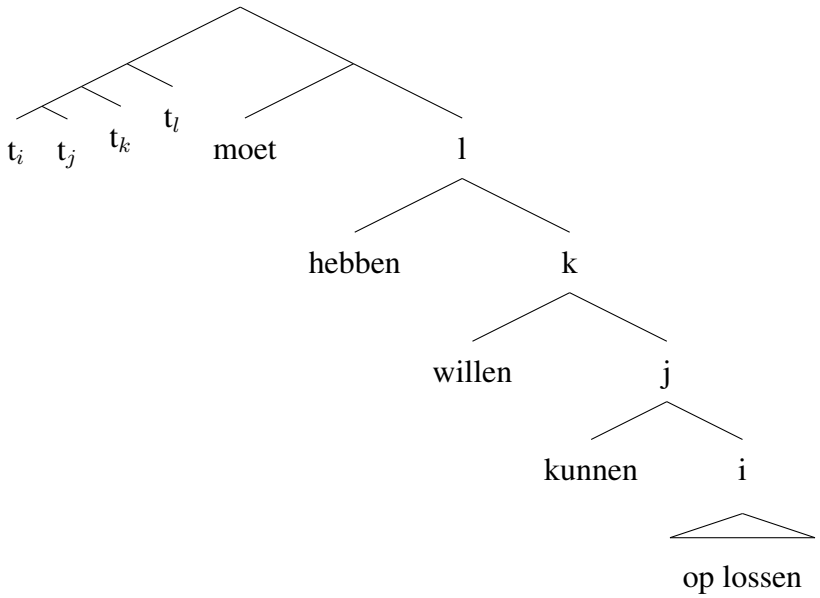
Though I have already claimed that particles cannot raise together with the verb in Verb-Raising constructions, let us ignore this claim for now and consider how a particle could come to be located in any of the positions above if it must raise as a head with the verb. We start with an underlying structure like that below.

(431)



From here, the verb should be able to raise alone or as a head with the particle. As it raises, it adjoins to/Conflates with the next highest head, and this proceeds in roll-up fashion. When the particle and verb surface adjacent to each other, we end up with a structure like the following. I indicate movement through the use of traces for clarity of exposition only.

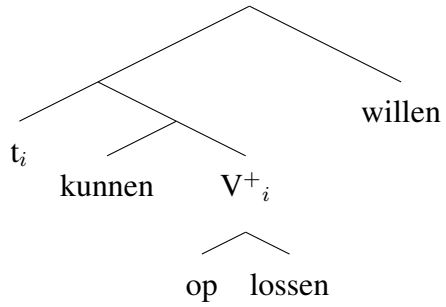
(432)



The problem arises when we try to strand a particle in an intermediate position. This is entirely impossible in the Conflation account of head movement, and it is similarly problematic for other accounts of head movement, even if one allows excorporation. This is quite apparent in the structure below, representing the first step in deriving *moet hebben willen op*

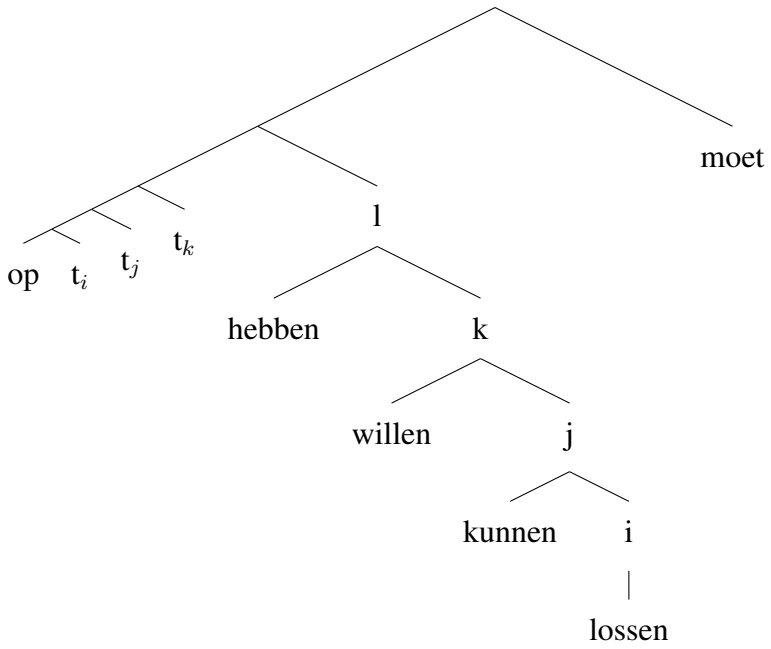
kunnen lossen. Unless we develop an account allowing *kunnen*, *op* and *lossen* to raise right of *willen* in separate movements, it is not possible for *op* to come to precede *kunnen* while raising past *willen*.

(433)



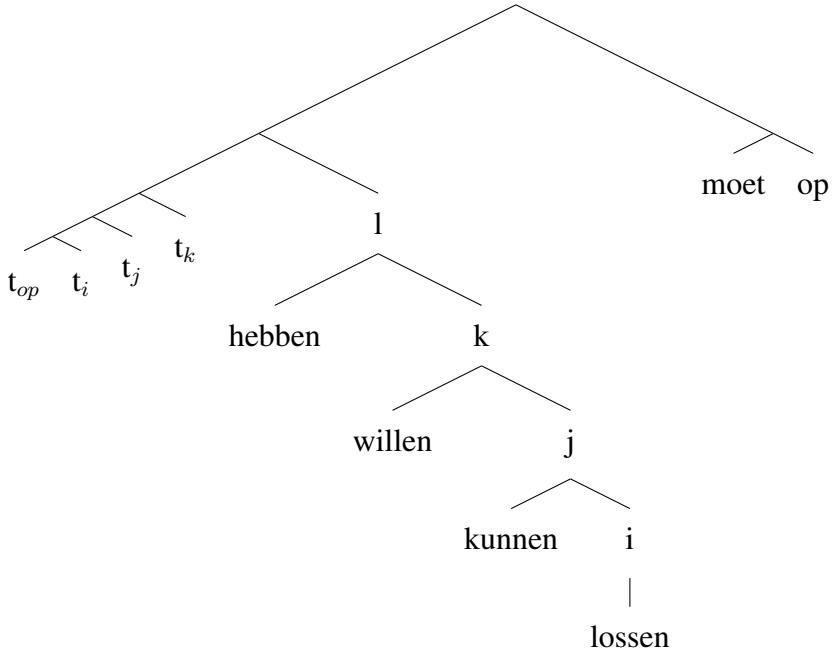
Let us consider another possibility: the particle may adjoin to/Conflate with <u>any</u> verb or auxiliary X upon X's merger into the derivation, before the verbal complex adjoins to/Conflates with X. I consider below the order *dat hij dat probleem __ moet op hebben willen kunnen lossen*, where all material to the right of *moet* has raised, but the particle and verb it initially merged with are split up. When *moet* merges into the syntax, we have the following structure.

(434)

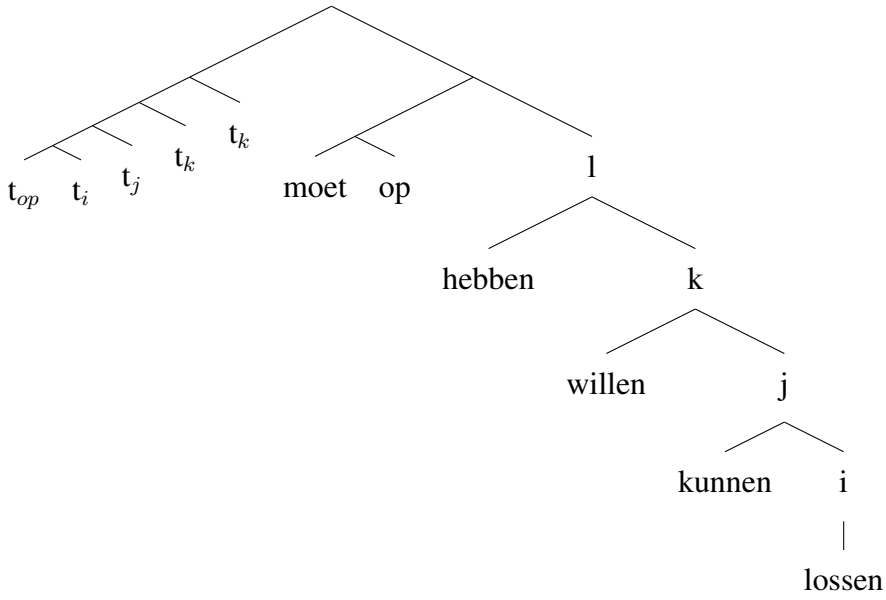


If the particle adjoins to/Conflates with *moet* before node *l*, we can derive the expected order.

(435) a.



b.



But while this derives the correct word order (and a similar derivation could be used for the other intermediate positions of the particle), it also requires the we allow the to particle across head *l*, violating the Minimal Link Condition, and it requires the verb to have some feature(s) responsible for both the particle and the lower verb/auxiliary complex adjoining to it. Further, if the particle is allowed to incorporate in this manner, it should also be possible for verbal heads to 'skip' an intermediate head. In a three-verb cluster V_3-V_2-V_1 (V_3 being the most embedded), then, we should be able to derive any of the six logically possible

orders, despite the order V_2-V_1-V_3 being absent in all OV Germanic languages (Wurmbrand 2000; Everaert & van Riemsdijk 2005:Ch. 75). Specifically, from the underlying order [[[V_3] V_2] V_1], V_3 should be able to skip V_2 to adjoin to V_1, but this is not possible. I therefore reject this possibility.

4.4.2.2 The Solution

A final solution is that particle movement in Verb Raising constructions is phonological, altering the precedence relations of pairs of words that normally arise during the mapping from syntax to phonology. Consider first how this applies to the Verb Raising construction in the absence of a particle. The examples below show the double modal construction in Swiss German, though there are a number of constructions involving modals, auxiliaries and verbs which allow or require verb raising.[32] (437) provides an arboreal representation of the underlying syntactic hierarchy of heads 1-3 in three-verb Verb Raising constructions

(436) Swiss German (Wurmbrand 2000:27, adapted, citing Schönenberger 1995:382 and van Riemsdijk (p.c.))

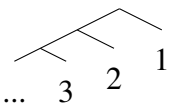
a. das er ... **wil** chöne vor-singe
that he ... wants(1) can(2) PART-sing(3)

b. % das er ... **wil** vor-singe chöne
that he ... wants(1) PART-sing(3) chöne(2)

c. % das er ... vor-singe **wil** chöne
that he ... PART-sing(3) wants(1) chöne(2)

d. das er ... vor-singe chöne **wil**
that he ... textscpart-sing(3) chöne(2) wants(1)

(437)



[32] Whether verb raising is disallowed, allowed or required depends both on the language/dialect and the particular construction. For an overview, see Wurmbrand (2000) and Everaert & van Riemsdijk (2005:Ch. 75).

The four orders above exemplify all but one of the orders which are found in the OV West Germanic languages. Afrikaans and West Flemish also exhibit the order 2-3-1 in the *Infinitivus Pro Participio* construction. As noted above, it appears that none of the languages exhibit the order 2-1-3.

Let us assume that at some point in the syntax-to-phonology mapping, the linear order of each head with respect to the next highest head is normally determined by some linearization algorithm, such that given the structure in (437) in a head final language, the orders 3 > 2 and 2 > 1 are determined by this algorithm.[33] Let us also assume that no ordering relation between 3 and 1 is explicitly determined. Under normal circumstances (e.g. in the absence of the Verb Raising function), the heads will be spelled out 3-2-1, as in (436d) (I generally reserve > to indicate pairwise precedence relations determined by the linearization algorithm, and I use - when showing actual surface order). I will argue that the Verb Raising function has the effect of altering the precedence relations between heads in the verbal complex. I assume that Verb Raising operates cyclically and may only shift words to the right.

Now, consider the application of the Verb Raising function to the structure in (437). If VR applies in the first cycle, it operates on the precedence relation 3 > 2, reordering them to create the new relation 2 > 3. The next cycle adds the next head, 1, to the right. Verb Raising may now alter the precedence relation 2 > 1. If it does, both 2 and 3 must shift to the right of 1, creating 1-2-3, in order to satisfy both precedence relations 1 > 2 and 2 > 3. If Verb Raising does not apply in this second cycle, no reordering will occur, and the final output will be 2-3-1. The table below demonstrates how this generates all possible orderings. For each letter, the top row(s) represent(s) the linear order as it is built up, while the last row represents the pairwise precedence relations.

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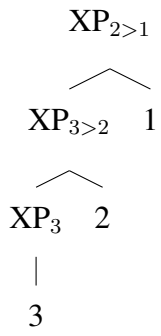
[33] This would possibly occur whenever a head merges with another head or phrase. When this head Conflates with the lower head, the linear order is determined (often reversed) and the p-signatures combined. When Conflation does not occur, the linear order is determined without combining the p-signatures.

(438) Syntax → Phonology without Verb Raising



(439) Syntax → Phonology with Verb Raising

	Input	Reorder	Expand	Reorder	Output
		3 > 2 → 2 > 3		2 > 1 → 1 > 2	
a.	3 - 2	NO	3 - 2 + 1	NO	3 - 2 - 1
	3 > 2		3 > 2, 2 > 1		
b.	3 - 2	2 - 3	2 - 3 + 1	NO	2 - 3 - 1
	3 > 2	2 > 3	2 > 3, 2 > 1		
c.	3 - 2	2 - 3	2 - 3 + 1	1 - 2 - 3	1 - 2 - 3
	3 > 2	2 > 3	2 > 3, 2 > 1	2 > 3, 1 > 2	
d.	3 - 2		3 - 2 + 1	3 - 1 - 2	3 - 1 - 2
		NO		1 - 3 - 2	1 - 3 - 2
	3 > 2		3 > 2, 2 > 1	3 > 2, 1 > 2	

Note that the unattested order, 2-1-3, is not possible given the algorithm described above. Consider why. If 3 > 2 is reordered to yield 2 > 3, we arrive at 2-3-1 at the next cycle. The precedence relations at this point are 2 > 3, 2 > 1. If Verb Raising applies, it will alter the relation 2 > 1 to 1 > 2, not yielding the intended order. If Verb Raising does not apply, nothing will raise rightward, and the word order will remain unaffected.

Consider now how we can account for the behavior or particles in the Verb Raising construction. First, recall that modified particles may not participate in Verb Raising constructions, nor may canonical resultative secondary predicates. This indicates that only nonprojecting particles may participate. The reason for this, I believe, is also phonological. Both a projecting particle and a resultative secondary predicate head their own syntactic phrases, whereas a nonprojecting particle does not. Following Selkirk (1986), the right edges of XPs map to the right edges of prosodic phrases (φ below). As a result, in the OV languages, projecting particles and resultative secondary predicates are mapped to distinct prosodic phrases from the verb whereas nonprojecting particles are mapped to the same prosodic phrase. This is represented below.

(440) a. [[...]$_{PrtP/ResP \rightarrow \varphi}$ V]$_{VP \rightarrow \varphi}$

b. [Prt V]$_{VP \rightarrow \varphi}$

If Verb Raising is phonological, then it plausibly affects all elements within the prosodic phrases over which it operates.[34] When Verb Raising results in a rightward shift of the verb, the particle may also shift rightward because it belongs to the same prosodic phrase as the verb. In contrast, projecting particles or resultative secondary predicates will not participate because they are mapped to different prosodic phrases from the verb.

Now that we know why only nonprojecting particles participate in Verb Raising, consider how they come to surface in the five difference positions we saw in (430c), repeated below with numbers added.

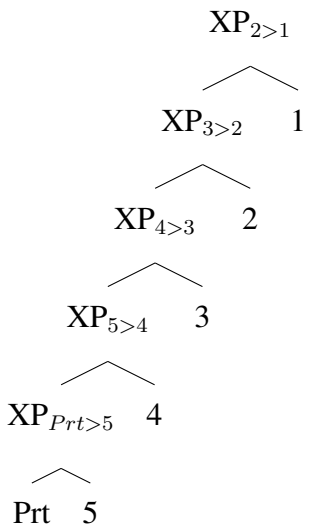
(441) dat hij dat probleem {op} moet(1) {op} hebben(2) {op} willen(3) {op} kunnen(4)
that he that problem {up} must {up} have {up} want {up} can
{op} lossen(5)
{up} solve
'that he must have wanted to be able to solve that problem'

(Bennis 1992:38f, modified)

[34] I suspect that Verb Raising may occur as a means to allow the conflation of prosodic phrases—each head in the verbal cluster maps to a distinct prosodic phrase under Selkirk's mapping hypothesis—but this requires further examination.

Assuming *lossen*(5) is the most embedded verb underlyingly and *moet*(1) the least, it must be the case that the Verb Raising function has reordered all precedence relations in (441), with the exception of the precedence relation between the verb and particle. This will only allow the five words in question to surface in the order 1-2-3-4-5, as in (441). In contrast, the particle need only precede *lossen*(5), which it does in every position it appears in in (441). It is standardly assumed that Verb Raising is triggered above the most deeply embedded verb, so the linear order of the verb *vis à vis* the particle will not be affected. The table below demonstrates how each of these order can be derived cyclically, based on the description of the Verb Raising function above. Rows (443b)-(443e) indicate different stages at which the particle is shifted rightward when compared to (443a). Row (443f) keeps track of the precedence relations throughout.

(442) Syntax → Phonology without Verb Raising



(443) Verb Raising

	I	R	E	R	E	R	E	R	E	R
				5>4→4>5		4>3→3>4		3>2→2>3		2>1→1>2
a.	P-5	n/a	P-5-4	P-4-5	P-4-5-3	P-3-4-5	P-3-4-5-2	P-2-3-4-5	P-2-3-4-5-1	P-1-2-3-4-5
b.				4-P-5	4-P-5-3	3-4-P-5	3-4-P-5-2	2-3-4-P-5	2-3-4-P-5-1	1-2-3-4-P-5
c.						3-P-4-5	3-P-4-5-2	2-3-P-4-5	2-3-P-4-5-1	1-2-3-P-4-5
d.								2-P-3-4-5	2-P-3-4-5-1	1-2-P-3-4-5
e.										1-P-2-3-4-5
f.	P>5		P>5, 5>4	P>5, 4>5	P>5, 4>5	P>5, 4>5	P>5, 4>5	P>5, 4>5	P>5, 4>5	P>5, 4>5
					4>3	3>4	3>4, 3>2	3>4, 2>3	3>4, 2>3, 2>1	3>4, 2>3, 1>2

Finally, recall that the infinitive marker *te* in Dutch must appear between the particle and verb even when both have raised in a Verb Raising construction.

(426) a. omdat hij mij __ probeert op te bellen

b. omdat hij mij op __ probeert te bellen
because he me up tries to call
'because he tries to call me up' (Haiden 2005, adapted)

This follows if, as I have claimed above, the verb's p-signature Conflates with *te*, making them inseparable. The particle *op* only needs to precede *bellen*, so the intervention of the additional phonological material is irrelevant.

In sum, despite the common assumption that the Verb Raising construction requires the verb and particle to move as a syntactic head, I have demonstrated that this is not, in fact, possible. I showed that such an account cannot explain why the infinitival marker must intervene between the verb and particle or how a particle may come to be located in a rightward shifted position that is not verb-adjacent. I proposed a solution to these problems involving a reordering function that operates during the mapping from syntax to phonology. This solution additionally allows for the derivation of the five possible orderings of a three-verb cluster in a Verb Raising construction while disallowing the remaining, logically possible but unattested order. Although successful in these regards, the proposal is admittedly *ad hoc* at the moment in the absence of additional cross-linguistic support.

4.4.3 Inversion Constructions

The final complication we must overcome before accepting the claim that nonprojecting particles remain *in situ* in the syntax is their behavior in inversion constructions. Above, we saw that when the VS order arises through V-to-C movement in any Germanic language, the particle is obligatorily stranded. The VS order can also be found in quotative inversion constructions, presentational-*there* constructions and locative inversion constructions.

(444) "Get back!" shouted {out} John {out} (to his friend).

(445) From under the bridge there came out a troll.

(446) From under the bridge came out a troll.

Unlike what we saw in the case of V-to-C movement, in these instances the particle must or may (depending on the construction) precede the subject. In this section, I use existing accounts of these constructions to show that there is no need to assume a particle undergoes head movement with a verb to pre-subject position, allowing us to maintain the claim that nonprojecting particles remain *in situ*.

4.4.3.1 Quotative Inversion

Perhaps the most problematic construction for the claim that the particle does not raise with the verb is the quotative inversion construction. I begin with an overview of the relevant data.

In quotative inversion constructions, when the inverted verb is part of a particle verb, the particle may optionally precede the subject along with the verb or it may remain after the subject.

(447) a. "This won't work," shouted out John angrily.

b. "This won't work," shouted John out angrily. (Toivonen 2003:176)

A modified particle may not precede the subject, while it is at least somewhat acceptable when occurring after the particle (some speakers find modified particles in quotative inversion constructions more acceptable when accompanied by an adjunct).[35]

(448) * "Back to the bunker!" yelled right out the captain to the troops.

(Collins & Branigan 1997:5)

(449) "This won't work," shouted John right out %(angrily).

When the addressee is mentioned in a *to*-PP, it must follow the subject and particle.

[35] Collins & Branigan (1997:5, fn.3) note that an anonymous reviewer rates (448) as marginally grammatical, while the authors find it ungrammatical. I will consider the example ungrammatical.

(450) a. * “Don’t drop the bricks!” shouted (out) to Carl Trudy.

b. “Don’t drop the bricks!” shouted {out} Trudy {out} to Carl {*out}.

(Collins & Branigan 1997:5, modified)

The quotative inversion construction does not appear to have received significant attention. Until recently, Collins & Branigan (1997) was the only published paper I am aware of that took quotative inversion as the object of investigation, though the construction is occasionally found in studies of more general phenomena, such as Alexiadou & Anagnostopoulou’s (2001) *Subject-in-situ Generalization*. These authors maintain that the subject remains *in situ* in quotative inversion constructions, the verb then raising around it. If this is true, the fact that a particle may also precede the subject, as in (447a), suggests that the particle can move with the verb as a type of complex head, in contrast with my claims. Indeed, several authors have argued for such an approach. Collins & Branigan (1997:4f) assume that in quotative-inversion constructions, a particle incorporates into the verb before it raises. Toivonen (2003:175f) argues that the verb and (pre-object) particle always form a lexical unit in English, and as a result they have little problem inverting together. McIntyre (2011a,b) likewise argues that the verb and particle form a complex head, stressing that the quotative inversion construction is seemingly quite problematic for non-complex-head approaches, which have not tackled this data.

Recall that I have argued above against the movement of the verb and particle as a complex head on several grounds. The proper placement of inflectional suffixes in English and OV Germanic languages becomes problematic and would require additional constraints, thereby complicating the grammar. I also showed in §4.4 that even if particles may raise with verbs, one would need to posit a limit on how high a particle could move and motivate excorporation at that point (a mechanism whose existence is often denied; see Baker 1988:73, among many others). This data is at odds with the quotative inversion construction if the particle indeed raises with the verb. There are, however, reasons to believe that the account provided by Collins & Branigan (1997) and other similar accounts are not correct.

In a recent analysis, Bruening (to appeara) offers several criticisms of Collins & Branigan (1997) and Alexiadou & Anagnostopoulou (2001), providing an alternative account to quotative inversion (among other constructions) which adopts a view of particles as optionally projecting heads in accounting for data like that above. Below, I highlight only some of the points relevant to quotative inversion and the particle-verb construction.

Contra Collins & Branigan (1997), Bruening argues that the subject does not remain *in situ* in quotative inversion constructions; rather, he claims that it raises into SpecIP (SpecTP for him). One of his arguments in favor of this claim comes from the behavior of tag questions in quotative inversion constructions. Normally, pronouns in tag questions must correspond to the phrase in SpecIP. In (451a), *they* corresponds to the conjoined sentential subject while in (451b) *it* corresponds to the expletive. In the presentational-*there* construction in (452) and the locative-inversion construction in (453)—where the subject follows the verb like it does in quotative inversion constructions—tag questions correspond not to the 'logical' subject, but to the expletive in SpecIP (which is covert in (453b)).

(451) a. That that theory is wrong and that it is overly complicated are (both) generally acknowledged, aren't they?

b. It is generally acknowledged that that theory is wrong and that it is overly complicated, isn't it? (*aren't they?) (Bruening to appeara:7)

(452) a. Afterwards, violent earthquakes and floods occurred, didn't they?

b. Afterwards there occurred violent earthquakes and floods, didn't there? (*didn't they?) (Bruening to appeara:7)

(453) a. A fire-breathing dragon stormed out of the cave, didn't it / ?one?

b. Out of the cave stormed a fire-breathing dragon, didn't there? (*didn't it / ??didn't one?) (Bruening to appeara:8)

This contrasts with quotative inversion, where the pronoun in the tag question corresponds

to the post-verbal subject. This indicates that the post-verbal subject is actually in SpecIP.

(454) a. "Aaargh!" screamed a woman, didn't she/one? (*didn't there/it)

b. "Yes," said John, didn't he? (*didn't there/it) (Bruening to appeara:8)

If the subject has raised to SpecIP, then the verb must raise higher than this. Bruening argues that the verb raises to SpecCP as part of a larger constituent. Among his arguments favoring this conclusion, he points out that verb-phrase-modifying adverbs are able to appear left of the verb in quotative inversion, shown in (455a), even though they are not otherwise allowed in front of the subject, as (456) demonstrates. This is not accounted for if the verb raises to C via head-movement.

(455) a. "I'm leaving!" abruptly shouted John.

b. "I'm leaving!" John shouted abruptly.

c. * "I'm leaving!" abruptly John shouted.

d. "I'm leaving!" John abruptly shouted. (Bruening to appeara:13)

(456) (*Abruptly) "I'm leaving!" (*abruptly) John (abruptly) shouted (abruptly).

(Bruening to appeara:13)

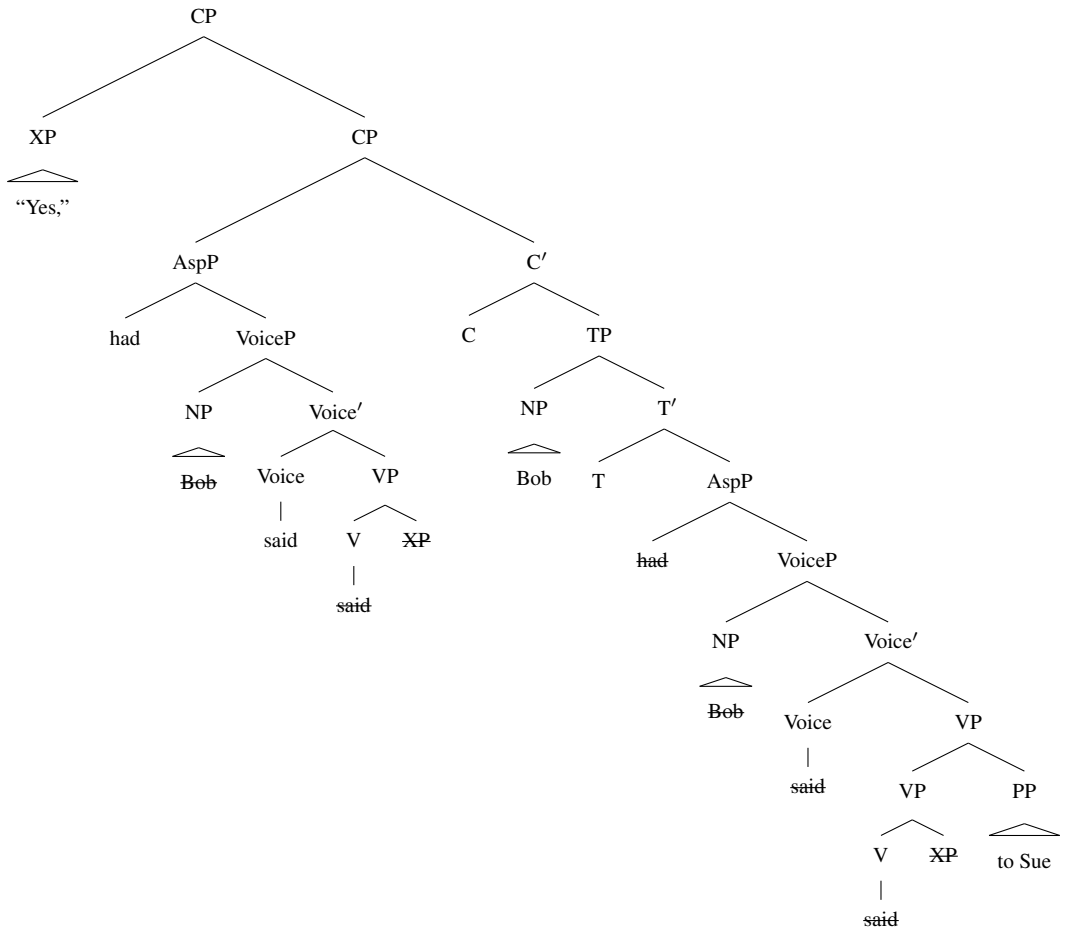
Also supporting the conclusion that verbs raise as phrases, Bruening notes that the auxiliary *have* is marginally allowed in quotative inversion constructions.

(457) a. ? "Yippee!" has said Gil on more than one occasion.

b. ? "Yes," had responded Gil before I had even finished.(Bruening to appeara:12)

Thus far, we have seen that the subject in quotative inverstion constructions is in SpecIP/TP and that the verb which precedes it appears to move as part of a phrase which can include verb-phrase modifiers and the auxiliary *have*. Bruening proposes to account for this as follows. The verb raises to Voice (*v* in my account) within AspP as usual, where it remains. Next, the complement of T, corresponding to AspP in the structure below, moves to SpecCP. Finally, the quote adjoins to CP. This is represented in the structure below, which represents the final output of the derivation.

(458)



(Bruening to appeara:18, adapted)

Given the structure above, a nonprojecting particle comes to precede the subject with the verb because it is part of the larger phrase which has moved. The particle itself need not undergo head movement, in accordance with the claims in this dissertation.

We still need to explain why a projecting particle must follow the subject in quotative inversion constructions. The reason given for this is also the reason the PP in the structure above has not moved with the rest of the phrase. Bruening argues that the PP is late-adjoined to the lower VP copy in order to avoid violating the phonological alignment constraint defined below, which is responsible for the inversion itself. This phonological constraint, which is triggered by a type of C (C*), says that the complement of C* must be aligned with the

tensed verb.

(459) Align V-C (English): (Bruening to appeara:19)

Align(Comp-C*, L, V_{tense}, L/R)

(The left edge of the complement of C* (i.e., TP) must be aligned with an edge of V_{tense}.)

Were the PP in (458) or a projecting particle to raise with AspP, the tensed verb would no longer be aligned with the edge of C*. By late-merged adjoining these into the structure, the alignment constraint above is not violated.

A note about this proposal is in order. Bruening is not explicit about whether he believes that the particle raises to *v*/Voice as part of a complex head or whether the verbal head excorporates from the complex V and raises alone. If the former, then 'V_{tense}' is located in Voice and consists of both the verb and particle and nothing more needs to be said. In contrast, in the current analysis the tensed verb raises to *v*/Voice (or its p-signature does) while the particle remains *in situ* under V, so V_{tense} in *v*/Voice is arguably not aligned with the edge of C*. We can overcome this by assuming that the alignment constraint above is only concerned with aligning the prosodic word containing the tensed verb with C*. I suggested earlier that nonprojecting particles cannot constitute a prosodic phrase and must therefore become part of the preceding prosodic phrase, presumably forming a prosodic word with the verb. As such, the prosodic word containing the tensed verb remains adjacent to the subject even when a particle intervenes between the tensed verb and the subject.

In sum, although both a particle and verb may precede the subject in quotative inversion constructions, it is not necessary to assume that they have raised together as a syntactic head. Bruening's (to appeara) account of the quotative inversion construction shows that verbs and particles comes to precede the subject by moving as part of a larger phrase, and his phonological alignment constraint can explain why projecting particles nonetheless remain after the subject.

4.4.3.2 Presentational-*there* Constructions and Locative Inversion

Like the quotative inversion construction, the presentational-*there* construction and the locative inversion construction allow a verb and particle to occur in pre-subject position, which might be taken to suggest that the verb and particle have undergone head-movement around the subject. In this section, I argue that this is not the case.

In both presentational-*there* and locative inversion constructions, what normally corresponds to the subject of a simplex sentence appears in post-verbal position, while *there* or a PP occurs in pre-verbal position. Both types of constructions are only possible with intransitive constructions, including unergatives, unaccusatives and passives.

In a presentational-*there* construction, *there* appears in pre-verbal position while the subject appears in post-verbal position. The construction can be found with particle verbs, as the examples below demonstrate, though it appears to be a rather rare occurrence.

(460) a. From its dark doorway there came out a vile, sour odour, a mixture of slops and synthetic soup...[36]

b. Then there came out a spirit... (KJV 2 Chronicles 18:20)

c. Now there cried out a certain woman of the wives of the sons of the prophets to Elisha... (KJV 2 Kings 4:1)

d. ...there went out a decree from Caesar Augustus... (KJV Luke 2:1)

e. But there went up a mist from the earth... (KJV Genesis 2:6)

In locative-inversion constructions, a PP appears in pre-verbal position, while the subject appears in post-verbal position. As with presentational-*there* constructions, the particle preferably remains adjacent to the verb, as in (461) below. Alternatively, the particle may project and appear as the inverted PP, as in (462) (see Cappelle 2002 regarding this use).

(461) ...and from the bush ran out a squirrel...[37]

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[36] From George Orwell's *Down and Out in Paris and London*.

[37] http://www.fanfiction.net/s/8798655/1/Camaraderie, retrieved 3/24/2013.

(462) a. I sat on my porch with my eyes glued to the statue to watch its removal but, alas, the lunch bell took me to the dining room and in my absence, **down had come** the statues and **off came** the horse's head. (Cappelle 2002:46)[38]

b. Away ran the thief. (Cappelle 2002:57)

A common analysis of the post-verbal nP in locative-inversion constructions places it in a right-linearized position in VP/*v*P, either as an adjoined position or as a right-specifier (Bresnan 1994; Levin & Rappaport Hovav 1995; Doggett 2004; Bruening 2010b). Doggett (2004) and Bruening (2010b) make similar proposals for the position of the post-verbal nP in presentational-*there* constructions as well, and I will adopt this type of analysis here.

Supporting this type of proposal, Doggett (2004) shows that the underlying object of passive locative inversion constructions involving particle verbs must follow the particle. This is expected if surface subjects are in a right-specifier position and particles remain *in situ*.[39]

(463) a. In the notebook were written down the numbers.

b. On the blackboard were spelled out our names.

c. On the shelf were put down some books. (Doggett 2004:39)

(464) a. * In the notebook were written the numbers down.

b. * On the blackboard were spelled our names out.

c. * On the shelf were put some books down. (Doggett 2004:39)

As we have seen in this section and the previous one, constructions which allow inversion of a subject and a particle verb can be accounted for without resorting to the claim that the verb and particle undergo head movement together. Furthermore, adopting existing analyses of the quotative inversion construction, the presentational-*there* construction and the locative inversion construction, I demonstrated how we can account for the behavior of

[38] Citing http://www.anlex.com/lydiamantlefox.htm

[39] Similar data for the continuous order in Swedish is available in Toivonen (2003:19). The data is fully compatible with the structure adopted here.

the particle verb in these constructions while maintaining this thesis' central claims regarding the particle-verb construction.

4.5 Transparent vs. Nontransparent Particles

Until now, I have not argued for distinct accounts of particle-verb constructions containing transparent versus nontransparent particles. Several authors, however, have argued that particle-verb constructions come in multiple syntactic varieties (not to be confused with the claim that there is more than one semantic class of particles). Aarts (1989) and Vinka (1999) argue for a distinction between particles which can appears as predicates without the verb and those which cannot. Fraser (1965, 1976) argues in favor of distinguishing directional particles from non-directional particles. Ishikawa (1999) distinguishes between what he refers to as 'pure idiom', 'simple combination' and 'hybrid idiom' particle verbs. Wurmbrand (2000) distinguishes between 'transparent' and '(semi-)idiomatic' particle-verb constructions. Cappelle (2005) also argues for a distinction between literal particles and non-literal particles, where the literal particles are, more or less, those which can appear as predicates on their own. This includes not only directional particles, but also particles like *on* in *turn the lights on* / *the lights are on*. Blom (2005) claims that particles which may topicalize are structurally ambiguous between particles and resultatives, other particles not being able to appear in the resultative construction. Los et al. (2012) provide a discussion in a similar vein to the one I provide below, concluding that only certain particles optionally project phrases (and other particles do not project).

Indeed, at first glance, there is some evidence suggesting that there are two different syntactic types of particles. This data will be presented in sections §4.5.1-§4.5.4. In §4.5.5, however, I will follow Zeller (2001) in claiming that the distributional differences between what I call 'transparent' and 'nontransparent' particles is due to a lexico-syntactic restriction that exists for some phrasal idioms which restricts the syntactic configurations in which their idiomatic reading may arise.[40] In brief, the special meanings of certain particles and/or

[40] Although I divide particles into two classes, they are more appropriately viewed as existing on a continuum of transparency. For the sake of exposition, I will attempt to choose particle verbs closer to the edges of the

verbs arises only when the particle surfaces as the head of the complement of the (syntactic features of the) verb at Spell-Out (where the head of a nonprojecting head is itself). Support for this claim is the observation that the syntactic distribution of the nontransparent particles is a subset of the distribution of transparent particles; in all of the distributional differences I consider below, it is always the transparent particles which have the greater distribution. Unlike nontransparent particles, the meanings of transparent particles are freely available, not restricted to a specific syntactic configuration.

Before continuing, I must stress that my use of the term 'transparent' is not the same as 'predicational' or 'directional'. As I showed in the previous chapter, there is sufficient reason to believe that particles are, in most or all cases, semantic predicates; however, not all of these are transparent in that the meaning of the particle is not always available when used in isolation (i.e. without a verb). Particles whose meanings arise regularly and without the need for special contexts are considered transparent. The class of transparent particles includes particles used with basic spatial meanings and some of the metaphorical extensions of the spatial meanings (e.g. *up* for 'increase'). There are also several highly-transparent particle uses which are not easily derived from the spatial meaning, such as the use of *on*/*off* with reference to an electrical or mechanical device.

Throughout the subsections below, I will capitalize on the similarities between the distribution of nontransparent particle verbs and idiomatic V-(nP)-PP combinations (where the choice of nP is free), which were first noted in Emonds (1972), though I also include idioms with other syntactic confgurations as well. In the V-(nP)-PP idioms I examine, attempts to displace the PP result in a loss of the idiomatic meaning, just as with nontransparent particle verbs, indicating that the meanings of some phrasal 'idioms' are indeed restricted to specific surface syntactic configurations.

4.5.1 Aarts (1989)

First, let us examine the arguments in Aarts (1989) which lead him to claim there to be a syntactic distinction between two types of verb-particle combinations (reviewed in

continuum.

§2.5.2). Aarts notes that some transparent particles easily surface as predicates of an nP outside of the particle-verb construction. He notes that such strings may appear in *with*-nP-prt adjuncts (465a), in subject positions and after the comparative preposition *than* (465b), as complements in copular constructions (465c), and in verbless imperatives (465d).

(465) a. He propped the bonnet of the car up; *with the bonnet up* he then drove off.

b. *The oven off* is less dangerous *than the oven on*.

c. so that's # *Barrington out* # (where # indicates a tone unit boundary)

d. *Hands up*! (Aarts 1989:280ff)

In contrast, less transparent particle meanings are unavailable in these constructions.

(466) a. * He brought the kids up by himself; *with the kids up* he could go on holiday.

b. * *The prize up* is better *than the prize away*.

(cf. *Giving the prize up* is better than *giving the prize away*.)

c. * ...and that's *the word up*! (cf. Look the word up.)

d. * *The word up*! (cf. Look the word up!)

(466a) from (Aarts 1989:280)

Based on data like that above, Aarts (1989) concludes that transparent particles are predicates heading small-clauses, but that nontransparent particles cannot be viewed as predicates or heads of small clauses. But while the examples above demonstrate that there are certain constructions in which only transparent particles may appear, it is not necessary to conclude that there is a syntactic distinction between the particles. Instead, the meanings of the particles in (466) are unavailable without the proper context. The astute reader will point out that in (466d), there does appear to be context, but notice that the particle does not appear as the surface complement of a verb. The 'context' required for a particle's nontransparent reading to arise is not simply discourse or pragmatic context; rather, it is syntactic context. Because the particle does not occur in the appropriate syntactic configuration, the intended nontransparent reading is unavailable.

We find the same to be true for many V-(nP)-PP idioms, where the choice of nP is free. (467) is a transitive V-(nP)-PP idiom and (468) is an unaccusative V-(nP)-PP idiom. The example in (469) is not idiomatic and serves to contrast with (467)-(468).

(467) a. John *drove* his sister *up the wall*. ('irritate')

b. * With his sister up the wall, John left, having accomplished his goal.

(468) a. John got *bent out of shape* over the perceived insult. ('very upset')

b. * With John (so) out of shape, we are unable to reason with him.

(ungrammatical on intended reading)

(469) a. John drove his car under the bridge.

b. With his car (still) under the bridge, John took a nap.

The idiomatic readings in (467)-(468) appear fixed to a particular syntactic configuration. Even if the (b) sentences immediately follow the (a) sentences, such that the discourse context should strongly favor the idiomatic readings of the PPs in question, (467b) and (468b) are infelicitous on the intended idiomatic readings. To my knowledge, syntacticians generally do not assume that the structure of idiomatic V-(nP)-PP constructions like that in (467) is distinct from nonidiomatic V-(nP)-PP constructions like that in (469), yet they do not share the same distributional possibilities. In the same manner, the contrast between (465) and (466) does not prove that we need to syntactically distinguish transparent from nontransparent particles rather than tying in an idiomatic reading to a syntactic configuration.[41]

[41] It is certainly not the case that all idioms are subject to restrictions on syntactic configuration. Consider, for example, the two V-nP idioms *kick the bucket* 'die' and *bury the hatchet* 'make peace'. While the former idiom does not allow displacement of the nP, the latter does.

i a. John kicked the bucket.

b. * With the bucket kicked, John journeyed to Heaven.

c. * After the/his bucket was kicked, John journeyed to Heaven.

ii a. John and Bill buried the hatchet.

b. With the hatchet buried, John and Bill shared a case of beer.

c. After the hatchet was buried, John and Bill shared a case of beer.

4.5.2 PP with nP

Another construction showing differing distributions of particles is the PP-*with*-nP construction, which functions as a type of imperative or propositive with the PP denoting the result state of the complement of *with* (also discussed in Emonds 1972; Jackendoff 1973, 2002a; Cappelle 2005).[42] Transparent particles generally seem to be able to appear in this construction.

(470) a. On with the show!

b. Off with her head!

c. Away with your evil plan!

d. Out with the old, in with the new.

e. Down with Chomsky and modularity. Up with Cognitive Grammar and related theories![43] (Cappelle 2005:242)

Each of the examples above can be placed in a particle-verb construction without *with* and retain the same meaning. This is demonstrated below.

Thus, while the lexical representation of some idioms includes information about syntactic configuration in addition to the individual lexical subparts, the lexical representation of other idioms lacks reference to the syntactic configuration.

[42] Toivonen (2003:44) shows that this same construction is possible in Swedish. In German, it has been called the verbless-directive or the *mit*-directive (Jacobs 2008; Müller 2009).

[43] listserv.brown.edu/archives/cgi-bin/wa?A2=ind9904d&L=conlang&F=&S=&P=16245, accessed 25 June 2004

(471) a. ...a new emcee had to be picked and Drew Carey was chosen to *carry on the show*.[44]

b. Chop / take off her head!

c. Take away your evil plan!

d. Take out the old, bring in the new.

e. Take down Chomsky and modularity. Bring / take up Cognitive Grammar and related theories!

Less transparent particle meanings do not occur in this construction.

(472) a. * Up with the word! (cf. Look up the word!)

b. * Off with the project! (cf. Put the project off (until tomorrow)!)

c. * Off/Up with the table! (cf. Clean off/up the table!)

d. * Out with the details (on reading 'Sort out the details!')

As claimed in the previous subsection, the fact that less transparent particle meanings are unavailable in PP-*with*-nP constructions is because those meanings are licensed only in a specific syntactic configuration. Transparent particles are not subject to this restriction, thus they may easily occur without the aid of a verb in this construction.

With respect to transparent particles, it should be noted that it is not the case that all transparent particles appear in all of the constructions above. There are additional semantic restrictions for each construction limiting what can felicitously occur in it. This is demonstrated in the examples below, where the two uses of *off* may appear in a *with*-nP-prt adjunct but not in a PP-*with*-nP construction.

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[44] http://audioo.com/blog/2010/10/voices-lunch-time-price/, accessed 15 January 2011

(473) a. The boss gave the workers the day off. With the day off, many of them decided to go golfing.

b. * Off with the day!

c. John called off the bet. With the bet off, there was no need to watch the game.

d. * Off with the bet!

The examples in (473) further highlight that we should not take distributional differences between types of particles as unequivocal evidence that they are underlyingly distinct syntactically. If this were the case, we would certainly need more than two syntactic classes of particles, as the transparent particles exhibit variation in which constructions they occur in.

4.5.3 Particle Preposing

Preposing of particles in constructions both with and without subject-auxiliary inversion is also possible only with transparent particles (Emonds 1972:553f; Cappelle 2002, 2005:118; also Toivonen 2003:144ff for similar data in Swedish, Zeller 2001:§2.4 for German and Los et al. 2012:23ff for Dutch). In the (a) examples below, the particle has simply fronted, while the (b) examples involve locative inversion.

(474) a. Up he climbed.

b. Out stepped a beautiful woman. (Cappelle 2005:118)

(475) a. * Out he freaked.

b. * Up blew the car. (Cappelle 2005:118)

In both fronting and locative inversion, the construction seems to generally occur with directional particles, and usually when the verb is intransitive.[45] Some non-directional, transparent particles can also appear in inversion constructions, apparently restricted to occurring with the verbs *come* and *go*, as in (476).

[45] Cappelle (2002:49) offers a few cases where fronting of the particle in a transitive particle-verb construction occurs, but this seems possible only when the object is a pronoun.

(476) a. He tinkered with it a bit, and suddenly, on came the engine.

b. He was watching the storm when suddenly off went the lights.

c. He was watching the storm when suddenly out went the lights.

d. I was at a performance where his violin broke... A stage hand gave him another, and on went the show.[46]

Again, the distinctions above between transparent and nontransparent particles—and even between transparent particles—do not force us to conclude that there are distinct syntactic structures at play. As with nontransparent particles, there are non-particle-verb idioms which may not front or undergo inversion while retaining their idiomatic meaning, indicating that the availability of certain interpretations may be dependent on the syntactic configuration.

(477) Fronting (topicalization)

a. * To task, John took his students. (*take nP to task* 'scold nP')

cf. To France, John took his students.

b. * Up the wall, John drove his sister. (*drive nP up the wall* 'irritate nP')

cf. Up the mountain, John drove his car.

c. * On Jenna, he came to depend. (cf. *depend on*)

(478) Inversion

a. * We told John to get moving and into action swung John.

b. * We told John to try out the new car, so to the test he put it. (*put nP to the test* 'see what nP is capable of')

c. * To the showers was sent the pitcher.

d. * To the wolves was thrown every employee.

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[46] http://www.nytimes.com/2012/09/25/booming/25match-booming.html?_r=0, retrieved 19 July 2013

4.5.4 Right-Node Raising and Coordination

Last of all, Right-Node Raising and coordination constructions seem to point to a distinction between transparent and nontransparent particles. Right-Node Raising of the nP-prt string of a particle-verb construction is grammatical only when a particle is transparent. Attempts to perform Right-Node Raising on nontransparent particles is ungrammatical even when the semantic contribution of the particle is identical for both verbs.[47]

(479) a. John flicked ___ and Bill clapped ___ the lights on.[48]

b. John kicked ___ and Bill tossed ___ the ball up.

c. * John baked ___ and Bill cooked ___ their chickens up.

d. * John bought ___ and Bill ate ___ the sandwiches up.

With respect to coordination, it is possible to coordinate particles in both pre- (480) and post-nP (481) positions, and coordination of nP-prt strings (482) is also allowed. Unsurprisingly by now, these types of coordination are only possible when the particles in question are transparent.

(480) a. John turned on and off the TV.

b. John threw up and down the ball.

c. * John wiped off and up the dust.

(481) a. John turned the TV on and off.

b. John threw the ball up and down.

c. * John wiped the dust off and up.

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[47] (479c) is grammatical on the reading where John baked an unspecified item and Bill cooked up their chickens.

[48] There is a device known as the Clapper which turns lights on or off when a person claps. This sentence is felicitous provided we assume Bill is using such a device.

(482) a. She turned these lights on and those lights off.

b. She took the newspaper in and the cat out.

c. * She bought these companies up and that company out.

Once again, the difference in distribution can be tied to semantic restrictions on syntactic configurations. Just as nontransparent particles do not occur in the RNR or coordination constructions above, it seems to be generally infelicitous to Right-Node Raise an nP forming part of two different idiomatic phrases or to coordinate the non-identical portion of two idiomatic phrases. To be sure, native speakers who hear sentences like those below will likely figure out the two idiomatic meanings in each construction, but the constructions feel quite unnatural.

(483) Right-Node Raising

a. # John kicked and Mary broke their smoking habits.

b. # The enemy drew and the allies opened fire.

c. # John scared and Mary beat the shit out of Bill.

(484) Coordination

a. # John kicked the habit and the bucket on the same day.

b. # I threw him off track and to the wolves.

c. # He gave Mary the boot and John the creeps.

d. # He pushed and tried his luck one too many times.

4.5.5 Zeller's (2001) *Structural Adjacency*

In the previous subsections, we have seen that the specific meanings of particles and/or verbs in particle-verb constructions are unavailable when used outside of the particle-verb construction or when certain transformations have taken place. I have claimed throughout that a distinction between transparent and nontransparent particles comes down to a restriction on the permissible surface syntactic domain of certain interpretations of particles and verbs, noting that a similar restriction exists for a certain class of idioms. To account for

how the restriction on syntactic domain can be enforced by the grammar for nontransparent particle verbs, I adopt an account proposed in Zeller (2001) with minor revisions.

According to Zeller, nontransparent particles must be *Structurally Adjacent* to the verb, which he defines as follows.

(485) Structural Adjacency (Zeller 2001:36)

A head X and the head Y of its complement YP are *structurally adjacent*.

Because I argue particles do not always project phrasal structure, I adopt a revised version of Zeller's Structural Adjacency which allows Structural Adjacency to hold even when the particle does not project.

(486) Structural Adjacency (revised)

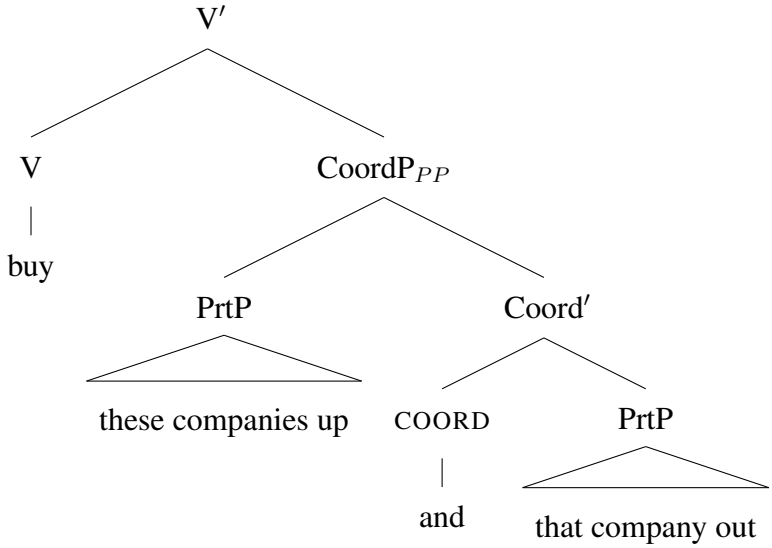
A head X and the head Y of its complement are *structurally adjacent*.

Crucially, it appears that Structural Adjacency must be maintained of the syntactic features at Spell-Out for nontransparent meanings to be licensed. For example, when a projecting particle undergoes syntactic phrasal movement (e.g. when PrtP fronts (§4.5.3) or Right-Node Raises (§4.5.4)), nontransparent meanings are unavailable. If we assume that syntactic features are carried along with phrases undergoing syntactic movement, Structural Adjacency is not maintained and the unavailability of nontransparent meanings is predicted. In the case of head movement of the verb from V to v^0 or higher (e.g. C^0 in V2 clauses) the availability of nontransparent interpretations of particles is not affected because this movement is not syntactic. In the Conflation account of head movement adopted here, only the phonological features (i.e. the 'p(honological)-signature') of V raise; Structural Adjacency, which holds of syntactic features, remains unaffected.

In addition to constructions involving phrasal movement of the particle (fronting and RNR, mentioned above), we saw that particles in coordinate structures do not allow nontransparent meanings. Consider the sentence #*She bought these companies up and that company out*. If we assume this sentence to have the coordinate structure below, neither particle is

Structurally Adjacent to the verb, thereby disallowing the nontransparent meanings of *up* and *out* in combination with *buy*.

(487)



Evidence that a structure like the one above—with CoordP$_{PP}$ behaving as the sister of V rather than the coordinated parts themselves—is correct comes from the appearance of Case on subjects in English. Whereas a pronominal subject in English necessarily appears in Nominative Case, if the subject consists of conjoined nPs including a pronoun, the pronoun may appear in Accusative Case (presumably its 'natural' Case in such conjunctions; cf. French, which only allows Accusative forms of pronouns in conjoined subjects). This is demonstrated in the examples below. If Nominative Case is assigned to/checked by the phrase occupying SpecIP (i.e. CoordP$_{nP}$) and not to its subparts, this is expected.

(488) a. I left.

b. *Me left.

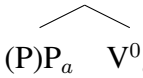
(489) a. John and I left. (prescriptive)

b. Me and John left. (natural)

The requirement that particles must be Structurally Adjacent to the verbs with license their special meanings is part of the lexical entry of the particle itself. For each nontransparent meaning of a particle, its lexical entry includes information about its syntactic structure.

For example, consider the nontransparent combinations *kick/knock/put/push/throw/tip/toss back (a beer)*, where *back* means 'to the back of the throat'. For this particular meaning of *back*, the lexical entry must indicate that it occurs in a position structurally adjacent to a verb. The structure I provide to indicate structural adjacency differs slightly from Zeller's due to different assumptions about the formation of particle verbs.[49]

(490) a. LPS: [bæk]$_a$

b. LSS:  (holds at Spell-Out)

c. LCS: [$_{Place}$ BACK([$_{Thing}$ THROAT])]$_a$ (based on Zeller 2001:Ch. 4)

The subscripts indicate the coindexation between the lexical phonological (LPS), syntactic (LSS) and conceptual (LCS) structures. Crucially, the lexical syntactic structure in the lexical entry for this use of *back* indicates that it must be structurally adjacent a verb V$^0{}_b$. While it is plausible that V$^0{}_b$ is a set of indices to specific verbs (here, indices to *kick*, *knock*, *put*, etc.), I think it is more likely that V$^0{}_b$ here (and in the case of other particles) indexes a set of features which must be present in the complement of the particle. Thus, only when verbs containing those features merge with the particle or its phrase and remain in this structural configuration is the special meaning of *back* available. Likewise, verbs may be associated with special meanings in the same manner.

Applied to the data in this section, the differences between transparent and nontransparent particles are reduced to the claim that licensing of special meanings of nontransparent particles requires Structural Adjacency. Transparent particles are able to appear in other structural configurations because Structural Adjacency is not required for their meanings to arise (i.e. it is not part of their lexical specification). By adopting a licensing rule like Structural Adjacency, which seems independently needed for certain idioms lacking particles, we

[49] Zeller's definition of Structure Adjacency is meant to hold only when a particle lacks functional structure, which he argues is one of the ways in which particles differ from their fully-projecting PP/AP/VP/DP counterparts (see §4.3.2.1 above). I will assume here that intermediate functional projections are ignored for the purposes of structural adjacency, since we saw that particles are not alone in needing to occur in a specific syntactic configuration to receive a nontransparent interpretation.

are able to avoid positing a third structural option for nontransparent particles.[50]

4.6 Remaining Issues

4.6.1 Why Must Non-nP Arguments Follow the Particle?

Although nP arguments are able to precede or follow particles in English, other apparent arguments of particle verbs are generally prevented from occurring in pre-particle position. In his discussion of the particle-verb construction, Kayne (1985) shows that PPs, CPs and adverbs are not able to intervene between a verb and particle in English. His examples are reproduced below. I have added *right* to all examples but (491d), where it is present in the original, to highlight that the same pattern holds even when the particle projects.

(491) a. John teamed (right) up with Bill.

b. * John teamed with Bill (right) up.

c. She pointed (right) out that he was wrong.

d. * She pointed that he was wrong (right) out (to him).

e. John gave (right) up immediately.

f. * John gave immediately (right) up. (Kayne 1985:104-106, modified)

In numerous accounts, a straightforward analysis of this pattern is possible by making reference to Case (e.g. Neeleman 2002). For example, if the particle always originates adjacent to the verb and the discontinuous order is derived by raising an nP argument left so it can receive Case, then the discontinuous order should not arise with other complements which do not need Case. In the present analysis, this line of argumentation could explain why the nonprojecting structure does not allow the non-nP phrases in (491) to precede the

[50] In the present explanation, nontransparent particles are defined as those particles with Structural Adjacency encoded in their lexical specification. There are some nonspatial uses (in the concrete sense) of particles like *on* (e.g. *turn the TV on*) which do not require Structural Adjacency, and for this reason they have been considered nontransparent in the present dissertation. Nonetheless, it seems that most particles lacking a concrete (as opposed to abstract/metaphorical) spatial denotation require Structural Adjacency. Why this should be, however, is not explained in the present account, as Structural Adjacency must be specified for each individual meaning. I believe that there is ultimately a principled reason for this (i.e. there is some mechanism enforcing Structural Adjacency in nonspatial meanings of particles by default), but this will need to be investigated in future work.

particle, but it does not explain why the projecting structure does not allow them to. Recall that in the discontinuous order, the external argument of the particle originates in the specifier position of PrtP to the left of the particle. Explaining this will be the primary goal of the following subsections. Adverbs will not be discussed, as it should be clear that they are not arguments of the verb or particle, and they should not be expected to occur in the particle's external argument position. I assume simply that VP-internal adverbs are always projected on the right of the verb phrase in English.[51]

After I account for the data in (491), I examine certain types of nP arguments which prefer appearing in the continuous order. These include gerunds and complex nPs and are exemplified below. I argue below that this preference is due to certain non-syntactic factors.

(493) a. ? She pointed something he didn't know (right) out (to him).

b. ? He says he's going to give playing chess up in favor of playing Scrabble.

(Kayne 1985:106f)

4.6.1.1 PP 'Arguments'

I begin by examining the general inability of PP arguments to precede a particle. Some representative examples are included below.

(494) a. John teamed {up} with Bill {*up}.

b. They've done {away} with free wine {*away}.

c. John stocked {up} on foodstuffs {*up}.

d. They're narrowing {in} on the problem {*in}.

e. He blasted {away} at them {*away}. (Kayne 1985:104, modified)

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[51] There is not, in fact, a blanket restriction against adverbs intervening between verbs and particles. In languages which allow the verb to raise higher than it does in English, certain adverbials that adjoin above the verb phrase can occur between the verb and particle, as shown in the following Swedish example, where *bil* 'car' is a particle. Presumably, adverbs in English would also be able to intervene between verbs and particles if the verb raised to a higher position.

(492) Mamma kör ofta bil
mom drives often car
'Mom often drives (cars).' (Toivonen 2003:94)

In each of these, the PP argument may follow but not precede the particle. As noted earlier, this pattern holds even when the particle is modified, producing an order which is the opposite of that found with nPs. Compare (495) with (496).

(495) a. John teamed {right up} with Bill {*right up}.

b. Betsy narrowed {right in} on the problem {*right in}.

(496) John tossed {*right up} the ball {right up}.

Like the nP object in (496), the PP arguments in (494) and (495) appear to fulfill some argument role of the particle verb, as each construction becomes ungrammatical if the PP is not present. While this might suggest that the PPs and nPs occupy the same syntactic position, I claim that this is not the case. In the subsections below, I demonstrate that PP arguments of particle-verb constructions do not occupy the same syntactic position as the FIGURE argument of a projecting particle as they generally cannot be construed as FIGURE arguments of the particle (*with*-PPs being somewhat exceptional in this regard). In most cases, the PPs can occasionally co-occur with an overt FIGURE nP argument, showing that the PP itself must be in a distinct position. Syntactically, I claim that the PPs in question are all right-adjuncts, and for this reason they can never precede the particle, which remains *in situ*.

Before individually examining prepositions which commonly occur with particle verbs, I wish to stress that, despite the examples above, PP arguments can occasionally precede particles. Such exceptions were noted in Kayne (1985:107) and are demonstrated in the examples below.

(497) a. Did you make under the bed up as your hiding place?

b. Under the bed ended up (being) our hiding place.

c. He ruled under the bed out as a hiding place.

The reason for the grammaticality of the pre-particle PP in (497) in contrast with the pre-particle PPs in (494)-(495) suggests that in the former case, the PPs have been nominalized.

Clearly, they fill the FIGURE role of the particle, and they appear to occur in Case-marked positions.

4.6.1.1.1 particle+*with*-PP

In this section, I examine what appear to be two slightly distinct uses of *with*-PPs when they occur in the particle-verb construction: comitative *with* and a second use which marks a FIGURE argument when the verb is unable to provide it with Case. I argue that comitative *with* right-adjoins to $\bar{v}$, $\bar{V}$ or $\bar{Prt}$ depending on its interpretation and whether the particle projects, while FIGURE-marking *with* right-adjoins to $\bar{V}$ or $\bar{Prt}$, depending on whether the particle projects.

Numerous particle verbs require plural subjects, and this requirement is often fulfilled through the use of a discontinuous plural with one portion marked by comitative *with*. Many other particle verbs which do not require a plural subject nonetheless allow a discontinuous plural. Based on the list of particle verbs provided in Fraser (1965:Appendix §5), it appears that most particle verbs occurring with *with* occur with the comitative variant of *with*.[52]

(498) a. John caught/joined/made/met/paired/partnered/teamed up with Mary.
(cf. John and Mary caught/joined/made/met/paired/partnered/teamed up.)

b. John made out with Mary. (cf. John and Mary made out.)

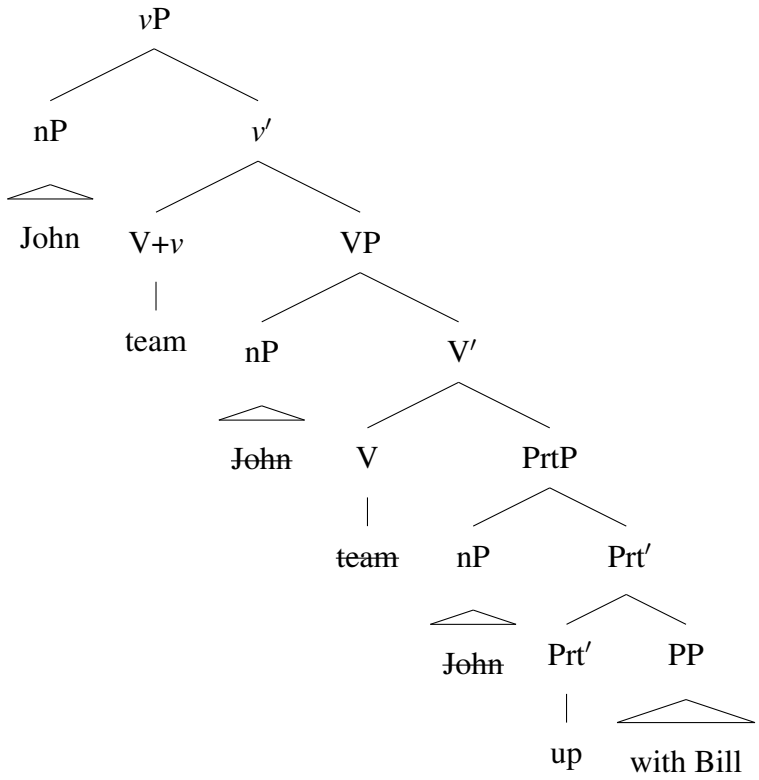
In one of the earliest Generative accounts of comitative-*with*, Lakoff & Peters (1966) propose a type of extraposition rule removing the (derived) *with*-PP from an NP which also contains the other portion of the discontinuous plural argument. Alternatively, one might generate the *with*-PP as a right-adjunct, allowing the semantics to build a plural argument, as Yamada (2010) does for what he calls the Type 2 comitative.[53] I will adopt this type of

[52] An interesting case of a particle verb with what appears to be comitative *with* is *John fell out with his wife*. Unlike other cases, the continuous plural variant is not possible in the intended reading: **John and his wife fell out*. Nonetheless, one can say *John and his wife fell out with each other* or *John and his wife had a falling-out*. I will not attempt to explain this here.

[53] Yamada (2010) distinguishes three types of comitatives. Given his tests for distinguishing the types, *with*-comitatives occurring in particle-verb constructions have properties of both Type 1 or 2 comitatives in his account.

right-adjunction structure for all instances of *with* discussed herein. The following structure demonstrates the derivation of a particle-verb construction with a *with*-comitative.

(499)



Because *with*-PPs are merged to the right in the structure above, they are unable to intervene syntactically between the particle and verb in English.

With-PPs right-adjoin at $\bar{v}$ when the nP denotes part of a plural CAUSER/INITIATOR argument introduced by *v*. In contrast, if it marks part of a plural FIGURE argument, it right-adjoins to $\bar{V}$ or $\bar{Prt}$. This is made clear with the following examples.

(500) a. John and Mary broke up.

b. John broke up with Mary.

c. Bill broke John and his girlfriend up.

d. Bill broke John up with his girlfriend.

e. Bill broke John and Mary up with Sue.

In (500a) and (500b), the breaking up event is construed as lacking an external causer. In (500c) and (500d), *Bill* instigates a breaking up event, though it is *John* and *his girlfriend*

who break up. In both (500b) and (500d), the *with*-PP adjoins at $\bar{V}$/$\bar{P}$rt. In contrast, in (500e) *Bill* and *Sue* together cause *John* and *Mary* to break up, at least in the salient reading. Thus, comitative-*with* adjoins above CAUSE at $\bar{v}$ in (500e) to mark *Sue* as a co-CAUSER argument.[54]

(501) [$_{vP}$ Bill break+CAUSE John ... [$_{PrtP}$ [$_{Prt'}$ [$_{Prt'}$ ... up] with his girlfriend]]]

(502) [$_{vP}$ Bill [$_{v'}$ [$_{v'}$ ... break+CAUSE John and his girlfriend up] with Sue]]

Regardless whether comitative *with* merges at $\bar{v}$, $\bar{V}$P or $\bar{P}$rt, it will always follow the particle.

Comitative *with* is not the only form of *with* found with particle verbs. Consider the following examples.

(503) a. John went through/on with the plan.

b. The plan went through/on (without a hitch).

(504) a. John went through with the transaction.

b. The transaction went through.

(505) The president did away with the tax breaks. (Thus, the tax breaks disappeared.)

In (503a) and (504a), *John* is the CAUSER, while the argument of *with* marks the FIGURE of *through*. This is confirmed in (503b) and (504b). Unlike the examples of comitative *with* above, the argument of *with* in these cases does not perform the same role as the sentential subject in the transitive examples (i.e. it is not part of a plural argument). Nonetheless, *with* is again used to mark a FIGURE argument, possibly needed here to provide the FIGURE argument with Accusative case, as it does in the well-known *spray/load* alternation (which I assume without argument involves a type of small clause).

(506) a. John sprayed paint on the wall.

b. John sprayed the wall with paint.

(507) a. John loaded hay on the wagon.

b. John loaded the wagon with hay.

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[54] Comitative *with* occurs with verbal objects as well, so it may presumably adjoin at $\bar{V}$ as well: *John mixed bleach and ammonia* = *John mixed bleach with ammonia*.

The difference between (503)-(505) and the traditional examples of the *spray/load* alternation in (506)-(507) is that while (506)-(507) have both a FIGURE and a GOAL argument, (503)-(505) contain a single FIGURE argument each. I suggest that the verbs in (503)-(505) are unable to assign Accusative case in these constructions, so the FIGURE arguments are saved by appearing in a *with*-PP right-adjoined to $\bar{V}$/$\bar{Prt}$.[55]

Further support that *with* is able to mark a FIGURE argument of a particle comes from the particle-*with*-nP construction, exemplified below. The nP following *with* is the FIGURE argument of the particle in each case.

(508) a. Down with John Doe!

b. Off with their heads!

c. On with the show!

(509) a. (Be) out with it!

b. (Be) off with you!

c. (Be) away with you!

d. (Be) gone with you!

e. (Be) on with it!

Each example above expresses a desire that the nP hold the state/be on the PATH denoted by the particle. Structurally, I assume that such sentences consist of a non-Case-assigning null verb or *be* which takes a PrtP complement. To receive Case, the FIGURE of the particle must occur in a *with*-PP as a right-adjunct to $\bar{Prt}$, as above.

In this subsection, I have argued that there are two common types of *with* that occur with arguments of particle verb. In both cases, I suggested that the *with*-PP occupies a right-adjoined position, where it cannot intervene between a verb and a particle.[56]

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[55] The verb *go* never assigns Accusative, though the same cannot be said for *do*. I must simply assume for the moment that *do* in (505) is used intransitively.

[56] There are a few additional particle verbs involving *with*-PPs which require additional examination, as it is not entirely clear how to describe them structurally, though I presume that they do not involve a third use of *with*. Consider the following.

4.6.1.1.2 particle+*on*-PP

Some particle verbs, like those in (510), frequently occur with *on*-PPs. In some instances, such as (494d) repeated below, the *on*-PP is required.

(510) a. Tom dropped/sat (right) in on the class.

b. * Tom dropped/sat on the class (right) in.

(494d) They're narrowing {in} on the problem {*in}.

Unlike *with*-PPs, *on*-PPs do not plausibly mark a FIGURE argument. In the construction above, *Tom* is the FIGURE of the particle *in*, while the complement of *on* appears to mark the locus of the event. Since *Tom* is the FIGURE, it (or a copy of it) must have merged with the particle verb prior to the merger of the PP.

In most particle+*on*-PP constructions listed in Fraser (1965), *on* has the same function as in (510). Consider the following constructions.

(511) a. John looked/thought back on the conversation.

b. John looked down on the protestors.

c. John cracked down on the protestors.

d. John broke/butt/chimed/dropped/listened/zeroed in on the conversation.

e. John zoomed in on the protestors.

f. John gazed/glanced/looked/sat in on the class.

g. John brushed/caught/read up on the topic.

(i) % John broke out with a rash.
(cf. A rash broke out on my arm.)

Here, it seems quite clear that *with* marks *a rash* as the FIGURE argument (it is the rash that *breaks out*), but *John* is not the CAUSER of the event (hence, *break* does not assign Accusative Case); rather, *John* seems to play a topic role in this sentence. It may be that there is a type of *v* which adds a topic argument to a structure. Below are a few additional examples which need further investigation.

(ii) a. The president got away with his illegal activities. (escaped prosecution)
b. The thief made away with the jewels. (escaped capture)
c. The thief made off with the jewels. (disappeared, became nonexistant in context X)

h. John choked/goofed/fouled/screwed/slipped/tripped up on the song.

i. John and Bill crept/doubled/ganged/snuck up on the man.

In each of the constructions above, the nP following *on* indicates the focal point of the activity. That is, the focal point of reflection in (511a) is *the conversation*, the focal point of *looking down* in (511b) is *the protestors*, and so on. In some instances, it appears to add the sense of an affected experiencer (e.g. *John walked in on his roommate while he was taking a shower*). It should be noted while some of the particle verbs require the presence of an *on*-PP argument, it is optional in other cases. In the optional cases, the locus must be contextually salient when the *on*-PP is absent.

Next, note that *on*-PPs occasionally occur with transitive particle verbs.[57]

(512) a. John caught his co-conspirators up on the plan.

b. John zoomed his camera in on the protestors.

In the constructions above, it is clear that *on*-PPs may not occupy the same position as the external argument of a particle, as this position is already filled. Since they do not occupy the particle-verb's object position, there is no expectation that *on*-PPs should alternate word order with particles. I assume that the position occupied by the *on*-PPs in the transitive constructions is the same as in the intransitive constructions, as they fulfill the same role in both cases. For the sake of concreteness, I will assume that *on*-PPs merge at $\bar{V}$ above the particle, below the Accusative Case position. It must be located at least below the Accusative Case position because an anaphor within the *on*-PP may be bound by the particle-verb's object; for example, if John's camera is facing a mirror, the sentence *John zoomed his camera in on itself* is possible.[58]

[57] Benjamin Bruening asks whether (512b) is a true particle, questioning the grammaticality of the alternative order, for which he provides the judgment ??*John zoomed in his camera on the protesters*. While I agree that the discontinuous order is preferable in (512b), I do not find the alternative order more than slightly degraded. Googling "zoomed in my camera" yields many results, and googling "zoomed in my/his/her camera on" also yields legitimate tokens. I assume, therefore, that (512b) contains a particle verb.

[58] The claim that the *on*-PP must be lower than the Accusative Case position due to the binding effects is not true if Bruening (to appearb) is correct in arguing that it is not c-command but rather precedence and (phase-)command that are the relevant relations for the binding conditions.

(513) [$_{IP}$ John [$_{vP}$ zoomed [$_{VP}$ his camera [$_{V'}$ [$_{V'}$ ~~zoomed his camera~~ in] on itself]]]]

4.6.1.1.3 particle+*away*+*at*-PP

Like *with*-PPs and *on*-PPs, *at*-PPs must follow a particle, as demonstrated in (514a) below. The examples below differ in that while the lower nP in (514b) is an argument of the verb, the *at*-PP in (514a) is not. Moreover, the sentence have distinct meanings. In (514a), the rock need not eventually disappear, nor is it even necessary that any pieces of the rock break off. In contrast, (514b) requires that the rock ceases to exist, or is at least greatly reduced in size.

(514) a. John chipped/chiseled/hammered {away} at the rock {*away}.

b. John chipped/chiseled/hammered {away} the rock {away}.

I argued earlier that the V-*away*$_{continue}$ construction has a null argument corresponding to an undefined time period. If this analysis is correct, it should be clear that the *at*-PP cannot be understood to be the FIGURE argument of *away*.

Other sentences with *away* clearly demonstrate that *at*-PPs simply mark, in a loose sense, an entity affected by the activity denoted by the verb. If we were to claim that *away* in (514a) takes *the rock* as a FIGURE argument, then *the guitar* should be the FIGURE of *away* below, but there is not even the slightest implication in this sentence that *the guitar* goes away, unlike the implication that *the rock* goes away in (514b). Thus, the complement of *at* cannot be considered the FIGURE argument of *away*.

(515) John played/jammed away at the guitar.

Alternatively, let us briefly consider the possibility that *away* in (514a) and (515) is a special VP modifier that, for some reason, prevents the verb from assigning Accusative Case. *At* might be used as a way to 'save' the THEME argument that could otherwise not receive Case, much like I claimed *with* could be used to provide a FIGURE argument with Case. But this is problematic because some *at*-marked nPs cannot possibly occur as the complement of the verb in a more basic construction. Compare (515) with (516).

(516) * John jammed the guitar.

At-PPs further differ from typical nP arguments of particle verbs in that *at*-PPs are optional. Even in Kayne's examples *He blasted away at them*, the *at*-PP can be deleted without leading to ungrammaticality. This suggests that *at*-PPs are not actually selected by the verb or particle verb.

Taken together, the data above shows that *at*-PPs cannot be considered objects of particle verbs, nor can they be viewed as FIGURE arguments of the particle. As a result, there is no expectation that they will behave like particle verb objects. I assume that they are right-adjoined to $\bar{V}$ like other adjunct PPs, and thus they are unable to precede a particle.

4.6.1.1.4 Conclusion

To conclude this section, I have shown that PPs which frequently co-occur with particle-verb constructions, and are sometimes required by them, do not generally function as the FIGURE argument of the particle and that they do not occupy the same position as the FIGURE. An exception to this claim was a subset of *with*-PPs which mark FIGURE arguments and are found in constructions where a verb is unable to assign Case to the particle verb's object. Still, I claimed that these are syntactically identical to other *with*-PPs in appearing as right-adjuncts in the particle phrase. Since all (apparent) PP arguments of particle verbs are right-adjoined within the verb phrase or the particle phrase, they are unable to precede the particle, which remains *in situ*.

4.6.1.2 CP Arguments

Contrasting with PP 'arguments' of a particle verb, CP arguments appear to function semantically as the external argument of the particle. Despite this, they obligatorily appear to the right of a particle, regardless whether it projects or not. I present some examples of particle verbs with CP complements in (517), while (518) demonstrates that nP arguments of the same particle verbs are not restricted to post-particle position. I suspect there to be

some speaker variation in the judgments for (517c)-(517d), but similar constructions are well-attested online.[59]

(517) a. John shouted {out} that he would never give up {*out}.

b. John brought {up} that he was lonely {*up}.

c. They set {up} that he had reason to commit the crime {*up}.

d. He made {up} that he had been beaten {*up}.

(518) a. John shouted {out} the answer {out}.

b. John brought {up} the topic {up}.

c. They set {up} a motive {up}.

d. He made {up} the story {up}.

Although the heaviness of CPs might seem like a possible reason for their need to follow particles, CPs must follow modified particles even when the CP is lighter than the PrtP, as the following demonstrates. Clearly, we cannot rely on prosodic heaviness to explain the positioning of CP arguments.

(519) a. So then John just shouts right the fuck on out that he loves Mary.

b. * So then John just shouts that he loves Mary right the fuck on out.

I argue instead that the inability of CPs to precede particles follows, in part, from their inability to appear in Case positions. For argumentation showing that CPs cannot occur in the Nominative Case position in SpecIP, I refer the interested reader to Koster (1978) and Alrenga (2005). For the present purposes, it suffices to show that (i) CPs cannot surface in the 'subject' position of small clauses, and (ii) CPs cannot surface in the Accusative Case position.

Concerning (i), the following sentences demonstrate that CP subjects of small clauses must extrapose to the right, while the expletive *it* surfaces in small-clause 'subject' position.

[59] For the record, provided the particle precedes the CP, I find (517a-517b) to be perfect and (517c-517d) marginal.

For present purposes, it is not necessary to understand why the CP surfaces on the right; it suffices to know that it does surface to the right in non-particle-verb constructions. In the current analysis, the sentences below are comparable to a construction with a projecting particle, and thus by analogy, we predict that CP arguments should likewise appear on the right in those constructions. This was shown to be the case in (519).

(520) a. * We find that John is guilty unlikely.

b. We find it unlikely that John is guilty.

c. * John considers that he failed the test strange.

d. John considers it strange that he failed the test.

Consider now when the particle does not project. The argument of a non-projecting particle (in a transitive construction) should be able to surface to either side of the particle, depending on whether it raises overtly or covertly to check Case. That the CP subject cannot precede even a non-projecting particle, as demonstrated in (517), would appear to indicate that it cannot raise to a Case position. This is unsurprising, given that CPs are not assumed to require Case and would thus lack motivation to raise.

Further evidence that CPs cannot occupy the Accusative Case position is found in verbs which take a CP argument yet require the presence of *it*. It appears that *take* and *give*, in their uses below, obligatorily assign Accusative Case. Because the CP cannot move to Case positions, the expletive *it* is inserted to fulfill the Case requirement. Presumably, the CP extraposes to the same position it did in (520).

(521) a. I take *(it) that you will pay.

b. He never gave *(it) a thought that Bolshies are human beings.

(Postal & Pullum 1988:642, modified)

Kim & Sag (2005) point out a correlation between the appearance of *it* and whether a verb subcategorizes for an nP. Verbs which subcategorize for an nP require *it* when a CP argument is used in its place; verbs which subcategorize for an nP or a CP optionally allow the presence of *it*; and verbs which subcategorize only for CP disallow the presence

of *it*.[60] This is exemplified in the sentences below. The presence of *it* is tied to possibility or requirement that an nP be present; in other words, when the verb has Case to assign, the expletive must occur in the Accusative Case position, because a CP argument cannot.

(522) a. I blame the dog.

b. * I blame that we can't go.

c. I blame *(it) on you that we can't go.

((b-c) from Kim & Sag 2005:258, modified)

(523) a. Nobody expected his success.

b. Nobody expected that you could be so cruel.

c. Nobody expected (it) of you that you could be so cruel.

(Kim & Sag 2005:260, modified)

(524) a. * John thought the problem.

b. John thought that Mary was coming.

c. John thought (*it) to himself that Mary was coming. (judgment mine)[61]

((a, c) from Kim & Sag 2005:263f, modified)

Returning to the initial examples of this section, recall that each sentence in (517) could take an nP argument rather than a CP argument, as was shown in (518). It is thus predicted that these should optionally allow *it* when they take a CP complement. While I prefer *it*-less variants, Google searches reveal that these constructions indeed appear with the expletive *it* with considerable frequency when taking a CP argument. The following

[60] Alrenga (2005) points out this same pattern when talking about when an underlying CP 'object' can surface in 'subject' position of a passive rather than the expletive *it*.

[61] Kim & Sag (2005) speculate that "all verbs...that allow CP (or sentential) objects also allow object *it*-extraposition" (p. 253). They provide examples with *think* and *hint* which I find ungrammatical, but Google searches support their claim, revealing that there are many attested examples of sequences like *think/hint it that*. They also provide a judgment of ? for (524c) rather than my *.

examples were found during a search for patterns fitting the template [V *it* particle *that* pronoun].[62]

(526) a. Reece Mastin should Shout it out that he is gunna Shut up and kiss me and it's going to be a good night[63]

b. If the cabinets are in such good shape, why do you think the tenants brought it up that they need painting.[64]

c. We set it up that we were going to tape me telling Cowboy Dan over breakfast to get his true reaction...[65]

d. ...my first assumption is that Angel and Lindsey took advantage of her amnesia and made it up that she'd been dating him.[66]

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[62] As evidence for his claim that particles are ergative, den Dikken (1995:54) states that particle verbs disallow the expletive *it* and provides the following data. The judgments are his (informants').

(525) a. They made (*it) out that John is a liar.
b. They find *(it) painful that John is a liar. (den Dikken 1995:54)

Den Dikken claims that *it* is inserted after extraposition of the CP from the external argument position of *painful* in (525b), and argues that the absence of the expletive in (525a) indicates that extraposition has not occurred. This, he says, indicates that the argument of a particle occupies a distinct position from the subject of a(n adjectival) small clause. While the present explanation cannot account for why *it* is required in (525b) (it should be optional: *I find that he is a nice man* / *I found the answer*), it can explain (525a). But first, we must correct the judgment. Google again shows many legitimate examples involving *made it out*, including *He made it out that the colonists were just minding their own businesses and were completely unarmed, and the British soldiers fired upon them with no due cause.* (http://newscornerusa.com/articles/sdy-2013-0901.html, retrieved 6 June 2013). As predicted by the apparent optionality of *it*, the particle verb *make out* can appear in a construction where it does not assign Accusative Case (as in (525a)) or where it does, as in *John made Bill out (to be) a liar*. Thus, the sentence in (525a) should not be taken to indicate particles are ergative.

[63] http://www.tumblr.com/tagged/reece-mastin?before=1341319455, retrieved 1 October 2012

[64] http://www.thelpa.com/lpa/forum-thread/263185/Should-I-paint-the-cabinets-for-them%3F.html, retrieved 1 October 2012

[65] http://www.bigwaynerbbq.com/2012/08/22/the-adventures-of-a-worthless-nut-on-bbq-pitmasters/, retrieved 1 October 2012

[66] http://spikeluver.com/SpuffyRealm/reviews.php?sid=11023&chapid=&offset=25, retrieved 1 October 2012

Finally, note that CPs arguments of unaccusative particle verbs cannot occur in subject position.

(527) a. It ended up that the cheaters won.

b. It turned out that John died.

Alrenga (2005) observes that underlying CP 'objects' can appear in 'subject' position only if the verb normally subcategorizes (obligatorily or optionally) for an nP. (Alrenga defends the existence of a null expletive DP in SpecIP, coindexed with the CP 'subject', when the CP raises to 'subject' position, which he argues is actually a topic position.) If we extend this to unaccusatives (as we probably should), then the constructions in (527) are predicted to not allow nP arguments. This appears to be the case.

(528) a. * The surprising result ended up.

b. * John's death ended up.

Now that we have seen that CPs do not occur in Case positions—the expletive *it* occurring in the Case position in its stead when needed—we see that even if a CP is merged as the complement of a non-projecting particle verb, it is unable to raise to the left of the particle.

In this section, I argued that CP arguments cannot occur in Case positions. I showed that whenever a verb assigns Accusative Case, the expletive *it* must appear. In such instances, the CP extraposes to the right of a clause. We have also seen that CPs are not allowed in subject positions of SCs or projecting particles at Spell-Out. I have not attempted to explain why the CP is extraposed, but because this movement is not limited to particle-verb constructions, I do not consider providing an explanation to be necessary for present purposes.[67]

[67] I suspect that there is a constraint at play at the syntax-phonology interface which requires CP arguments to be located at the edge of some type of prosodic phrase. Unfortunately, pursuing this possibility here would take us too far astray from the central thesis.

4.6.1.3 Gerunds

Consider next the occurrence of a gerundival phrase as the external argument of a particle. In such instances, gerundival phrases prefer to appear in post-particle position. This is true even with short gerundival phrases.

(529) ? He says he's going to give playing chess up in favor of playing Scrabble.

(Kayne 1985:107)

(530) a. Did you make up having two kids? (i.e. lie about having two kids)

b. ? Did you make having two kids up?

c. Did you make up Mary having two kids?

d. ? Did you make Mary having two kids up?

e. Did you try out bowling?

f. ? Did you try bowling out? (cf. Did you try bowling?)

I assume that the degraded nature of such examples results from what is called 'Late Closure' (e.g. Frazier 1987:562). In the discontinuous structures above, the processor attempts to parse the particle as associating with the gerund rather than the matrix verb. Note that unlike the pre-particle placement of a CP, the sentences above are only slightly degraded. Moreover, gerunds are not generally degraded in subject position, whether embedded or not, nor are they disallowed in inversion constructions.

(531) a. John claims that once having given a child a gift makes him a saint. I disagree.

b. Does occasionally giving children gifts make one a saint?

c. The rich consider paying taxes a sin.

In other words, the degraded nature of pre-particle gerunds is not comparable to the ungrammaticality of non-peripheral CPs, and it can be accounted for by non-syntactic factors.

4.6.1.4 Complex nPs

Certain types of complex nPs also do not easily occur in the discontinuous order. Consider the following examples, keeping in mind that the judgments are provided by different authors (those in (534) being mine). All sentences below are acceptable if the nP in question follows the particle.

(532) ? She pointed something he didn't know (right) out (to him). (Kayne 1985:106)

(533) a. * I ran a man who was old down.

b. * I'm going to call somebody who is strong up.

c. ? I'm going to call somebody strong up.

d. * I polished the vase which was from India up.

e. ? I polished the vase from India up. (Ross 1986:33)

(534) a. *? I ran a man eating lunch / singing to himself down.

b. ? I shouted the fact that he lied out.

c. ?? I beat the man that lives here up.

There are two issues to address here: first, why are complex nPs like those above less preferred in pre-particle position, and second, why do embedded CPs not lead to the same degree of ungrammaticality as regular CP arguments (cf. §4.6.1.2)? The answers to these questions lie outside the purview of syntax proper, as was noted in Chomsky (1965:10f), which made use of precisely the type of examples above to demonstrate the difference between the syntactic 'grammaticality' and the more general 'acceptability' of sentences.

With regard to the first question, I assume that the reason given in the discussion of gerundive arguments holds here as well: the particle is interpreted with the embedded verbs due to Late Closure. This would also explain why nP modifiers containing a verb in the examples above seem to be more degraded than the other examples. I find that this holds in non-particle-verb constructions as well when a secondary predicate could be interpreted with the embedded verb, as in the following examples.

(535) a. ? I consider the people who made these laws complete idiots.

b. I consider the people who passed these laws complete idiots.

(535a) seems slightly worse than (535b), which I assume is because *made* remains ambiguous until the sentence finishes (it could take an nP complement or SC complement containing two nPs), while *pass* is disambiguated as soon as the object is reached (because we prefer to interpret inanimate objects as THEME arguments rather than RECIPIENT argument, thereby rejecting the double-object construction interpretation).

A second reason the discontinuous order is dispreferred for complex nPs is tied to Information Structure. Several authors have noted that when an object nP of a particle verb presents new information, it is more felicitously placed after the (unmodified, unfocused) particle (see Dehé 2002:122ff for discussion and references). Because relative clauses and other nP modifiers typically provide new information, they are dispreferred in pre-particle position.

Finally, there are likely prosodic factors at play for some of the constructions as well. Non-embedded CPs typically mark the beginning of a new intonational phrase (e.g. *this is the cat / that chase the rat / that ...*). By placing a CP anywhere other than at the edge of a clause, the prosodic phrasing of the clause is broken by the intervening intonational phrase. This may be part of the reason (non-embedded) CPs typically occur only at the left or right edge of a clause. This is not the case when they are embedded in nPs, however, as they are at least sometimes marginally acceptable in these cases. If we look at examples not involving particles and lacking possible ambiguity, they appear to be fully acceptable (at least sometimes).

(536) I gave the man who was begging for money two dollars.

When speakers do place nPs with embedded CP modifiers in non-clause-final position, it appears to me that the CP's usual prosodic phrasing is 'suppressed' in a sense. This is suggested by the prosody of constructions like *I brought the fact that he cheated on his wife up*, where *the fact that he cheated on his wife* is said quickly and with a different contour than it would have as a main clause such as *He cheated on his wife*.

Also suggesting that prosodic factors play a role in the word order of complex nPs is that CP modifiers may extrapose around the particle, leading to increased acceptability. For example, if we extrapose the CP in (534c) to produce (?)*I beat the man up that lives here*, the result is greatly improved. I cannot think of a syntactic reason to prefer the extraposition of an embedded CP modifier, whereas the preference could be captured by the suggestion above based on prosodic phrasing.

The second question—why do embedded CPs not lead to the same degree of ungrammaticality as regular CP arguments?—has already been answered partially above, but I will add one additional reason. Recall from §4.6.1.2 that I concluded CPs were not allowed in Case positions, and that CPs extrapose for reasons independent of the particle-verb construction. In contrast, when a CP is embedded in an nP, they can occur (embedded) in Case-marked positions because the nP they are part of needs Case.

4.6.1.5 Section Summary

In this section, I examined the inability of apparent non-nP arguments of particle verbs to precede a particle, as well as the preference for gerunds and complex nPs to follow the particle. In the case of apparent PP arguments, most instances cannot be considered FIGURE arguments of the particle and thus should not be expected to occur in the same positions as the FIGURE. One variant of the *with*-PP was seen to be exceptional, though, as it marked the FIGURE argument when the verb did not assign Accusative Case. I claimed that all PP 'arguments' were right-adjoined to a projection of the verb phrase or the particle phrase.

That CP arguments of particle verbs do not precede particles even though they are arguably FIGURE arguments of particles was shown to follow from (a) their inability to appear in Case-marked positions, and (b) the fact that CP arguments are extraposed out of any small clause, and out of other non-clause-final positions as well.

Gerundive FIGURE arguments of particle verbs were claimed to be marginal in the discontinuous order because they lead to ambiguity, with the particle being able to be parsed with the verbal head of the gerundival phrase or with the matrix verb. Because the verbal

head of the gerundival phrase is closer to the particle, there is a preference to parse the particle together with this head, yielding unintended or ungrammatical readings. Also, the discontinuous order is likely viewed as degraded because there exists a perfectly acceptable, unambiguous alternative: the continuous order.

Finally, I claimed that complex nPs are marginal (to varying degrees) in the continuous order for several reasons. First, certain types of complex nPs with embedded verbs allow for an incorrect parsing of the particle with the embedded verbs, as with gerund arguments. Second, complex nPs typically contain 'new' information, which is preferably placed at the right edge of the verb phrase, after the particle. Finally, I suggested that complex nPs containing CP modifiers are highly dispreferred in the discontinuous order because in this position, the CP—typically its own intonational phrase—breaks up the matrix clause's prosodic structure.

4.6.2 Modifiers

In this section, I examine three classes of modifiers: *right*-modifiers, *completely*-modifiers, and the particle modifiers *on* and *back*. The modifier *right* was already mentioned above, where I claimed it adjoins to the left of $\bar{\text{Prt}}$, but I add some additional details regarding this class below. With respect to *completely*-type modifiers, I conclude that they are ambiguous between *right*-type particle-modifiers and VP-modifiers. I then argue that the modifiers derived from particles are nonprojecting particles which merge with another particle head, the result of which remains a (now complex) particle head. Finally, I examine the meaning of the modifier *on*, relating it to the continuative use of the particle *on*, and I propose that it adds a softening effect for pragmatic reasons.

4.6.2.1 *Right*-type Modifiers

What I refer to as *right*-modifiers are those particle-modifiers which may precede particles in transitive particle-verb constructions only in the discontinuous order. *Right* appears to be the most prominent such modifier, compatible with a wide range of particle verbs containing both transparent and nontransparent particles. Nonetheless, it is not the only member

of its class.[68] Cappelle (2005) provides the following list of *right*-type modifiers ('emphasizing prespecifiers' in his terminology), a number of which function as particle-modifiers only in certain dialects.

(537) *bam*, *bang*, *clean*, *clear*, *dab*, *dead*, *flat*, *plum(b)*, *plunk*, *right*, *slam*, *slap*, *smack*, *smash*, *straight*. (Cappelle 2005:159)

The set of sentences below demonstrates the distribution of *right*. As noted above, *right* may appear in the discontinuous order, as shown in (538a). When the particle precedes the particle-verb's object (i.e. occurs in the continuous order), these modifiers may neither precede the particle nor follow the nP, as (538c)-(538e) demonstrate. Furthermore, *right*-modifiers (and all other particle-modifiers) must always precede a particle, as shown in (538b) and (538d), and *right* cannot be split from the particle by the FIGURE argument, as (538f) shows.[69]

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[68] Los et al. (2012:29) claim that "For English, it is generally accepted that particles can only be modified if their meanings are literal/spatial...". Whether or not this is generally accepted, it certainly is not true. Many 'nonspatial' (in their sense) and nonliteral particles take *right* modifiers without much difficulty. The following are just a few examples.

(i) John looked the word right up.

(ii) John entered the classroom and proceeded to doze right off.

(iii) John said he didn't want to discuss the issue with me, but he brought it right up as soon as the supervisor came by.

(iv) John freaked right out upon seeing the spider in the toilet.

(v) You need to pipe right down, John!

This is not to say that *right*, or other *right*-type modifiers, can occur with every particle; however, its compatibility with particles is not limited to those used in their spatial/literal senses.

[69] *Right*-modifiers are also found in Scandinavian, exhibiting the same word order restriction as in English.

(i) a. Hun sendte katten **rett ut**.
she sent cat.the right out
b. * Hun sendte **rett ut** katten. (Norwegian) (Taraldsen 2000:108, modified)

(ii) a. Dom släppte hunden **rätt in**.
they let dog.the right in
b. * Dom släppte **rätt in** hunden. (Swedish) (Taraldsen 2000:108, modified)

(538) a. The cook heated the stove right up.

b. * The cook heated the stove up right.

c. * The cook heated up the stove right.

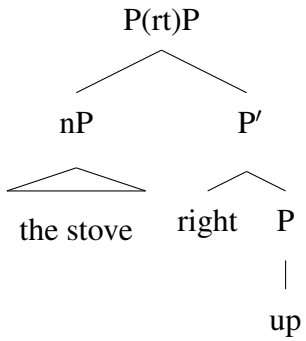
d. * The cook heated up right the stove.

e. * The cook heated right up the stove.

f. * The cook heated right the stove up.

The pattern above follows if *right* left-adjoins to and remains at $\bar{\text{P}}$, between the particle and its FIGURE argument.

(539)



From this structure, *the stove* raises out of P(rt)P to receive Case, yielding the grammatical order in (538a). The orders in (538b), (538c) and (538d) are not possible on the assumption

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(iii) a. Í gær hafa þeir sent peningana **beint upp**
yesterday have they sent money.the straight up

b. * Í gær hafa þeir sent **beint upp** peningana

(Icelandic) (Collins & Thráinsson 1993:164, modified)

OV Germanic languages also have *right*-modifiers, but they do not exhibit the word order variation seen in Scandinavian due to the difference in headedness. The effects of *right*-modification can, however, be seen in Verb Raising constructions, where the presence of a *right*-modifier prevents a particle from undergoing Verb Raising with a verb. This is demonstrated in the example from den Dikken (2003) below for Dutch (see also Los et al. 2012:62, who claim that *right*-type modification in Dutch is only possible in front of transparent (their 'literal') uses of particles).

(iv) a. dat Jan de bal (vlak, pal) over heeft geschoten
that Jan the ball right over has shot
'that Jan shot the ball (right) over the goal'

b. dat Jan de bal (*vlak, *pal) heeft (*vlak, *pal) over-geschoten
that Jan the ball right has right over-shot
'that Jan shot the ball (*right) over the goal' (den Dikken 2003:2, adapted)

For discussion of this issue, see §4.4.2 on the Verb Raising construction.

that *right* is exclusively a left-branch modifier. The order in (538e) is only possible if the FIGURE argument is able to undergo HNPS, but *the stove* is not heavy enough in this case. Finally, (538f) is bad on the assumption that left-branch modifiers cannot raise leftward.

4.6.2.2 *Completely*-type Modifiers

Appearing to behave differently from *right*-type modifiers are what I refer to as *completely*-type modifiers. These include degree modifiers such as *completely*, *halfway* and *partway*, and as the following examples show, these modifiers may not only precede a particle in the discontinuous order, but they may also occur clause-finally in both the continuous and discontinuous orders, and they may precede the verb.

(540) a. John cleaned the table completely off.

b. John cleaned the table off completely.

c. John cleaned off the table completely.

d. * John cleaned completely off the table.

e. * John cleaned off completely the table.

f. John completely cleaned off the table.

I argue that the *completely*-modifiers in the grammatical examples above occupy at least two distinct positions. In (540a), *completely* modifies the particle and is in complementary distribution with *right*; thus, I take it to be a *right*-modifier in this instance. In contrast, in (540b)-(540c) and (540f) *completely* modifies the entire verb phrase. This distinction is supported by the following data, which shows that it is only when *completely* precedes the particle that it cannot occur together with a *right*-modifier.

(541) a. * John cleaned the table completely right off / right competely off.

b. John cleaned the table right off completely.

c. John completely cleaned the table right off.

Further, modifiers which are clearly verb-phrase modifiers do not immediately precede particles.

(542) a. John gave up immediately

b. He made out poorly (Kayne 1985:105)

(543) a. * John gave immediately up

b. * He made poorly out (Kayne 1985:105)

As for (540d)-(540e), the ungrammaticality is expected, as neither *right*-modifiers nor VP-modifiers may intervene between a verb and object nP.

4.6.2.3 Particles as Modifiers

The final type of particle-modifier we see is only rarely mentioned in the literature on particle-verb constructions. The particles *on* and *back*—in their continuative and restitutive senses, respectively (see §4.6.2.3.1)—double as modifiers of particles and are unique in that they may occur with a particle in the continuous order, in addition to the discontinuous order like other particles.[70]

(544) a. Send {on in} the next applicant {on in}.

b. Waking up after a hard night of drinking, I put {back on} my pants {back on} and shamefully got up off the sidewalk.

Like other modifiers, *on* and *back* may not be separated from the particle they modify by the particle verb's object.

(545) a. Honey, can you heat the stove on/back up for me?

b. Honey, can you heat on/back up the stove for me?

c. * Honey, can you heat on/back the stove up for me?

One might suspect that *on* or *back* modifies the verb phrase rather than the particle, but this is shown to be incorrect by the fact that the sequence [*on/back* + particle] can itself

[70] Literature which mentions these modifiers includes den Dikken (1995:80), who briefly mentions the existence of 'particle recursion'; Cappelle (2005:§4.5), who discusses *on* and *back* together with other particle-particle structures but does not focus on the peculiar syntactic ability of *on* and *back* to precede objects; and Idsardi (1989:15ff), who accounts for the peculiar behavior of *back* by suggesting that it may be adjoined to the particle head, which is the analysis defended here.

be modified by *right*, a PP modifier, in the discontinuous order. In this case, *on/back* must follow *right*.

(546) a. Sure, I'll heat the stove right on/back up.

b. * Sure, I'll heat right on/back up the stove.

c. * Sure, I'll heat on/back right up the stove.

Back and *on* are able to occur together to modify a particle. When they do, both orders of *back* and *on* are allowed and attested, albeit slightly difficult to find. It is unclear to me whether there is a slight semantic distinction between the orders.[71]

(547) a. Dr Anspaugh? Dr Romano? Would you come *back on up* please? (Anspaugh and Romano come back onstage).

b. Our heroine! Dr Corday, come *on back up*. Many congratulations on your heroism. You were a clear winner in both rounds. Bravo!

(Cappelle 2005:149)

(548) a. There she is, her brow knit together, thinking about whether or not to toss me right back on out for being a brazen hussy.[72]

b. ...the machine labeled generator is used to destroy one of the dipoles and 'make' another one and send the 'charge' back on out.[73]

In the examples above, the modified particle does not precede an object nP. I have not encountered sentences where *on back* + *particle* or *back on* + *particle* precede an argument of a particle verb, and the order feels much less acceptable than when only one of *on* or *back* is present.

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[71] The examples in (547) are/were attested online, but the URLs provided in Cappelle (2005) are no longer active.

[72] Meyer, Louis A. 2005. *Under the Jolly Roger: Being an Account of the Further Nautical Adventures of Jacky Faber*, p. 340. Harcourt.

[73] http://archive.mises.org/15030/this-could-be-here-but-nope-unions-oppose-it/, retrieved 8/14/2013.

Expletives which occur with a definite article (e.g. *the heck/hell/fuck*) can further be thrown into the string of modifiers in the discontinuous order, either preceding or following a *right*-modifier if present, but preceding *on* and the particle.[74] Expletives do not modify the particle in any way, but rather express the speaker's attitude. *Back* may also intervene between *right* and *on*. Examples are provided below.

(549) a. I'll heat the stove right the fuck on up once you clean the damn kitchen.

b. I just turned off the stove, but I'll heat it right back on up as soon as you come home.

c. Get right the fuck back on up here.[75]

With respect to the syntactic status of the modifiers *on* and *back*, I suggest that they are simply instances of non-projecting particles which merge with other particles rather than verbs. Since the modifiers *on* and *back* do not project when merging with particles, the resulting complex remains a minimal projection and may merge with verbal heads to form the continuous structure. Alternatively, the particle head may project.[76]

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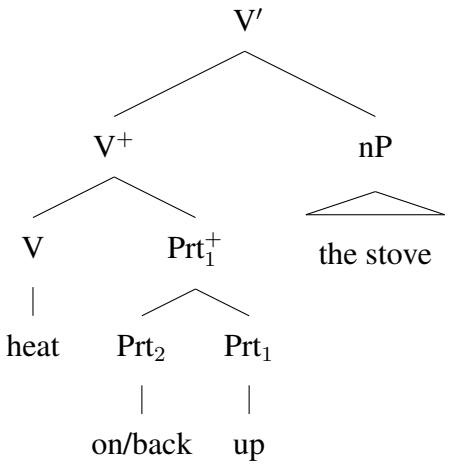
[74] See http://lingcomm.blogspot.com/2011/11/non-question-uses-of-hell.html for some observations of *the heck/hell/fuck*.

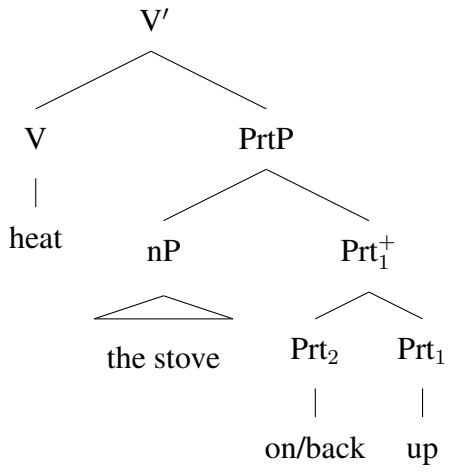
[75] Attested, without *right*, in Delany, Samuel R. (1995) *Atlantis: Three Tales*, Wesleyan University Press, p. 161.

[76] I noted that it did not seem possible for a particle modified by both *on* and *back* to occur in the continuous order. Syntactically, it should be possible for another modifying head to merge with a Prt^{+} unless we adopt a constraint along the lines of Neeleman & Weerman's (1993a) Complexity Constraint, which would effectively prevent an unprojected head from merging with more than one nonprojecting modifier. If we adopt such a constraint, we must then provide a different treatment of *on* and *back* in sentences like (547)-(548), where they do occur together in the discontinuous order. Alternatively, it may be that a nonprojecting particle can be modified by two nonprojecting modifiers, but the result is too phonologically heavy to be allowed in pre-object position.

(550) a.



b.



4.6.2.3.1 The Meaning of the Modifier *on*

Let us turn now to the meaning of the modifier *on*. Unlike the modifier *back*, whose restitutive meaning is clear, the meaning of the modifier *on* is less obvious. On initial reflection, it appears that *on* is frequently used to indicate permission and/or voluntariness (e.g. *I'll send it right on up, Sir!*), and it often serves to soften requests or statements (e.g. *Come on down!*, said on a game show). I suggest below that the nuances felt with the modifier *on* are the result of pragmatics, maintaining that *on* is an instance of the continuative use of the particle *on*. *On* is readily compatible with other particles as a modifier because it simply denotes an 'extended' PATH, with no implied endpoint. The particles it combines with are free to add more information about the nature of the PATH, including providing it with an endpoint.

Consider first the particle use of *on*. Although *on* is argued to add a sense of continuation, it is not always necessary that the event be in progress. For example, when one person interrupts another, the interrupted person may stop the activity they were previously engaged in. In such circumstances, the interrupter may tell the interruptee to *keep on* doing the activity which they interrupted—even if an hour or more has passed—which is to suggest they had not stopped. It appears that we treat the event as continuing even when there are brief temporal lapses.

(551) You didn't need to stop because of me! Play on!

Extending this to the modifier *on*, in an expression like *Come on down!*—which is softer than *Come down!*—the use of *on* would add a sense in which the FIGURE argument is already moving *down*. By framing the command this way, the effect is that the speaker is not telling the interlocutor to do something new, but rather to continue doing what they were supposedly doing, giving rise to its softening effect.

We occasionally see a similar pragmatic softening effect with the particle *along* as well. The use of *along* implies the existence of a PATH along which the FIGURE argument was already progressing or will be progressing. But imagine a group of people crowding around a crime scene in their neighborhood. The police are likely to give the command in (552a) even though the onlookers may not have planned on doing anything or going anywhere in particular; that is, there is no PATH along which they were traveling. Likewise, the command in (552b) might be said to children in place of *Leave!*, even if the children have no particular place to go. It seems, then, that the command involving *along* is framed *as if* the interlocutor were already traveling along some PATH, this serving as a way of softening the command because the speaker is not telling the interlocutor to do something new, but rather to continue doing what they were supposedly doing.

(552) a. Move along, everyone!

b. Run along, now!

This line of reasoning is certainly abstract, but it is not very different from the reasoning we would use to explain the softening effect of many uses of modals. For example, in an expression like *Can you pass the salt?*, we frame the question as one of ability in order to avoid the use of an imperative. Likewise, adding temporal distance through the use of the past tense form—*Could you pass the salt?*—makes the question even more indirect and more polite. In the case of the modifier *on*, I am simply proposing that the command becomes less direct, and thus softened, when framed as if the target of the command were already engaged

in the activity.[77]

4.6.2.4 Section Summary

In this section, I review three types of modifiers. *Right*-modifiers may only occur with particles in the discontinuous orders, and I claimed that they left-adjoin to $\bar{\text{Prt}}$. *Completely*-modifiers may also precede particles in the discontinuous order, but unlike *right*-modifiers they may also occur clause-finally. I argued that *completely* modifiers are actually ambiguous between *right*-modifiers and VP modifiers. Finally, I examined the particle modifiers *on* and *back*, which are able to precede a particle in the continuous order. I claimed that they are instances of non-projecting particles which merge directly with a particle head. This complex Prt^{+} head is then able to merge directly with a verbal head to form the underlying continuous order. Finally, I examined the semantics of the modifier *on* and suggested that it was an instance of the continuative use of *on*. I further argued that it often has a pragmatic softening effect by portraying an activity as the continuation of a larger activity.

4.6.3 Pronouns

Probably every analysis of the particle-verb construction in English discusses the behavior of object pronouns in particle-verb constructions, so I would be remiss to ignore it here. Object pronouns are important to examine because, unlike other nPs, they must precede the particle in normal circumstances. This is demonstrated below.

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[77] Although *on* appears to soften commands, it is not the case that use of the modifier *on* is limited to commands. This is demonstrated in the following example.

(i) Mom was standing there with her hatpin drawn back until the cow mooed and **walked on off**.

Allen, Carl (1988, May 26). "Hats used to be part of a woman's wardrobe." *The Ledger* (Lakeland, FL), 7D. Retrieved from http://news.google.com/newspapers?nid=1346&dat=19880526&id=W3VSAAAAIBAJ&sjid=-vsDAAAAIBAJ&pg=1280,5615702

(ii) He came on over.

(iii) She heated the stove right on up.

The pragmatic function of *on* outside of imperatives is less clear, and I am unable to provide much analysis of it. I can only say that there seems to be a connotation that the action denoted by the phrase containing the *on* modifier benefited, in some small way, some other contextually-salient party.

(553) a. John eats it up.

b. * John eats up it.

One frequent claim about weak object pronouns is that they cliticize onto verbs. If we assume this to be true, we should ask why object pronouns do not cliticize onto particles when the verb and particle together make up a V^+. One simple solution is to claim that English pronouns must check Case overtly, unlike other nPs which I have claimed may raise across a particle to a Case position covertly. If this is the case, object pronouns must raise to a Case position, which is located in a functional projection above VP, to the left of the particle which remains *in situ*.

Such a solution, however, fails to account for two facts about object pronouns. It does not explain why object pronouns may remain after a particle when it is brought to the foreground, such as when the pronoun receives focus, is coordinated with another pronoun, or has deictic force, as shown in the examples below from Johnson (1991).[78]

(554) a. Betsy threw out THEM!

b. Mikey looked up him and her.

c. Brent dusted off that. (Johnson 1991:43)

This solution also fails to account for the clitic-like behavior of object pronouns. Weak objects pronouns cliticize onto the verb phonologically, and they can apparently move together with verbal heads that undergo head movement out of *v*P. We cannot see this in Modern English, since verbs remain in *v*P, but the following example from Early Modern English demonstrates this.

(412h) Then said he unto me, This is the place where the priests shall boil the trespass offering and the sin offering, where they shall bake the meat offering; that they **bear them not out** into the utter court, to sanctify the people. (Ezekiel 46:20)

[78] (554c) is to be understood in a context where the speaker is pointing at something. In each instance, phonological reduction of the pronoun is not possible.

I suspect that object pronouns may also be a type of optionally projecting word. When the pronoun is brought to the foreground, as in (554), the pronoun projects and may behave like a normal noun phrase. In other instances, the pronouns does not project and cliticizes onto the verb. I am unfortunately unable at present to establish exactly what triggers cliticization and why it affects pronouns and not particles, so I leave this to future research.

4.6.4 Adjectival, Nominal and Verbal Particles in English?

To end this chapter, let us return to the question of what a particle is. Recall that my definition of 'particle' from §1.3, repeated below, did not make reference to any syntactic category, even though the majority of the discussion thus far has focused on prepositional particles.

(17) Particles are syntactic heads which need not project phrases and which may merge directly with a verbal head.

It is generally accepted that not all particles are prepositional, even though prepositional particles tend to be the most widespread and the most examined in the literature. In the case of English, one occasionally finds a brief mention of the few adjectival particles found in English (e.g. *open*, *short*), a couple sources list the verb *go* in *%let go the reins* as a possible particle, but no literature that I am aware of has claimed the existence of nominal particles in English. In contrast, it seems generally accepted that OV Germanic languages have nominal particles, and there is no apparent reason they should not exist in English. Given the definition of particle I have proposed, any noun which can merge with V^0 without projecting a phrase would be considered a particle. In this section, I present evidence that such nominal particles do exist in English. Before this, however, I begin with a brief review of non-prepositional particles in other Germanic languages, and provide some evidence of their particlehood. The main focus, however, is on nominal particles.

4.6.4.1 OV Germanic

Let us begin with the OV Germanic languages. The following example shows nominal, adjectival and verbal particles in German.[79] Hyphens have been added to some examples to demonstrate morphological boundaries; they are not necessarily found in the standard spelling of the words below.

(555) German Non-prepositional Particles

a. Nominal Particles

teil-nehmen	(lit. part-take, 'take part')
Klavier spielen	(lit. piano play, 'play (the) piano')

b. Adjectival Particles

kurz treten	(lit. short kick, 'go easy')
krank-feiern	(lit. sick-celebrate, 'play hooky')

c. Verbal Particles

spazieren gehen	(lit. stroll go, 'stroll')
sitzen bleiben	(lit. sit remain, 'stay down')(Zeller 2001:6f, modified)

There are several pieces of evidence in favor of treating non-prepositional words like those above as particles in the OV Germanic languages. First, we can distinguish them from verbal prefixes by noting that in V2 contexts they are necessarily stranded.

(556) a. Ich habe an der Veranstaltung teil-genommen.
I have AN the event part-taken
'I took part in the event.'

b. Ich {*teil}-nehme an der Veranstaltung {teil}.
I part-take AN the event part
'I am taking part in the event.'

[79] See Los et al. 2012:63ff for comparable data in Dutch

(557) a. Peter hat krank gefeiert
P. has PART(sick) celebrated
'Peter played hooky' (Zeller 2001:147)

b. ich hab eine kollegin die nur vom chef bevorzugt wird. sie
I have a colleague that only from.the boss preferred is she
{*krank} feierte dauernd {krank} und hat mega viele freiheiten
PART(sick) celebrates constantly PART(sick) and has mega lot free.time
gehabt.
had
'I have a colleague that only the boss likes. She constantly plays hooky and has lots of free time.'[80]

(558) a. Ich bin gestern am Strand spazieren gegangen
I am yesterday AN.the beach walking gone
'I went walking / for a walk on the beach yesterday.'

b. Ich {*spazieren} ging am Strand {spazieren}.
I walking went AN.the beach walking
'I went walking / for a walk on the beach.'

In contrast, prefixed verbs may not strand their prefix.

(559) Er {er}klärte mir die Beziehung {*er}
he explained to.me the story
'He explained the story to me.'

Nominal particles are distinct from full nPs in German in that they often may not be negated with the nominal negator *kein* 'no', unlike normal verbal objects. This is expected if nominal particles fail to project, as there is no nP (DP) layer to host nominal negation. Particle verbs with nominal particles may, however, be negated by the verbal negator *nicht*.[81,82]

[81] Similar observations and data for Dutch can be found in Booij (2010:103).

[82] Note that the English equivalent to *teil-nehmen* 'take part' can host nominal negation: *take no part*. The German construction appears to be obligatorily non-projecting on this reading, whereas the English variant is optionally projecting.

(560) a. Ich werde nicht/*kein teil-nehmen.
I will not/no part.PARTICLE-take
'I will not participate.' (lit. 'I will not take part.')

'I will not take a part/piece.'

b. Ich werde kein Teil nehmen.
I will no part take
*'I will not participate.' (lit. 'I will not take part.')

'I will not take a part/piece.'

c. Ich nehme nicht/*kein teil.
I take not/no part.PARTICLE
'I don't participate.'

d. Ich nehme kein Teil.

I take no part

'I don't take a part/piece.'

In the examples above, only the nonprojecting version of *teil* is able to have a special meaning when combined with *nehmen*. In fact, there may be some nominal particles which optionally project, as the following pair of sentences demonstrates. Solveig Bosse (p.c.) notes that the sentence in (561b), in which *Auto* must be projecting because it is negated with *kein*, has recently become more acceptable with the meaning of 'I can't drive'.

(561) a. Ich kann nicht Auto fahren
I can not car.PARTICLE drive
*'There is no car such that I can drive it.'

'I can't drive.'

b. Ich kann kein Auto fahren
I can no car drive
'There is no car such that I can drive it'

%'I can't drive.'

The literature has also provided several tests for particlehood in Dutch. In §4.2, I repeated a claim from Neeleman & Weerman (1993a) that both particles and resultatives in

Dutch must appear adjacent to a finite verb when not in V2 position, unlike other elements in the 'Mittelfeld', which lack a fixed order. The examples in that section, repeated below, show that the adjective *groen* 'green' behaves like a particle in this regard.

(361) a. dat Jan het meisje {*op} vaak {op}-merkte.
that Jan the girl {*up} often {up}-noticed

b. dat Jan de deur {*groen} vaak {groen} verfde.
that Jan the door {*green} often {green} painted
(Neeleman & Weerman 1993a:436, modified)

Some nouns have also been shown to behave like particles in Dutch. Booij (2010) and Los et al. (2012:65, 117) show that nominal particles may optionally raise with verbs in Verb Raising constructions, unlike full nPs. This is demonstrated below, where the (a) examples represent the order prior to Verb Raising, and the (b) examples after. The prefix *be-* in (563) is a transitivizer which Booij notes may only occur with *piano* if it has a determiner; in other words, *be*-V can only occur with a fully projected nP, and we see that this may not raise in the Verb Raising construction. Traces are used for expository purposes only.

(562) a. dat Jan piano t_i wilde spelen$_i$

b. dat Jan t_j t_i wilde piano$_j$ spelen$_i$
that John wanted piano play
'that John wanted to play (the) piano' (Booij 2010:101, modified)

(563) a. dat Jan de piano t_i wilde bespelen$_i$

b. * dat Jan t_j t_i wilde de piano$_j$ bespelen$_i$
that John wanted the piano TR.play
'that John wanted to play the piano' (Booij 2010:101, modified)

Booij (2002, 2010) and Los et al. (2012) also show that nominal particles (e.g. (564c)) behave like prepositional particles in the Dutch progressive construction *aan het* + INF, where they may or must follow *aan het*, depending on the particle (e.g. (564a)-(564b)); in contrast, full nPs (e.g. (564d)) may not follow *aan het* in the construction.

(564) a. Hans is zijn moeder {*op aan het bell-en/aan het op-bell-en}
Hans is his mother up at the call-INF/at the up-call-INF
'Hans is phoning his mother' (Booij 2002:23, adapted)

b. Jan de informatie {aan het *op-zoeken*/*op* aan het *zoeken*}
John the information {at the up-search/up at the search}
'John is looking up the information' (Los et al. 2012:61)

c. Jan is {piano aan het spel-en/aan het piano spel-en}
John is {piano at the play-INF/at the piano play-INF}
'John is playing the piano' (Booij 2010:100)

d. Jan is {de piano aan het bespel-en/*aan het de piano bespel-en}
John is {the piano at the play-INF/at the the piano play-INF}
'John is playing the piano' (Booij 2010:100, adapated)

4.6.4.2 VO Germanic

Like OV languages, some Scandinavian languages have been argued to have non-prepositional particles as well. Åfarli (1985) shows that Norwegian particles may be prepositional, adverbial or adjectival in nature, based on their ability to both precede and follow an object nP. I assume that adverbial particles like *heim* are actually prepositional, just as I do for their English equivalents.

(565) Norwegian Particles

a. Prepositional Particle

Jon sparka {ut} hunden {ut}

'John kicked the dog out' (Åfarli 1985:75, adapted)

b. Adverbial Particle

Vi fulgte {heim} Petter {heim}

'We saw Petter home' (Åfarli 1985:79, adapted)

c. Adjectival Particle

Vi gjorde {klar} bilen {klar}

'We made the car ready' (Åfarli 1985:79, adapted)

In Swedish, Toivonen (2003) provides examples of adjectival, verbal and nominal particles, which in her account means they are non-projecting heads which bear stress and occur as verbal complements.

(566) Swedish Particles

a. Nominal Particles

Lena höll **tal** på festen.
L. held speech on party.the
'Lena spoke at the party.'

b. Adjectival Particles

... tvåårige Adrian fick riva **sönder** det silverfärgade bandet.
two.year.old Adrian got rip broken the silver.colored ribbon
'...the two-year-old Adrian got to rip the silver-colored ribbon.'

c. Verbal Particles

Gamle farbror Adrian lät **bygga** den lilla villan.
old uncle A. let build the little house
'Old Uncle Adrian had the little house built.' (Toivonen 2003:86f, adapted)

The nominal particles we saw in German and Dutch occurred as bare nouns and received a generic or (semi-)idiomatic reading.[83] Toivonen (2003) provides examples exhibiting both of these readings with nominal particles. In both pairs, the (b) example contains a full, projecting nP not used as a particle. In contrast, the (a) examples demonstrate that non-projecting particles—necessarily lacking an article and inflection—combine with verbs to have idiomatic (567a) and generic (568a) readings, the latter corresponding to the English generic plural.

[83] It might not be a requirement that nominal particles be bare. Booij (2010:108ff) shows that bare plural nouns with a generic reading in Dutch behave similar to the bare (singular) nouns I have referred to as particles. I shall not explore this issue here, though I suggest that the presence of a generic plural marker does not necessitate that the noun project.

(567) a. Lena höll **tal** på festen.
L. held speech on party.the
'Lena spoke at the party.'

b. Lena höll ett **tal** på festen.
L. held a speech on party.the
'Lena made a speech at the party.' (Toivonen 2003:87)

(568) a. Kalle kan inte köra **bil**.
K. can not drive car
'Kalle cannot drive (cars).' (Toivonen 2003:88, modified)

b. Han körde bilen.
he drove car.the
'He drove the car.' (Toivonen 2003:100)

Toivonen (2003) further shows that, like prepositional particles, nominal particles may also precede the subject in the inversion construction below.

(569) a. Ett repertoarmöte skall äga **rum**.
a repertoire.meeting will own room
'A repertoire meeting will take place.'

b. Det skall äga **rum** ett repertoarmöte.
it will own room a repertoire.meeting
'A repertoire meeting will take place.' (Toivonen 2003:87)

Finally, let us consider English. The literature on English particle verb has claimed the existence of several adjectival particles, and at least one possible verbal and adverbial particle. Their particle status is derived from their ability to precede and follow the nP they

are predicated of.[84,85]

(570) English Non-prepositional Particles

a. Adjectival Particles

clean: wipe {clean} the table {clean}

free: cut/set {free} the slaves {free}

open: break/cut/saw/slice {open} the watermelon {open}

short: cut {short} the meeting {short}

b. Verbal Particles

go: let {%go} the reins {go}

c. Adverbial Particles

home: send {home} the kids {home}

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[84] Benjamin Bruening (p.c.) questions whether these are particles, claiming that many of them feel like heavy shift. He notes the following contrast (judgments his).

(i) a. He wiped off some.
b. ?? He wiped clean some.

(ii) a. He cut off some.
b. ?? He cut short some.

My own judgment is that *some* is always slightly marginal after particles when not followed by a noun, but I agree that *some* is less awkward after the examples above with prepositional particles than after those with adjectival particles. Nonetheless, I do not believe that the continuous order involving adjectival particles is due to heavy shift. If that were the case, we should expect all adjectival resultative secondary predicates to sound equally good in the continuous order, but most of them do not even sound marginally acceptable.

(iii) a. * He drank dry the pub.
b. * He hammered flat the metal.
c. * He sang hoarse himself.

Furthermore, it may not actually be the case that all particles allow particle-shift as easily as others. I find *He shut John up* perfect but *He shut up John* a bit marginal, even though I feel no such contrast between *He called John up* and *He called up John*. Despite this, I assume that both *shut up* and *call up* are particles. Likewise, despite the contrast between prepositional and adjectival particles noted above, I assume that both are instances of particle-verb construction.

[85] Based on Google Ngrams (Michel et al. 2011), use of the continuous order *let go the reins* has decreased while the use of *let go of the reins* has increased. The two are not likely identical in meaning, though I have been unable to verify this. *Let go of the reins* does differ slightly from the discontinuous *let the reins go* in meaning (in the former, a person must be holding the reins but not in the latter), and of course the two forms differ in whether Case-marking requires *of*-insertion or not.

English likewise contains many V + bare N combinations which resemble the nominal particles in German, Dutch and Swedish above. These combinations invariably do not take a nP complement unless a Case-marker is present (i.e. *of* or another preposition). As with the examples from other languages, all of the nominals in the constructions below allow only a generic or (semi-)idiomatic reading.

(571) a. take account (of), take advantage of, take care (of), take charge (of), take issue (with), take joy (in), take/make note (of), take notice (of), take part (in), take pleasure (in), take place, take root

b. make mention of, make note of, make use of

c. pay attention (to), set fire (to)

Most of the nouns above can project and take a determiner, sometimes allowing or requiring a referential meaning in this case. In the case of *make a note of*, the presence of the article allows both referential and non-referential readings. In other cases, the addition an article forces a referential meaning, as in *take a part in*. In some cases an article is not allowed at all, though a determiner like *some*, *no* or the combination *a little* may generally occur with the noun: *take no part in*, *take a little advantage of*, *pay some attention to*.

The ability for a noun to lack a determiner, however, is not sufficient to claim that the nouns above do not have to project. Mass nouns lacking determiners may undergo the same types of movement as other noun phrases, indicating that they can project despite lacking an overt determiner (e.g. *Chicken, I ate yesterday*). There is, however, one test which picks out a difference between full nPs and some of the nominal particles (571): the inversion test used by Toivonen (2003) to pick out some Swedish nominal particles. Presentational-*there* constructions typically do not occur transitive contexts, but the expressions *take part*, *take place* and *take root* are allowed in the construction iff no determiner is present, as the following shows. At the very least, this shows that *part/place/root* are syntactically distinct from full nPs. In the present account, they are unique in that they are nonprojecting heads in the presentational-*there* construction.

(572) a. There took place a riot after the game.

b. * There took a riot place after the game.

c. * There took no place a riot after (any of) the games.

(573) a. Imagine yourself, dear Professor, what a noise could be made if there took part a chorus of my seven children and five others with papas and mamas.[86]

b. ...and in the discussion which followed there took part two officers who are...[87]

(574) a. ...in the South there took root a system of patron-client relations...[88]

b. Behind my seeming calmness there took root a nervousness that I hadn't known since North Africa.[89]

Further, I noted that while Dutch exhibits a bare nominal particle in the expression *piano spelen* 'play piano', the obligatorily transitive version of *spelen*, *bespelen*, cannot occur with *piano* unless it is accompanied by a determiner. I suggested this was because the nominal particle does not need Case, while *bespelen* must assign Case. I suggested in §4.3.1 that it is precisely because these nonprojecting nouns do not need Case that they may occur in inversion constructions like those immediately above.

In sum, I suggest that English, like other Germanic languages, may have particles derived from any lexical syntactic category, including nouns. It would, in fact, be surprising if this were not the case given the present criteria for particlehood, which requires only that a word need not project, and that it merge directly with V^0. There is no obvious reason why nonprojection should be limited to prepositions, nor does it appear to be so.

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[86] Paget, Stephen (1920). *Sir Victor Horsley: a Study of His Life and Work*. New York: Harcourt, Brace and Howe. p 152.

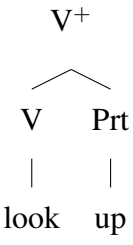
[87] Buckingham et al. (eds) (1986). *The Athenæum: A Journal of Literature, Science, the Fine Arts, Music, and the Drama*, no. 3600, Oct 24, p. 562.

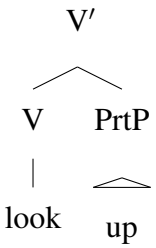
[88] Agnew, John A. (2002). *Place and Politics in Modern Italy*. Chicago: University of Chicago Press. p. 82.

[89] O'Reilly, James & Larry Habegger (eds) (1993). *Travelers' Talers Thailand: True Stories*. Berkeley, CA: Publishers Group West. p. 382.

4.7 Conclusion

This chapter proposed and defended a syntactic analysis of the particle-verb construction, proceeding to demonstrate how the account handles the behavior of particle verbs in interaction with other syntactic phenomena. The details of the analysis are as follows. I argued that particles are optionally projecting heads, forming a syntactically complex head with the verb when they do not project, and merging as the head of a small-clause-complement of the verb when they project.

(347) a. 

b. 

I claimed that a projecting particle may only give rise to the discontinuous order, while a non-projecting particle may give rise to both the continuous and discontinuous orders, depending on whether the particle verb's object raises overtly or covertly to its Case position between VP and *v*P. In order to avoid the inflection and excorporation problems, and because other data suggests particles do not undergo head-movement, I adopted the Conflation approach to head-movement, thereby allowing a nonprojecting particle to remain *in situ* while the verb raises without additional stipulations.

With the syntactic analysis laid out, one of the primary goals of the remainder of the chapter was to demonstrate how the analysis predicted or was at least compatible with the behavior of particle verbs when interacting with a wide range of other 'simplex' constructions. To this end, I applied the analysis to constructions involving coordination, RNR, gapping, V-to-C movement, *right*-modification, and other phenomena, establishing the resilience of the analysis. I also provided explanations for several issues internal to the particle-verb construction, such as the greater word-order freedom of transparent particles over nontransparent particle and the restriction against non-nP 'arguments' from occurring in pre-particle position.

While most of these patterns were explainable using the syntactic analysis of the particle-verb construction proposed here, the Verb Raising construction was a notable exception. I argued that the word-order patterns found in Verb Raising constructions are better handled in the phonological component than as the result of syntactic movement. I proposed that Verb Raising involved the reordering of pairwise precedence relations between hierarchically adjacent heads. This was claimed to operate over prosodic phrases, thereby accounting for the differential behavior of projecting and nonprojecting particles in the construction.

The following chapter will continue the assessment of the proposed syntactic analysis, this time examining the interaction between the particle-verb construction and more 'complex' phenomena.

Chapter 5

SYNTAX OF COMPLEX PARTICLE-VERB CONSTRUCTIONS

This chapter examines a the set of complex particle-verb constructions examined in detail in Kayne (1985) and den Dikken (1995). I will show that the analysis developed in the previous chapter can be extended with additional assumptions about the differential behavior of ECM subjects of small clauses versus IP clauses, demonstrated in Lasnik (1999, 2001, 2002, 2003) and Hong & Lasnik (2010), to provide a surprisingly accurate explanation for the grammatical variability exhibited in the various word orders of the complex constructions.

What I consider complex particle-verb constructions includes particle verbs which take infinitival arguments and small-clause arguments, those which occur in prepositional datives and double-object constructions, and those which occur with an adjectival resultative. Examples of each type are included below. Some important nuances in the judgments provided here will be discussed in the subsections below.

(575) Infinitival Argument

a. They're trying to make John out to be a liar.

b. * They're trying to make John to be a liar out.

c. (?) They're trying to make out John to be a liar. (Kayne 1985:113)

(576) Small Clause Argument

a. They're trying to make John out a liar.

b. * They're trying to make John a liar out.

c. *? They're trying to make out John a liar. (Kayne 1985:108f)

(577) *to*-dative Constructions

a. The company sent a cease-and-desist letter out (to the blogger.)

b. The company sent out a cease-and-desist letter (to the blogger.)

c. * The company sent a cease-and-desist letter to the blogger out.

(578) Double-object Constructions

a. The company sent the blogger out a cease-and-desist letter.

b. % The company sent out the blogger a cease-and-desist letter.

c. * The company sent the blogger a cease-and-desist letter out.

(579) Adjectival Resultatives with Particles

a. John painted the barn up red.

b. % John painted up the barn red.

I discuss each of these complex argument types below in turn.[1] I account for the fully

[1] I do not discuss the data involving *wh*-extraction from complex particle-verb constructions found in Kayne (1985:111ff) and den Dikken (1995:61ff), although subextraction data will be examined later in §5.6. It is not clear to me how reliable the judgments for some of the crucial sentences provided in the original texts are, specifically for the examples below.

(i) *? What kind of liar are they trying to make Bill out? (Kayne 1985:111)

(ii) *? What kind of tools did they hand John down? (Kayne 1985:116)

(iii) a. On which shelf did they put *down* the books *t*?

b. *? On which shelf did they put the books *down t*? (den Dikken 1995:62)

(iv) a. To whom did they send *out* a schedule *t*?

b. *? To whom did they send a schedule *out t*? (den Dikken 1995:62)

Speakers I asked found (i) ungrammatical or marginal, but no speaker I have asked allows *make out* constructions to take SCs to begin with. Interestingly, more than half of 7 speakers in one task actually found the *wh*-extracted variant of (i) better than its corresponding indicative variant like that in (575a). As a result, it is unclear what the judgment of (i) should be relative to (575a).
On average, the judgment in example (ii) was confirmed by my informants, with a certain degree of variability. But this might be due to the use of the verb *hand* rather than some other ditransitive verb. It has been noted that some speakers allow the particle to precede both objects in double-object constructions such as *John sent out the stockholders a schedule*. The degree of acceptability of this order seems to depend, in part, on the choice of (ditransitive) verb and particle. To me, *John gave out the stockholders a schedule/their schedules* is more marked than *John sent out the stockholders a schedule*. *Bill handed down John the tools* is even more marked. When we try *wh*-extracting from a more acceptable base sentence, I find the sentences much more acceptable: *What kind of schedule did John send the stockholders out?*

ungrammatical examples above by showing that they would need to be derived from a projecting particle, but that projecting particles are generally not compatible with these constructions. The judgment distinction between the grammatical and marginal examples in (576), (578) and (579) will be shown to follow from a requirement or preference (depending on the speaker) for ECM subjects of small clauses to raise to object overtly. This requirement/preference does not hold of ECM subjects of IPs, accounting for the difference between (575c) and (576c). After I have finished examining the complex particle-verb constructions, I demonstrate how the extended analysis can be carried over to account for the grammatical variability found in subextraction contexts.

5.1 SC and IP Arguments

I begin the discussion of complex particle-verb constructions by examining those particle-verb constructions which take SC and IP arguments. Although these constructions have played a significant role in several accounts of the particle-verb construction and a critical role in some claims about ECM subjects (see below), they are incredibly rare constructions. I am not aware of any transitive particle verb besides *make out* which can take a SC argument, and I only know of a few intransitive particle verbs which do (e.g. *end up*, *turn out*).[2] Similarly, the only transitive particle verb that can take an IP argument besides *make out* seems to be *figure out*, while the intransitive *turn out* is likewise rare in allowing an IP argument. Despite their rarity, however, these construction reveal a great deal about the structure of the particle-verb construction, and they ultimately provide significant support for the present proposal.

With respect to (iii), only one of my informants reflected the judgment in den Dikken (1995). Other speakers generally felt no difference between the two sentences, and liked both of them. Finally, my informants quite clearly agreed with the relative pattern of judgments in (iv) given in den Dikken (1995), but there was considerable variation on (ivb), with judgments ranging from fully grammatical to fully ungrammatical.
I believe that a much larger sample of judgments of these constructions needs to be systematically collected to increase the level of confidence in the judgments we seek to explain, and to look for judgment patterns across constructions. This research, however, I must leave for the future.

[2] According to Kayne (1985:111), neither Dutch nor German have a particle verb which takes a small-clause complement.

Let us first briefly examine the role of the SC/IP with respect to the particle in the constructions in (575)-(576). While one option would be to treat the SC/IP arguments as internal arguments of the particle, Kayne (1985) treats them as the subject of the particle *out*. From a semantic perspective, Kayne's treatment appears to be correct. One of the common uses of *out* is to indicate something moving out into the open, becoming accessible or public knowledge (e.g. *shout out the answer*, *bring out one's natural beauty*, *figure out the truth*). In *make out X* constructions, the (presumably false) proposition *X* is what is made public. Since the IP/SC appears to be a semantic subject of the particle, I follow Kayne in treating it as the particle's subject, just as I have treated other arguments of particles.

Now that we have determined the IP/SC in question to be the particle's external argument, let us move on to accounting for the differing grammaticality of the constructions in (575)-(576), beginning with the fully ungrammatical (b) order in which the particle follows the entire IP/SC argument. To derive this order in the present account, the particle must have projected, taking the IP/SC in its subject position in SpecPrtP.

(580) They're trying to make [$_{PrtP}$ [$_{IP/SC}$ John (to be) a liar] out]

The structure above is essentially identical with Kayne's underlying structure of the same construction, and we are able to account for the ungrammaticality of this as a surface order in a similar fashion; specifically, *John* is unable to receive Case in this order. For Kayne, *John* could not received Case via ECM as Government is blocked by the presence of two maximal projections. Under more recent syntactic assumptions, if small-clauses are treated as phases, *John* cannot be targeted for movement (to a Case position) because it is not at the left edge of the relevant phase, PrtP (the entire IP/SC being at its left edge), and is thus not visible within the *v*P phase. It therefore remains Caseless, and the derivation crashes.[3]

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[3] Benjamin Bruening (p.c.) points out that whereas a *barriers*-style analysis like Kayne's can successfully prevent extraction of the subject of a subject, existing theories of locality cannot prevent *John* in the sentence in (580) from remerging with PrtP, forming the structure below, so that it remains visible within the *v*P phase.

(i) They're trying to make [$_{PrtP}$ John [$_{PrtP}$ [$_{IP/SC}$ ~~John~~ (to be) a liar] out]]

While I must assume that this derivation is not possible, I am unable to provide a theory of locality which would rule out such a derivation.

Although Kayne disallows the structure in (580) at Surface Structure, he attempts to derive the grammatical and marginal orders in (575c)-(576) from this underlying structure (see §2.1.1 for a critique). I will not attempt to derive the grammatical and marginal orders from the structure in (580); instead, I will demonstrate how they are derived quite naturally from the nonprojecting structure I have proposed. Suggesting that these orders must be derived from the nonprojecting structure is the fact that *right*-modification, which only occurs when the particle projects, is not be possible whenever the particle takes an external IP or SC argument. Examples (581)-(582) show that *right*-modification of the otherwise grammatical or marginal orders of the *make out* constructions is not possible (the particle-final orders are ungrammatical with or without *right*-modification; cf. exx (575b) and (576b)).

(581) a. They're trying to make John (*right) out to be a liar.

b. (?) They're trying to make (*right) out John to be a liar.

(582) a. They're trying to make John (*right) out a liar.

b. *? They're trying to make (*right) out John a liar.

This is further confirmed by the following unaccusative examples of particle-verb constructions in which the particle takes an external IP/SC argument. Again, *right*-modification of the particle is not possible.

(583) a. John ended {up} a linguist {*up}.

b. John turned {out} intelligent {*out}.

c. John turned {out} (to be) a linguist {*out}. ((a)-(b) from Kayne 1985:107)

(584) a. John ended (*right) up a linguist.

b. John turned (*right) out intelligent.

c. John turned (*right) out (to be) a linguist.

The inability of particle verbs which take IP or SC arguments to be modified by *right* supports the conclusion that the underlying discontinuous structure cannot serve as a source for the grammatical or marginal orders in (575)-(576) and (583). This additionally serves as

evidence that rightward movement of the IP/SC from the structure in (580), like that proposed in Kayne's (1985) account, is not an option, as it does not predict the unavailability of *right*-modification. Likewise, the account in den Dikken (1995) does not predict the ungrammaticality of *right*-modification in the examples above (see §2.1.4 details).[4]

Consider next the grammatical and marginal orders of the *make out* construction. I have argued that we must derive these orders from the underlying continuous structure, and I have further claimed that the IP/SC argument of *make out* occupies the same syntactic position as other arguments of particle verbs. This means that the underlying structure of the acceptable orders of the *make out* construction is the following.

(585) $[_{V'}\ [_{V^+}$ make out] $[_{IP/SC}$ John (to be) a liar]]

I have claimed above that Case-checking may occur overtly or covertly in English, and it is this claim which will allow us to derive the acceptable orders. The fully grammatical orders in (575a) and (576a) are derived from the continuous structure in (585) when *John* raises overtly for Case, while the marginal orders in (575c) and (576c) are derived when Case is checked covertly.

Now comes the tricky part. Given that I have claimed objects only optionally raise to get Case overtly, why is the order in which the object has overtly raised preferred to order in

[4] Den Dikken (p.c.) asks whether there is syntactic evidence in favor of placing the SC/IP argument in the specifier position of the particle *out*, as I have claimed, rather than its complement position. He points out that the current analysis predicts that *right*-modification of *out* should, in principle, be possible if we replace the SC/IP proposition with a CP argument, as in (i) below. (See also fn. 62 in the previous chapter.)

(i) They'll make it (right) out that John is a liar.

In this case, an expletive *it* would be inserted directly in the accusative Case position without needing to raise out of the SC/IP, which was the problem for the sentence in (580). As far as I can tell, there is no significant difference in grammaticality whether *right* is present or not in (i), though more judgments should be gathered to confirm this. Of the speakers I have consulted, there is some variation concerning whether they prefer (i) with or without *right*, or find no difference between the two options; however, to the extent that speakers allow (i) (with expletive *it* and a CP argument), the version with *right* is better than the use of *right* in the constructions (581)-(584), lacking the expletive *it*. Thus, in addition to the semantic argument for treating the SC/IP argument as the FIGURE of *out* and placing it in the specifier position of a projecting particle, we also find syntactic support for this claim.

which it remains *in situ* in (576)?[5] Furthermore, why is there such a strong contrast between the acceptability of (575c) and (576c)? To understand why, we must first examine the scope differences between the subjects of IP and SC complements of verbs.

Lasnik (1999, 2001, 2002, 2003) and Hong & Lasnik (2010) provide arguments to the effect that ECM subjects of small clauses obligatorily raise overtly while ECM subjects of IPs optionally raise overtly, making specific reference to the *make out* construction. I reproduce one of the central points of their argumentation below, adopting a slightly revised version of their conclusion. Before we examine the *make out* construction, though, we must examine some preliminary data.

First, it has been known since at least Williams (1983) that subjects of raising verbs are able to take wide or narrow scope if they have raised out of an IP, but they may take only wide scope if they have raised out of a SC.[6]

(586) a. Someone seems to be sick (someone > seem; seem > someone)

b. Someone seems sick (someone > seem; *seem > someone)

(Williams 1983:293, modified)

The same pattern is found with ECM subjects. In the following examples, *two assumptions* is able to take narrow scope when it is an ECM subject of an IP but not when it is an ECM subject of a small clause. Unlike the pattern above, however, it is not evident whether *two assumptions* has raised overtly in either sentence.

(587) a. John proved two assumptions to be false. (two > prove, prove > two)

b. John proved two assumptions false. (two > prove, *prove > two)

(Stowell 1991:201, modified)

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[5] I assume that the slight difference between (575a) and (575c) is due to non-syntactic factors such as prosody or Information Structure.

[6] Williams (1983) first used scope data to argue against the existence of small clauses. For a recent counter-argument, which shows that small clauses headed by modal adjectives do allow a narrow scope reading, see Moulton (2013).

Note also that when the quantified expression *two assumptions* is the subject of a CP complement of the verb, only narrow scope is allowed.

(588) John proved that two assumptions were false. (*two > prove, prove > two)

Next, consider the following example showing the interaction of a quantifier with negation in a raising construction. This example is discussed in Lasnik (2001, 2003), citing Chomsky (1995b).[7]

(589) a. (it seems that) everyone isn't there yet

b. everyone seems [*t* not to be there yet] (Chomsky 1995b:327)

In (589a), negation may take scope over the quantifier, but the embedded negation in (589b) may not scope over the raised quantifier. Chomsky (1995b) takes this to suggest that "reconstruction in the A-chain does not take place" (p. 327). Considering, however, that reconstruction appears to be possible in (586a), this seems too strong a claim. Nonetheless, it appears that scope reconstruction below negation is ruled out.

So far, it appears that ECM subjects of small clauses must take scope outside of the small clause. In contrast, ECM subjects of IPs may take either wide or narrow scope readings. Last of all, when negation is present, reconstruction into a lower clause appears to be ruled out. Consider now how quantifier scope behaves in the *make out* construction when it takes an IP complement containing negation. Here, we see that depending on the position of the quantifier *vis à vis* the particle, narrow scope may or may not be available.

(590) a. The mathematician made every even number out not to be the sum of two primes. (every > neg; *neg > every)

b. The mathematician made out every even number not to be the sum of two primes. (every > neg; neg > every) (Lasnik 2003:(27)-(28), adapted)

Lasnik (2003) takes this pattern to indicate that the ECM subject of the IP in the *make out* construction raises to object overtly in (575a) but not in (575c), the idea being that nPs cannot

[7] Lasnik notes that this observation is first found in Zubizarreta (1982), who attributes it to Chomsky.

be interpreted (i.e. reconstructed) below their Spell-Out position (see Lasnik 1999:201f for additional tests yielding the same result). Further, the inability of the ECM subject of a small clause to take narrow scope is argued to indicate that it has raised overtly.

I accept a nuanced view of this claim. First, I already noted that in light of the availability of a narrow scope reading in (586a), we cannot simply claim that "reconstruction in the A-chain does not take place". It appears that we can, however, claim that reconstruction in the A-chain does not take place when negation is present in the clause out of which a quantifier has raised. As such, the difference between (590a) and (590b) indicates that the quantifier *every* remains in a small-clause in (590b) but not (590a). This is, of course, what I claimed above.

Returning to the questions posed earlier, we can relate the strong contrast between (575c) and (576c) to the availability of the narrow scope reading of ECM subjects of small clauses and IPs. Recall that only ECM subjects of IPs allow narrow scope reading. Lasnik argues that because the ECM subject of a small clause does not allow narrow scope, it must have raised out of the small clause overtly, whereas ECM subjects of IPs optionally raise overtly. As a result, (575c) is predicted to be possible, while (576c) is predicted to be ungrammatical.

While this seems to be a good result, it fails to explain why (576c) is preferred, if only slightly, to (576b). Thus, I depart a second time from Lasnik's claims and suggest that the ECM subject of a small clause must (generally) be interpreted outside the small clause, but for some speakers this subject may nonetheless remain *in situ* at Spell-Out. I defend this claim below.

Consider first the judgment of the sentence in (576c). As the judgments indicate, Kayne (1985) finds (576c) slightly better than (576b). Now, compare this pattern of judgments to the judgments Kayne provides for the following paradigm involving the double-object construction.

(591) a. They handed John down the tools.

b. * They handed John the tools down.

c. *? They handed down John the tools. (Kayne 1985:116)

For Kayne at least, the pattern of judgments found in the *make out* + small clause construction match the judgments found in the double-object construction. Later in the same paper, Kayne points out that some speakers do allow the particle to precede both objects in a double-object construction, providing the following example. As a speaker who allows the structure in (592), I wish to add that while this order sometimes feels perfectly fine, it is generally dispreferred to the order where the particle appears between the two objects.

(592) % The board sent out the stockholders an announcement (Kayne 1985:120)

Below, I will argue that the double-object construction involves a HAVE-headed small-clause, with the POSSESSOR argument its external argument. Supporting this conclusion, consider that the ECM subject of a double-object construction is claimed to necessarily be interpreted with wide scope. This is exactly what we expect given the claims thus far.[8]

(593) Maria gave a baby every bottle. (*every > a bottle) (Bruening 2010a:525, adapted)

If this view of the double-object construction is correct, then the marginal acceptance of (592) by some speakers suggests that some speakers might also find (576c) acceptable. Unfortunately, I am unable to find speakers who accept *make out* constructions at all when they take a small-clause complement, so I cannot claim with certainty that this is the case. Nonetheless, speakers quite consistently agree with the relative pattern of judgments provided by Kayne even if they do not fully accept any *make out*+small-clause constructions, so I will assume that the'intermediate' grammatical nature of the *make out* construction in (576c) and the double-object constructions in (591c) and (592) have the same explanation.

[8] It is not actually entirely true that the ECM subject of a double-object construction cannot have narrow scope. While this is the standard claim in the literature, there are speakers who allow it to take narrow scope. In the present account, this is not unexpected, as some speakers allow ECM subjects to raise out of small clauses covertly.

Specifically, the ECM subject of a small clause must be interpreted outside the small clause. For many speakers, this means that it must raise out of the small clause overtly, but there are some speakers who allow the raising to be delayed until LF. Why, then, must a small clause's ECM subject scope outside of the small clause, but not an IP's ECM subject? I suspect it has to do with the existence/non-existence of IP, which is the landing site for quantifiers and can also bear an EPP feature. The absence of an IP node in a small clause prevents the quantifier of raised nPs from remaining in the small clause, thereby forcing it to scope outside the small clause at LF. In contrast, a quantifier in an ECM subject of an IP may adjoin to IP prior to extraction of the subject at LF for Case, provided the ECM subject has not overtly raised out of the IP with the quantifier.[9]

In this subsection, we have seen that IP/SC arguments of particles may not precede the particle because the subject of the IP/SC would be unable to receive Case. In contrast, when such an argument is merged as the sister of [$_{V^+}$ make out], its subject is an ECM subject and may raise to object position overtly to check its case either overtly or covertly.

5.2 Prepositional Dative

Let us consider next the prepositional dative. In this construction, a verb takes both a THEME complement and a GOAL-PP. Particles occurring in the prepositional dative may precede or follow the THEME argument; however, they may not follow the GOAL argument. This is demonstrated below.

(594) a. The company sent a cease-and-desist letter **out** (to the blogger.)

b. The company sent **out** a cease-and-desist letter (to the blogger.)

c. * The company sent a cease-and-desist letter to the blogger **out**.

While the GOAL-PP is usually required in the prepositional data, it is optional when particles combine with a prepositional-dative construction, indicating that the particle fulfills

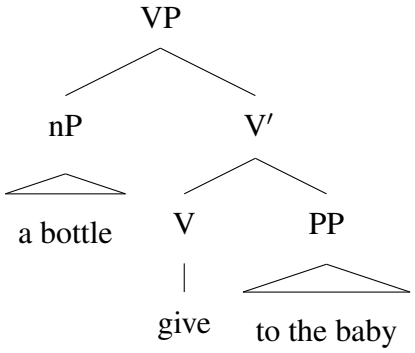
[9] See Moulton (2013) for discussion of some small clauses which allow low scope interpretations. He argues that they consist of certain functional structure which licenses quantification.

the GOAL θ-role.[10]

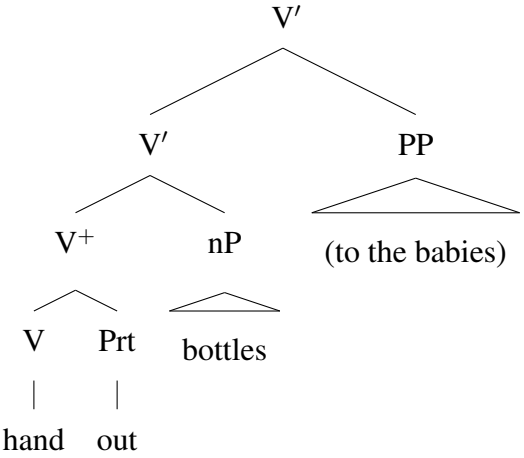
(595) The company sent a cease-and-desist letter *(to the blogger).

Based on Bruening's (2010a) and Beck & Johnson's (2004) arguments against a small-clause approach to the prepositional dative construction, I treat the nP and PP of a prepositional dative as individual arguments of the verb, merging both in VP. Those authors adopt a structure in which the GOAL-PP merges with the verb as its complement, followed by the THEME-nP, which merges as the specifier of VP. When the verb merges with a non-projecting particle, which functions as the GOAL argument, the THEME argument will be treated as the complement of the complex verb rather than its specifier; thus, the particle will precede the THEME argument.

(596) a.



b.



In (594), we saw that the particle may precede or follow the THEME argument, but it may not follow the *to*-PP. If we consider *right*-modification, we find that the possibilities mirror those of monotransitive particle-verb constructions: the particle may be modified in the discontinuous order and not in the continuous order.

(597) a. The company sent a cease-and-desist letter **right out** (to the blogger.)

b. * The company sent **right out** a cease-and-desist letter (to the blogger.)

c. * The company sent a cease-and-desist letter to the blogger **right out**.

[10] Although I use the term GOAL, a more generic term like DIRECTION is probably more accurate in describing the subcategorized indirect object: *John sent Bill (flying) down the stairs/to the store*, *John handed the ball over the fence/to Bill*.

Like (594c), (597c) is ungrammatical because the particle, projecting or not, is merged right of the *to*-PP. The continuous order disallows *right*-modification in (597b) because the particle fails to project. Finally, the structure of (597a) is derived in the normal manner when the particle projects, as in (598). Here, *a letter* originates in SpecPrtP, raises through SpecVP to receive a θ-role from the verb, and continues on to the Case position.

(598) send a letter [$_{VP}$ ~~a letter~~ [[~~send~~ [$_{PrtP}$ ~~a letter~~ right out]] to the blogger]]

In many cases, there is an alternative derivation available for the orders in (594a) and (597a) where the particle and *right* are both modifiers of the *to*-PP. We know that prepositions/particles may modify other prepositions, as examples like the following demonstrate.

(599) Out by the lake we saw John fishing.

Given the structures in (596) it should not be possible to front the *to*-PP together with a particle, as they do not form a constituent. When a fronted PP contains a prepositional modifier, it is therefore distinct from the particle, as the examples verify. In (600a), the *to*-PP is fronted together with a modifier *out*, while the particle *off* remains *in situ*. If we try to front the particle with the *to*-PP, the sentence becomes ungrammatical.[11,12]

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[11] Although I do not examine benefactives with *for*-PPs here, they seem to behave similar to constructions with *to*-PP. Just as the particle does not front with a *to*-PP, it does not front with a *for*-PP, as the following shows.

(i) a. John broke a piece of chocolate off for each child.
b. For each child, John broke a piece of chocolate off.
c. * Off for each child, John broke a piece of chocolate.

[12] Toivonen (2003:104ff) provides data demonstrating that Swedish Ps can similarly serve as modifiers of prepositional phrases and behave differently from particles. While Swedish particles are generally disallowed in the discontinuous order, as (i) demonstrates, when a P element forms part of a larger, spatial PP, it may follow the argument of the verb.

(i) a. Han kastade ut böckerna.
he threw out books.the
'He threw the books out.'
b. * Han kastade böckerna ut.
he threw books.the out

(Toivonen 2003:105)

(600) a. Out to the bloggers we sent the letters off.

b. * Off out to the bloggers we sent the letters.

Given that many prepositions/particles can occur as prepositional modifiers in the manner described above, it will often be the case that sentences like (594a) and (597a) can be derived in more than one way.

5.3 Double-object Construction

Let us move now to the double-object construction. In all English dialects I am aware of, the particle may appear between the POSSESSOR and THEME arguments of the double-object construction, while only some dialects allow it to precede both the POSSESSOR and THEME arguments.[13] Particles are generally unable to follow both arguments, though I will discuss some exceptions later in §5.3.2. Below, I provide two sets of examples of double-object constructions. The first has a *to*-PP counterpart, while the second has a benefactive *for*-PP counterpart. I use the term 'counterpart' somewhat loosely, as there are semantic differences between the double-object construction and the *to*- and *for*-PP counterparts, and I do not treat them as derivationally related. The main semantic distinction is that the double-object construction entails possession, while neither of the corresponding *to*-PP or *for*-PP constructions does (e.g. Beck & Johnson 2004:103f).

(601) a. The company sent the blogger **out** a cease-and-desist letter.

b. % The company sent **out** the blogger a cease-and-desist letter.

c. * The company sent the blogger a cease-and-desist letter **out**.

(ii) a. Han kastade ut böckerna genom fönstret.
he threw out books.the through window.the
'He threw the books out through the window.'

b. Han kastade böckerna ut genom fönstret.
he threw books.the out through window.the
'He threw the books out through the window.' (Toivonen 2003:104)

[13] Den Dikken (1995:117) notes that among speakers who allow the particle to precede both arguments, some only do so for those double-object constructions related to *to*-dative rather than *for*-dative variants. Others, including myself, make no such distinction.

(602) a. John cooked the children **up** some chicken.

b. % John cooked **up** the children some chicken.

c. * John cooked the children some chicken **up**.

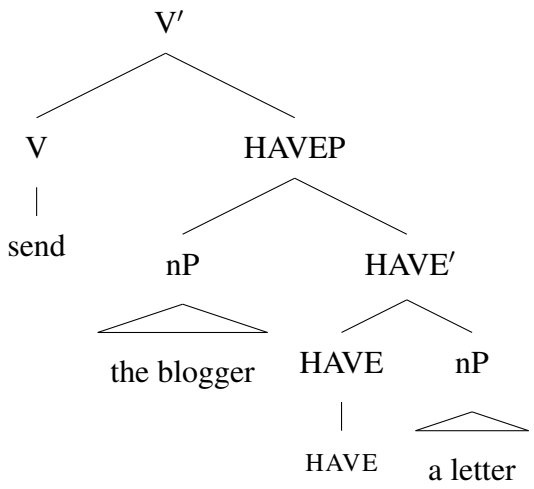
In the sections below, I first integrate the current account with an analysis of the double-object construction as a small-clause structure. After I account for the basic pattern of judgments indicated above, I examine the more complex issues regarding the double-object construction; specifically, I extend my analysis to account for the occasional appearance of particles after both objects in a double-object construction, and I offer an explanation for why some speakers allow *right*-modification of the particle in the double-object construction even though many (most?) other speakers do not. Finally, I briefly consider alternative analyses of the double-object construction proposed by Larson (1988), Marantz (1993) and Bruening (2010a), showing that they are incompatible with the current analysis of the particle-verb construction.

5.3.1 The Small-clause Account

I adopt here a small-clause approach to the double-object construction involving a null HAVE head which takes a POSSESSOR argument in its specifier position and a THEME argument as its complement (cf. Harley 1997, 2002; Beck & Johnson 2004). This HAVE-headed small-clause merges as the complement of a verb, forming a type of resultative construction. The structure below ignores necessary functional structure that must exist in the HAVEP.[14]

[14] Because I assume Case to be assigned in a spec-head configuration, it must be the case that HAVE assigns Accusative case in a similar manner. HAVEP must therefore include additional functional structure into which the THEME raises, and the POSSESSOR argument must be introduced into the structure not at HAVEP, but at a higher functional projection (e.g. little haveP). The assumption that small-clauses may contain such functional layers is not novel (e.g. Bowers 2002), and it seems to be necessary in any account of small clauses which also assumes that Case is assigned solely in the spec-head configuration.

(603)



I assume that matrix verbs in double-object constructions are semantically impoverished, lacking a GOAL or THEME argument (cf. Beck & Johnson 2004:98f; 113, fn. 15). Note that it is certainly not necessary for the arguments of double-object constructions to receive θ-roles from the matrix verb. For example, in a game-show context where John correctly guesses the answer to a million-dollar question and gives his winnings to his wife, the following sentence is possible.

(604) John guessed his wife a million dollars.

Let us first consider the combination of the double-object construction with a non-projecting particle. In this case, the HAVE small-clause merges with V^+, and the HAVE subevent is interpreted as the result of a complex event like *send out*. The difference between the (a) examples in (601) and (602) on the one hand and the (b) examples on the other is then due to whether the POSSESSOR ECM subject of the HAVE small clause has raised to object position overtly, or whether this movement occurs covertly. If the argument raises overtly, the order in the (a) examples is derived, while covert raising of the argument yields the (b) examples.

(605) a. John sent the blogger [$_{V'}$ [$_{V+}$ ~~sent~~ out] [$_{SC}$ ~~the blogger~~ HAVE a letter]]

b. John sent [$_{V'}$ [$_{V+}$ ~~sent~~ out] [$_{SC}$ the blogger HAVE a letter]]

We can account for the contrast in grammaticality judgments between the (a) and (b) examples just as we did in §5.1. There, it was argued that ECM subjects of small clauses must be

interpreted in the matrix clause, and for many but not all speakers, this also meant that the ECM subject needed to raise overtly. It is, thus, predicted that speakers for whom raising is obligatory will disallow the word order in (b), while speakers who allow ECM subjects of SCs to raise covertly will at least marginally allow the (b) examples, though it remains to be tested whether a strong correlation is found.

Next, consider the combination of a double-object construction with a projecting particle. If the particle were to take HAVEP in its subject position, just as *out* in the *make out* construction took a small-clause subject, then the ungrammaticality of the (c) examples in (601) and (602) would follow because for the same reason **make John a liar out* was ungrammatical: the subject of the small clause (*the blogger* in this case) would be unable to receive Case *in situ* and it would be unable to escape across the two maximal projections HAVEP and PrtP (see p. 332).

Although this result might seem desirable from a syntactic point of view, relating the relative grammaticality judgments found in (601) and (602) with the pattern found in the *make out* construction in (576), it makes little sense from a semantic perspective. In the sentence *make John out a liar*, it is the claim that *John [is] a liar* which is put *out* into the world; i.e. *John a liar* is the FIGURE of *out*. In a double-object construction, on the other hand, a particle like *out* only plausibly predicates over the THEME argument thereof; e.g., it is not *the blogger* HAVE *a letter* which is *out* as a result of the *sending* (this is entirely nonsensical), but rather it is *the letter* which goes *out*. In the following two subsections, I will show that there are, in fact, two configurations in which a projecting particle and HAVEP can co-occur. In one instance, the small-clause headed by *out* is the complement of HAVE, while in the other instance, the HAVE-headed small clause is the complement of the particle.[15]

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[15] One observation which does not fall out directly from the present analysis is the differing acceptability of *wh*-extracting the THEME argument out of a basic double-object construction versus a double-object construction with a particle. This was first noted in Stowell (1981:341ff) and has been discussed in Kayne (1985) and den Dikken (1995). Consider the following examples.

(i) Which money did you pay the bank?

(ii) * Which money did you pay {back} the bank {back}?

(iii) Which money was the bank paid back? ((ii)-(iii) from Stowell 1981:342, modified)

5.3.2 Final Particles

Consider again the 'ungrammatical' judgment in (601c). Although it is routinely claimed that particles may not follow THEME arguments in double-object constructions, den Dikken (1995:173f) notes that it is possible to come up with constructions which many speakers find acceptable (he cites Oehrle 1976:235, Cowie & Mackin 1993, Johnson 1991, Mulder 1992 for having made similar observations; Basilico 2008:761ff and McIntyre 2011b also note this). Den Dikken provides the examples below, noting that they contain particles which are highly transparent. He suggests that a high degree of transparency is a condition for a particle's ability to appear clause-finally in the double-object construction.

(606) a. I gave John his books *back*.

b. Hey, toss me that wrench *up*, will you?

c. Why don't you send John some of those cigars *over*?

d. Would you saw me a piece *off*?

e. Will you sew me a new one *on*?

f. ? Sam handed her them *down*.

g. Gary poured me some *out*. (den Dikken 1995:173)

(607) a. Mike tossed me the wrench (**right**) *up*.

b. Sure, I'll send you those cigars (**right**) *over*. (den Dikken 1995:174)

My own survey of native speakers found significant variation in judgments for almost all sentences in (606)-(607), ranging from grammatical to ungrammatical and everywhere in

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The contrast between (i) and (ii) is entirely unexpected if the difference is due to the syntax; the only difference between the two in the present analysis is that there is a complex verbal head in (ii) but a simplex verbal head in (i), a difference which should have no effect on the ability to extract out of the HAVE-headed small clause. The difference in acceptability, then, must be due to non-syntactic factors. A possible route of investigation is to examine whether the unacceptability of *wh*-extracting the THEME in particle-verb double-object constructions is due to a combination of processing issues and the existence of a 'better' alternative, specifically the prepositional dative: *Which money did you pay back to the bank?*. Unfortunately, I am unable to determine exactly what these processing issues might be at present.

between. The only sentences with fairly consistent judgments were (606a), which all speakers found perfectly acceptable (including speakers who completely rejected all other examples), and (606f), which all speakers found highly marked or completely ungrammatical.[16]

The examples above, paired with the ungrammatical judgments of sentences like (601c)-(602c), show that we need to account for at least three things: (i) why is clause-final placement of a particle generally deemed unacceptable?, (ii) why is it sometimes at least marginally allowed?, and (iii) why do all speakers allow *back* in clause-final position? Before I attempt to answer these questions, I wish to highlight two points which will be crucial to the arguments below. First, the ability of particles to appear in this position appears to be restricted to transparent particles. Recall from §4.5 that nontransparent particles are restricted to occurring in syntactic positions which were Structurally Adjacent to the verb, while transparent particles are not restricted in this way. This suggests that the particle in clause-final position in double-object constructions is not the complement of the verb. Second, in instances where speakers allow a clause-final particle, they generally allow the particle to be modified by *right* (e.g. (607a)-(607b)). This indicates that, wherever the particle is located, it is able to project a phrase.

Next, consider that the double-object construction contains, in addition to the matrix verb, the null verb HAVE. I see no principled reason why the particle should not be able to merge with HAVE, so let us assume that this is a possibility. When *back* in (606a) merges with HAVE, and this with *give*, we form the intermediate structure in (608), giving us the

[16] Emonds (1972:557), Emonds (1976:83), Kayne (1985:120), Hudson (1992:259), den Dikken (1995:172) and McIntyre (2011b:3, 2012:5) have also noted that *back* is exceptional in this way. Den Dikken (1995) notes that the equivalent of *back* is also exceptional in Mainland Scandinavian, occurring productively in double-object constructions while other particles do not (with the exception of Icelandic). Finally, Radford (1997:444) (see §2.3.1) provides an analysis of the double-object construction combined with the particle *back*, predicting it (and other particles) to occur in all three orders.

desired word order.[17,18]

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[17] Note that if a projecting particle can merge with HAVE, a non-projecting particle should be able to as well. Such a structure would allow use to derive the same word orders as when a non-projecting particle merges with the matrix verb, taking a HAVEP complement. I will not say any more about this possibility.

[18] Collins & Thráinsson (1993) show that particles may follow both objects in Icelandic as well. This is required if they are both pronouns.

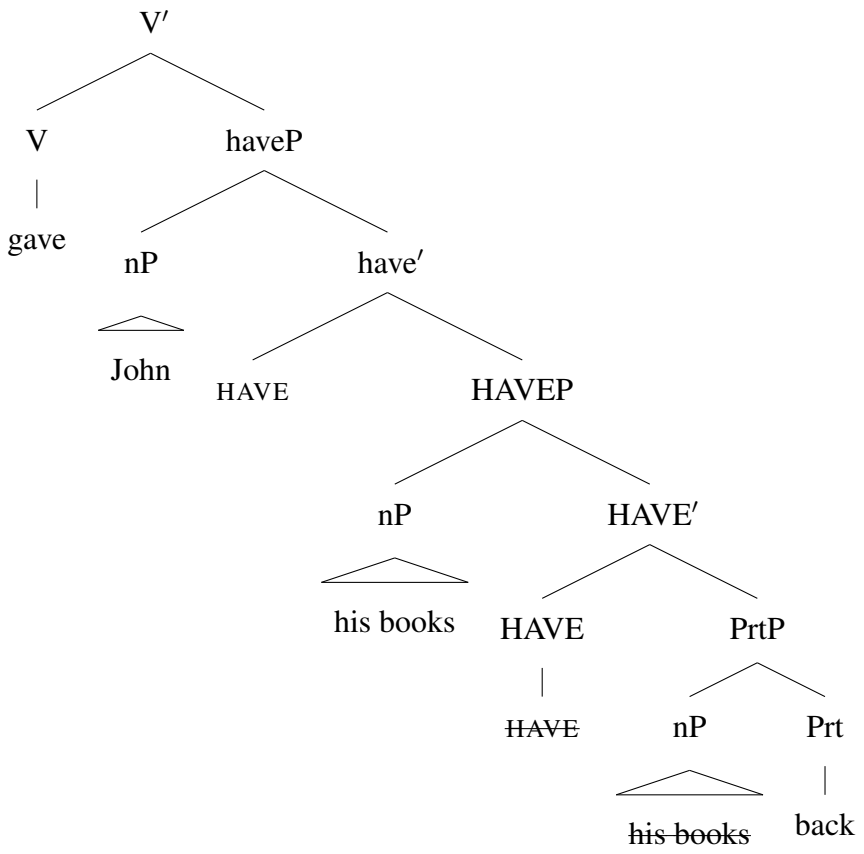
(i) a. Í gær hafa þeir sent þeim þá **upp**
yesterday have they sent them it up
'I sent them it up yesterday'
b. * Í gær hafa þeir sent þeim **upp** þá
c. * Í gær hafa þeir sent **upp** þeim þá
d. * Í gær hafa þeir sent þá þeim **upp** (Collins & Thráinsson 1993:170, adapted)

This order is also required in English when both objects are clitic pronouns.

(ii) a. I sent them it up.
b. * I sent them up it. (where *it* is not the complement of *up*)
c. * I sent up them it.

It is possible that the derivation of clause-final particles in these constructions is distinct from those which lack clitic pronouns, as presented in (608), and I suspect that any satisfactory explanation of clitic pronouns will be able to derive this data quite naturally.

(608)



Because the particle is projecting, it is correctly predicted to allow *right*-modification whenever final order is allowed. Further, by merging the particle with HAVE, we can also explain the lack of nontransparent particles in final position. The nontransparent meanings of particles only arise when they are Structurally Adjacent to a specific (class of) verb(s), but in this structure they are not Structurally Adjacent to the matrix verb. Nontransparent particle meanings should only arise in final position of a double-object construction if combination with HAVE licenses a special meaning. To my knowledge, there are no such cases, though I see no reason this should not be possible. In terms of the meaning of the construction, I assume that the HAVE subevent and the BACK subevent are treated as contemporaneous subevents, with the HAVE subevent (and by extension, the BACK subevent) interpreted as the result of the initial GIVE subevent, whose subject is interpreted as the CAUSER. Thus, the subevent of giving results in John having his books and his books being back.[19]

[19] For a recent, alternative analysis to the one presented here, see McIntyre (2011b:3ff). Rather than adopting a verbal HAVE SC in the double-object constructions, he argues that they contain a null TO-headed prepositional

Consider now why *back* is more felicitious in final position than other particles. First, note that the particle verb in (608) is not actually *give back* but rather HAVE *back*. We can paraphrase its meaning in this example as *John has his books back*, where we see that *back* readily combines with the lexical verb *have*, so it should not be unexpected that it quite felicitously combines with the more abstract null HAVE. When the particle is one other than *back*, such a paraphrase frequently becomes clumsier: #*Do you have a piece off?* (cf. *break John a piece off*). I can only assume that some speakers are more sensitive to this distinction than others, and that this is the reason some speakers accept only the particle *back* in final position.

5.3.3 *Right*-modification in the Double-object Construction

Finally, let us examine the issue of *right*-modification in the double-object construction. The standard claim in the literature seems to be that *right* is simply not allowed to precede the particle in any order in this construction, but this is not entirely accurate. We have already seen that *right*-modification is possible on the rare occasions when the particle is allowed in clause-final position. In addition, some speakers allow *right* modification of the particle when it occurs between the POSSESSOR and THEME arguments. There are at least two places in the literature where this is noted: Johnson (1991:626, fn 33) refers to the 'weak ungrammaticality' of the construction *John sent Bob right off a package*, and Toivonen (2003:177, fn. 12) notes that some speakers allow particle-modification in this context as well. I have also found many speakers, including myself, who accept particle-modification in the discontinuous order, but I have not seen any syntactic analysis accounting for this.

Based on the discussion above, I assume the following set of judgments to be representative.

SC, and then argues that clause-final particles are PP modifiers, just like the P modifiers in the following examples are: *Finally back at his house, John dropped onto his couch, exhausted*; *Out back, up in the shed, you should be able to find a lawnmower*.

(609) a. % The company sent the blogger **right out** a cease-and-desist letter.

b. * The company sent **right out** the blogger a cease-and-desist letter.

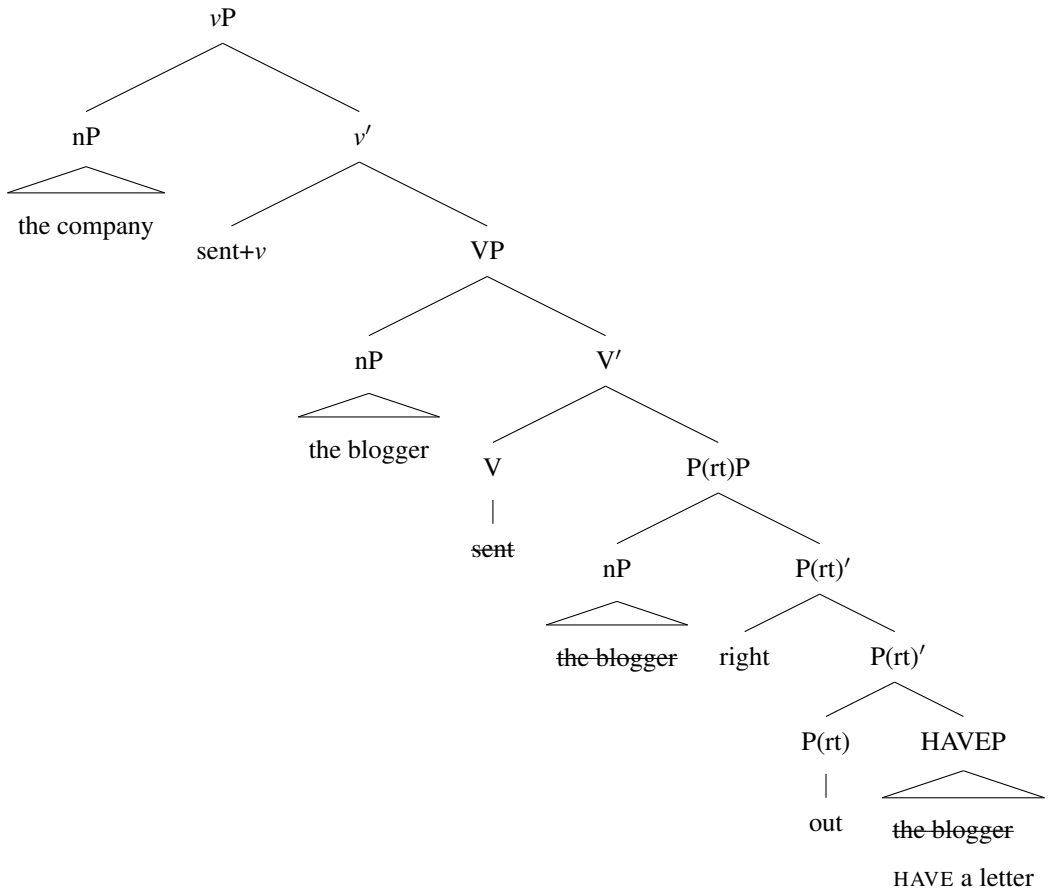
c. % The company sent the blogger a cease-and-desist letter **right out**.

The order in (609b) would be derived from the nonprojecting structure, so it is correctly predicted to disallow *right*-modification based on the discussion so far. Example (609c) was discussed in the previous subsection, where we saw that *right*-modification is predicted to be allowed in clause-final position whenever an unmodified particle is allowed there, which itself is quite restricted. The structure we cannot yet derive is the one in (609a). The equivalent of (609a) without *right*-modification was shown to be derived from the nonprojecting structure, following overt raising of the POSSESSOR argument. The nonprojecting structure, however, disallows *right*-modification, so we must seek an alternative explanation for why some speakers allow (609a).

One possible derivation, which would simultaneously account for its apparently deviant nature, would be to derive it from the clause-final particle order in (608) via Heavy NP Shift of the THEME. Granted, the nP is not heavier than *right* + particle in (609a), but let's ignore this. If this explanation were correct, speakers who allow this construction should allow it only with transparent particles that can otherwise occur clause-finally (as discussed in the previous subsection), but this is not the case. *When I get home, I plan to cook the kids right up some dinner* is, to my ear, much more felicitous than *When I get home, I plan to cook the kids some dinner up*, even though I allow final placement in sentences like *I'll send you a new brochure right out*. I thus reject this solution.

A better analysis is that the HAVE-small clause occurs as the complement of a projecting particle, yielding the following (simplified) structure. *Out* is apparently semantically impoverished, just like the main verb in a double-object construction; otherwise, it would incorrectly assign the FIGURE role to the POSSESSOR argument, which raises through its specifier position on its way to SpecFP. The HAVE-small clause is then interpreted as contemporaneous with the *out* subevent. Given the variability in judgments of sentences like (609a), it appears that not all speakers allow this structure.

(610)



5.3.4 Excursus on the Double-object Constructions: Against an Alternative Approach, and Criticisms of the Small-clause Approach

The small-clause approach to double-object constructions is adopted in large part because it fits the data in constructions containing particles. In this section, I briefly consider and reject an alternative approach to the double-object construction on the basis that it is incompatible with the current structural claims when paired with claim that particle remains *in situ*. Following this, I address criticisms of the small-clause approach to the double-object construction, though I will be unable to resolve them all.

The claim that the particle remains *in situ* makes the present account incompatible with any approach to the double-object construction arguing that the POSSESSOR argument originates in a position above (and to the left of) the verb with which the particle merges, including accounts involving VP shells or those in which the POSSESSOR is introduced by an

applicative head above VP (e.g. Larson 1988; Marantz 1993; Bruening 2010a). Were such an account adopted, the word order in (601b), where the particle precedes both arguments, would be unexplained because the particle would have no way to precede the POSSESSOR.

(611) [send [the blogger [~~send~~ out a letter]]]

One might try to alter the present analysis slightly to make in compatible with one of these accounts by treating the movement of the particle in (601b) as a kind of late phonological movement which occurred after the verb acquired all of its inflection. If this were possible, though, we would run into a different problem: if the particle were to raise toward the verb at PF, why must it obligatorily be separated from the verb when the verb is too high in the syntax (e.g. in V2 constructions), as discussed in §4.4? This is not true of verbal clitics like the object pronouns, which may raise with verbs past negation in those languages which allow verbs to raise this high, such as Early Modern English (see ex. (412h)). Such an account seems unlikely.

Alternatively, one could argue that head movement is syntactic, and that the particle and verb undergo distinct head movements, with the particle landing somewhere above the POSSESSOR. It is unclear what would motivate such movement, though, and it would also require one to develop an account of multiple syntactic head movement. The present approach does not require the addition of such an account.

Although the small-clause approach to the double-object construction is the most compatible with the current treatment of particle-verb constructions, it faces its own difficulties. Bruening (2010a), who adopts an applicative approach to the double-object construction (he does not consider particles), provides two types of explicit arguments against the small-clause approach which are worth addressing.[20] I show here that the first of his arguments does not hold, but I am unable to resolve the second complication.

[20] Bruening (2010a) provides additional arguments against a symmetrical small-clause approach, which analyses both the prepositional dative and the double-object construction as involving small clauses. These additional arguments do not hold if we claim that the double-object construction involves a small-clause structure but not the prepositional dative construction. Bruening himself admits this.

Bruening's first argument relates to the quantifier scope asymmetry reproduced below.

(612) a. Maria gave a baby every bottle. (*every bottle* cannot distribute over *a baby*)

b. Maria gave a bottle to every baby. (*every bottle* can distribute over *a bottle*)

The problem for a small-clause approach, he claims, is that both nPs in (612a) are contained within the same maximal projection and thus m-command each other. As a result, either argument should be able to scope over the other, contrary to the facts.

Bruening does not consider the possibility that the subject of the HAVE small clause raises to object position by LF and is preferably/obligatorily interpreted in the matrix clause.[21] Recall that in §5.1 I provided evidence demonstrating that small-clause subjects are interpreted in the matrix clause. If this is correct, and if the double-object construction involves a HAVE small clause, then the unambiguous wide-scope reading in (612a) is predicted.

Bruening also argues against the small-clause approach by referring to the possible classes of idioms. One problem for the small-clause approach is that there are idioms involving the verb and THEME of a prepositional dative (e.g. *give birth to X*), but no idioms involving HAVE and the POSSESSOR of a double-object construction while excluding the THEME. This absence is unexpected, given that both constructions involve the same structural configuration (a verb and its specifier) in the small-clause approach; it should be possible for the null HAVE and its specifier to form an idiom. A second problem is that the approach fails to account for the class of idioms alternating between the *V nP nP* and *V nP to nP* structures (where only the underline elements belong to the idiom), such as *throw nP a bone* and *throw a bone to nP*. I am currently unable to account for this data.

[21] In fact, not all speakers reject the narrow-scope reading of (612a).

5.3.5 Conclusion

In this section, I have argued that the double-object construction involves the merger of a HAVE-headed small clause with a verb. The general pattern of judgments is quite naturally derived in the present analysis if this small clause is only able to combine with particle-verb constructions containing nonprojecting particles. I also provided analyses of the more nuanced patterns, including placement of a particle after both a POSSESSOR and THEME argument and the availability of *right*-modification in two orders. When a particle occurs clause-finally, I claimed that it merges as the complement of HAVE rather than the verb. This claim was able to account for the word order, the restriction to transparent particles, the unique behavior of *back*, and the availability of *right*-modification when clause-final order is possible. When particles appearing between the POSSESSOR and THEME arguments allow *right*-modification, I suggested that the *have*-headed small clause merges as the complement of a projecting particle. Finally, I showed that some other approaches to the double-object construction would be incompatible with the general particle-verb construction structure proposed herein, and I addressed some criticisms of the small-clause approach.

5.4 Adjectival Resultatives and Particles

The last complex particle-verb construction to consider is the combination of particles with adjectival resultative predicates. Despite some claims that particles and resultatives are mutually exclusive (e.g. Keyser & Roeper 1992), such combinations can be found without too much difficulty, and they have been noted to exist in several Germanic languages.[22,23] At least in English, the particle must precede the resultative head, and although some have claimed that the continuous order is incompatible when a particle verb combines with an AP

[22] If we do not restrict ourselves to AP resultatives, one finds that PP resultatives such as 'to pieces' have little trouble co-occurring with particles. For example, '(in)to pieces' is compatible with 'smash up, break up, chop up, hack up, saw up', among others.

[23] Examples of particles co-occurring with resultatives in Swedish are presented in Toivonen (2003:100), Norwegian in Tungseth (2007:224), and Dutch in den Dikken (1995:76).

resultative, this is not true for all speakers, and the order is well-attested online.[24,25]

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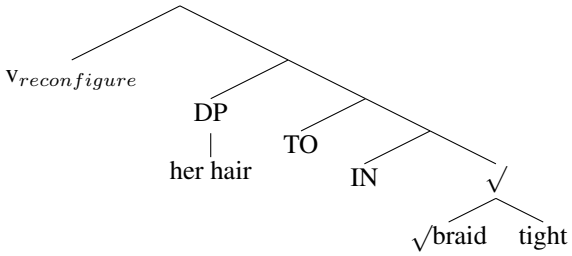
[24] Tungseth (2007:224) claims that the continuous order is ungrammatical in English. In den Dikken (1995:75), the continuous order is given the judgment *?, the same judgment he uses for *They made out John a liar*. I argued above that *They made out John a liar* should be treated similar to the variable judgment in *I sent the out stockholders a schedule*. As with the double-object construction, the discontinuous order is generally preferred in constructions with particles and adjectival resultatives, but the continuous order is certainly possible for some speakers.

[25] Den Dikken (p.c.) suggests that some of my examples, such as *cut up the onions real small*, might better be classified as 'pseudo-resultatives' as described by Levinson (2010). Levinson argues that sentences such as *Mary braided her hair tight* and *Mary sliced the bread thin* are not traditional resultatives because, according to her, the state denoted by the sentence-final adjective does not hold of the object nP but rather of an understood object denoted by the verb itself. In her syntax, the verb actually originates in a lower position, merging with the resultative predicate prior to raising into the verbal position. In the structure below, *braid* raises through IN and TO to arrive at $v_{reconfigure}$.

(i) (Levinson 2010:156)



This structure would not be compatible with the present structural claims (if the particle merged with $v_{reconfigure}$, which is defective, it would Conflate into v and *braid* would be unable to 'raise' as a result); however, it is not clear to me that we cannot treat the resultative predicate in these constructions as being predicated over the object. Levinson claims that it is not the case that *Mary braided her hair tight* entails *her hair is/became tight* (as opposed to *the braid is/became tight*) or that *Mary sliced the bread thin* entails *the bread is/became thin* (as opposed to *the slices are/became thin*), largely because the entailed sentences may seem somewhat odd. But consider when we change the verb in some of her examples. Without much difficulty, we can find attested examples of the type *John diced the lemon thin* even though we cannot say *the dice is/became thin* with the intended meaning. Likewise, we can say *Mary wound her hair tight* even though it is awkward to say *her hair is in a tight wind* (though I did find at least one attested example of this online). In fact, although Levinson says that *her hair is tight* is not entailed by *Mary braided her hair tight*, it would be entirely natural for Mary to say *my hair is too tight* after having it braided, and such a sentence is well-attested online.

The inability to create entailment sentences of the type *X is/was AP* is also true of some less controversial resultatives as well: *John beat Bill silly* does not entail the meaning normally associated with *Bill is silly*, but it is also nonsensical to say that *the beat(ing) is/became silly* with the intended meaning. We already saw that directional PP resultatives do not allow the construction of entailment sentences of the type *X is/became PP* (e.g. *John ran into the house* and **John is into the house*), even though the PP clearly predicates over the nP. And while it is quite clear that if *John drank all his money away*, *John*'s money is gone—*away* in an abstract sense—it would be odd to say *John's money is away*. In the same manner, just because it may be somewhat odd to say *the bread is thin* to describe the result of *Mary sliced the bread thin* does not mean that *thin* is not predicating over *the bread* in a slightly abstract sense.

Levinson also provides morphological evidence from some non-English languages for her distinction between pseudo-resultatives and true resultatives. For example, she points out that in Norwegian, pseudo-resultatives fail to agree with the lower nP, whereas in true resultatives agreement is obligatory. She does so using Norwegian counterparts to the English pseudo-resultatives (e.g. the Norwegian counterpart to *Mary braided her hair*

(613) a. John painted {%up} the barn {up} red.

b. John cut {%up} the onions {up} (real) small.

c. The boxer knocked {%out} his opponent {out} cold.

d. The radio station cut {%off} the song {off} short.

(614) a. John ended up dead.

b. The river froze up solid.

c. John grew up tall (and strong).

Below are additional examples retrieved from the Internet. Judgments provided are mine.

(615) a. Ask if there is any way that bonding can be done on the tooth to **build it up whole again**.[26]

b. I have commanded also to **have it built up whole again**; and that they look diligently to help those that be of the captivity of the Jews, till the house of the Lord be finished: (Early KJV (Apocrypha): 1 Esdras 6:28)

c. ? Let the concrete set up a little after you have the post in (10 min or so) and **level it up straight** with a level.[27]

---

tight), showing that they lack agreement. While her evidence certainly does suggest the need to allow for a distinction, it does not clearly show that the secondary predicate of a pseudo-resultative must be predicated of the object corresponding to the verb. I provided Norwegian examples earlier in (389)-(390) in which the resultative secondary predicate failed to agree, or optionally agreed, with the 'object' of the construction, but where it seems highly unlike that the resultative predicate predicates over the (object denoted by the) verb rather than the lower nP. For example, although *los* appears in the non-agreeing form in *Vi heiste {løs} vraket {løs}* 'We hoisted the wreck loose/free', it is certainly *the car* which becomes *loose/free* and not the *hoist* as a result. Thus, while it might be necessary to distinguish between 'pseudo-resultatives' from true resultatives, Levinson's proposed structure is problematic.
Finally, even if pseudo-resultatives are to be distinguished structurally from true resultatives, at least some (if not all) of the examples I provide appear to be true resultatives and must be accounted for. For example, *using large cuts, John cut up the onions real small* is not a contradiction, as would be expected if *small* predicated over *cut*. Likewise, in *the radio station cut off the song short*, it is the song which is shortened as a result of the cutting subevent; it would seem nonsensical for *short* to predicate over *cut* rather than *the song* in this instance.

[26] http://en.allexperts.com/q/Dentistry-966/toddler-chipped-tooth.htm, retrieved 10/22/2012

[27] http://forums.beyond.ca/showthread/t-332658.html, retrieved 10/22/2012

d. ? Never **wipe the car down dry** as sand or dirt that may be on the surface will leave scratches.[28]

e. Using your hands, **pat the dough down flat** to fill the pan...[29]

f. ...he was able to stir the cookies with the mixer, **pat down the dough real flat**, and even use the cookie cutters to cut out cookies.[30]

We thus see that AP resultatives and particles can co-occur. Given the structures I have proposed, we can account for this as follows. First, let us assume that (canonical) resultative interpretations arise whenever a predicate merges with V under v_{cause}. In particle-verb constructions where the particle merges with a verb under v_{cause}, the particle functions as a resultative secondary predicate. When a particle does not project, it still merges with a verb and is still interpreted as a result. In this case, however, because the verb+particle form another verbal head, it may take an AP as a complement which will then receive a resultative interpretation because it has merged with V under v_{cause}. (Note that this was already implicit in the discussion of the double-object construction above.) This yields constructions like (613)-(615) above. Because the AP is a small clause, its ECM subject is interpreted outside in the matrix clause, and for many or most speakers, this means that the ECM subject must raise overtly. Thus, the preference for the (surface) discontinuous order is predicted. Next, when a particle projects, it merges with the verb and creates a $\bar{V}$-node, thus preventing any further XPs from merging as the verbal complement. If the AP resultative merges with $\bar{V}$, it is unable to receive a resultative interpretation based on the assumption above since it is not the complement of V. This predicts that combinations of a particle and adjectival resultative in the examples earlier should become ungrammatical if we attempt to modify the particle with *right*. Indeed, this generally appears to be the case, with the exception of the unaccusative

[28] http://toyotacarsinfo.com/tips/, November 30, 2012 posting, retrieved 6/28/2013

[29] http://eat2run.com/recipes/veggie-delight-gluten-free-pizza/, retrieved 6/29/2013.

[30] http://www.thehowardbunch.com/2011_12_01_archive.html, retrieved 6/29/2013.

example in (616d), which is attested online. I do not have an account for why some people apparently find it grammatical.

(616) a. * John painted the barn right up red.

b. * John cut the onions right up small.

c. * The boxer knocked his opponent right out cold.

d. ?? The river froze right up solid.

5.5 Conclusion

Thus far in this chapter, I have shown that the present approach provides a mostly straightforward account of complex particle-verb constructions. Except for the prepositional dative and some exceptional cases involving the double-object construction, I showed that complex particle-verb constructions can only be derived from the nonprojecting structure. In cases where a nonprojecting particle-verb construction's complement is a small clause (either an argument of the particle or a resultative secondary predicate), the discontinuous order is always preferred due to a requirement or preference, depending on the speaker, that subjects of small clauses raise into the matrix clause in the overt syntax. In contrast, there is no such requirement or preference when the complement is an IP clause. Finally, I examined two less well-known word-order possibilities in the double object construction. In cases where a particle is allowed to follow both arguments of the constructions, I claimed that the particle is the complement of the HAVE-headed small clause, which itself is the complement of the verb. Combined with the Structural Adjacency requirement, this provided an explanation for why only transparent particles appear to be possible in this order. Lastly, for speakers who allow *right*-modification of a particle between the two objects of a double-object construction, I claimed that the HAVE-headed small clause was able to occur as the complement of the particle.

5.6 Extension: Subextraction

The analysis of complex particle-verb constructions put forth in this chapter puts us in a position to account for another puzzle: the interaction between the position of a particle

and the ability or inability to subextract from the object of a particle verb. Kayne (1985) points out that extraction of the right subpart of the subject of a small clause or the object of a particle verb both yield ungrammaticality, suggesting that the particle-verb object is the subject of a particle-headed small clause. I repeat some of Kayne's examples in (617)-(618). For good measure, I include the examples in (619) to show that extraction of the right subpart of the object nP of a transitive verb does not yield ungrammaticality.

(617) a. The cold weather has gotten John's sister quite depressed.

b. * Who has the cold weather gotten the sister of quite depressed?

(Kayne 1985:103)

(618) a. The cold weather has worn John's sister out.

b. * Who has the cold weather worn the sister of out? (Kayne 1985:103)

(619) a. Tom called the owner of the Chinese restaurant.

b. Which restaurant has Tom called the owner of?

Svenonius (1992:111) adds that the ungrammaticality of subextraction from the object of a particle verb holds in the discontinuous order but not in the continuous order.

(620) a. ?* Who did you tear a picture of ___ up?

b. ?* What have you poured a bottle of ___ out? Svenonius (1992:111)

(621) a. Who did you tear up a picture of ___?

b. What have you poured out a bottle of ___? Svenonius (1992:111)

The degraded nature of the subextraction of the right subpart of an nP also arises when extracting from the POSSESSOR argument of a double-object construction. Given the small-clause structure I adopt for the double-object construction, this is not unexpected if Kayne and Svenonius are correct in claiming that the ungrammaticality of the examples above is due to a restriction on extraction from ECM subjects.

(622) a. ?? Which restaurant did you cook the owner of ___ a steak?

b. ?? Which book did you give the author of ___ a kiss?

Despite the judgments above, which would appear to indicate fairly uniform judgments, Neeleman & Weerman (1999:42, fn 15,18) note that not all speakers find extraction from ECM subjects, POSSESSOR arguments of double-object constructions or objects of particle-verb constructions to be ungrammatical. They cite Kuno (1973) and even Kayne (1984) as reporting the existence of variation as well, and I have likewise found considerable variation.

The present account provides an ideal solution to not only the degraded nature of extraction from pre-particle objects, but also to the speaker variation in judgments. Most of the solution is already found in Lasnik (2001), who adopts the structure of particle verbs which I associate with a non-projecting particle (i.e., the underlying continuous structure). Adopting the view that movement creates islands for extraction (cf. Takahashi 1994), Lasnik (2001:109ff) shows that the ungrammaticality of subextraction from a pre-particle object follows if the object has raised from the complement position of V^{+} into a Case position (Agr_o for him). In contrast, a post-particle object has not undergone movement, so subextraction from it is allowed.

So far, Lasnik's account seems to handle the distinction between subextraction from pre- and post-particle objects rather well; however, the present account has a second underlying structure not assumed in Lasnik (2001). In the underlying discontinuous order, the particle verb's object originates to the left of the particle. But if this is correct, shouldn't we be able to leave the object *in situ* in the overt syntax, thereby making subextraction acceptable? For many speakers, perhaps most, the answer is no. In §5.1, which also relied heavily on arguments from Lasnik, we saw that there was a strong preference for ECM subjects from SCs to raise overtly. Lasnik claimed ECM subjects obligatorily raised, while I claimed that, for some speakers, ECM subjects were allowed to remain *in situ* overtly even though any quantifiers in ECM subjects must take scope outside of the SC. For those speakers who require ECM subjects to raise overtly out of an SC, they become islands for subextraction, aligning with the judgments in the examples above. Now, where the present account fares better than Lasnik's is that we also have a potential account of the speaker variability regarding subextraction. Because some speakers apparently allow ECM subjects to raise covertly,

subextraction should be possible for these speakers. Now, even these speakers often feel that subextraction from a pre-object particle is at least slightly degraded, but this is not unexpected. Speakers who allow the POSSESSOR argument of a double-object construction to remain *in situ* in the HAVE-headed small clause often feel the order is less preferred to the order in which the argument has raised overtly.[31]

There is one final interesting piece of data highlighted in Lasnik which is worth repeating. Subextraction out of an IP complement of a particle verb is bad, regardless whether the object precedes or follows the object.

(623) a. ?* Who did Mary make friends of out to be fools
b. ?* Who did Mary make out friends of to be fools
c. ?* Who did Mary consider friends of to be fools (Lasnik 2001:112)

As the examples show, subextraction from an ECM subject of an IP is ungrammatical even without a particle. The reason for this is that even if the ECM subject of an IP has not overtly raised to object position, it must have raised to the subject position in the IP to satisfy its EPP requirement.

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[31] There may additionally be nonsyntactic factors influencing the acceptability of subextraction, and I suspect prosodic phrasing to be one of those factors. Consider the following. Benjamin Bruening (p.c.) observes that when subextraction occurs in a relative clause, the result seems more acceptable than the variant out of which *wh*-extraction has occurred. Further, replacing a post-object particle with a full PP significantly increases the acceptability of subextraction. Even changing the *wh*-phrase from *who* or *what* to *what kind of* or *which x* appears to affect the acceptability of subextraction.

(i) a. ?? What kind of water did he put a bottle of *t* down?
b. ? the kind of water that he put a bottle of *t* down
c. (?) the kind of water that he put a bottle of *t* on the table

(ii) a. ?? What are they just now cleaning the remnants of *t* off?
b. ?(?) the meal that they're just now cleaning the remnants of *t* off
c. (?) the meal that they're just now cleaning the remnants of *t* off the tables

There is likely to be some speaker variation as to the degree of acceptability of each example, as certainly more judgments need to be collected, but what is important here is that the (c) examples seem to be preferred to the (a) and (b) examples, and the (b) examples seem slightly better than the (a) examples. One possible explanation for some of the data is found in Trinh (2009, 2010), who argues that extraction must take place at the right edge of a prosodic phrase. The increased acceptability of the (c) examples may be because subextraction has taken place at the right edge of a prosodic phrase, whereas in (a)-(b) the particle plausibly occupies the right edge of the same prosodic phrase in which the extracted material originated. I leave a fuller explanation of variation like that above for future research.

Chapter 6

MORPHOSYNTAX

The ability of particle verbs to undergo various word-formation processes has often been presented as evidence in favor of complex-head approaches to the particle-verb construction, while it is largely ignored by many analyses lacking a complex-head structure. It seems that a common, tacit assumption is that once particle verbs are treated as words, word-formation processes involving particles should be easily explainable and require little examination. If this were true, there would be little need for the present chapter given the analysis laid out above, which proposes a complex-head structure as one of two structures available to particle verbs. The present chapter, however, will make it clear that such an assumption is mistaken, highlighting the need to examine the interaction between particle verbs and word-formation processes in greater detail.

This chapter has several main objectives. First, (many) word-formation processes were traditionally assumed to take place in a presyntactic morphological component, and this assumption has played and continues to play a role in numerous complex-head analyses of particle-verb constructions which additionally assume that particle verbs are formed in a presyntactic morphological module. In contrast, a number of recent approaches to morphology either do not distinguish it from the syntax or do not assume a strict ordering between syntactic and morphological modules (e.g. Distributed Morphology (Halle & Marantz 1993), Jackendoff's 'tripartite architecture' Jackendoff 1997a, 2002b, or Parallel Morphology (Borer 1991)). I assume that particle verbs are syntactic constructs, and I wish to therefore demonstrate how word-formation processes can be handled without assuming particle verbs are presyntactic, morphological constructs or that word-formation processes occur in such a module. In part, this will be accomplished by adopting a distinction between 'categorized' and 'uncategorized' Roots in the syntax (cf. Halle & Marantz 1993).

A second reason I wish to examine word-formation processes is due to my adoption of the Conflation approach to head movement. Although it solves the syntactic 'excorporation problem' associated with many complex-head analyses, it restricts the possible analyses of the morphosyntactic behavior of particle verbs. The analysis presented below therefore attempts to show how we might account for this behavior within a Conflation approach to head movement.

Third, it would seem that particle verbs undergo various word-formation processes much more easily in the OV Germanic languages than in the VO Germanic languages, but I am unaware of any prior arguments for why this should be so. I propose that the reason for this lies in the position of the particle in relation to the verb and suffixes, where it is only in the VO languages that the position of a particle may occasionally 'get in the way' of suffixation.

Finally, as already noted in the first paragraph, it is not the case that the adoption of a complex-head structure renders word-formation with particle verbs unproblematic. In examining a number of different processes in English and other languages, I hope to make it clear that a variety of distinct structures and constraints are involved in the various processes, and thus each process demands individual examination.

This chapter proceeds as follows. In §6.1, I consider word formation involving particle verbs and various types of prefixes, including verbs containing P(repositional)-prefixes (or 'inseparable' prefixes), instances where a particle has prefixed onto a verb, and non-P-prefixes such as *de-* and *re-*. I suggest that these prefixes are divided into two syntactic types, with one merging with an uncategorized Root and the other merging with a categorized Root. §6.2 then extends the analysis to a number of word-formation processes involving suffixes or zero derivation and particle verbs. It is argued that particle verbs do not appear in some derived words, such as derived nominals, because the relevant process operates over uncategorized Roots whereas both the verb and particle are categorized prior to forming a particle verb. It is also argued that a distinction between derivational affixes which select phrases versus those which select heads is necessary to explain why some (e.g. *-ing*) but not other (e.g. *-er*) suffixes may appear on the verb without issue, and this distinction underlies the

explanation of the 'suffix-dilemma'. Finally, I suggest that in the case of pre-nominal adjectival passives, the explanation must be augmented with a phonological alignment constraint along the lines of that adopted in the earlier discussion of quotative inversion (§4.4.3.1) in order to account for the data.

6.1 P-prefixes, Particle-prefixes, and Particle+Prefix Co-occurrence

Discussion of the particle is often juxtaposed with discussion of verbal prefixes, many of which are homophonous with particles or at least derived from the general class of prepositions, as the most common particles are. This is especially true in discussions of particles in OV Germanic languages, where particles generally appear to be a prefix on the verb in non-V2 contexts. Several authors, especially those working with OV Germanic languages, place prefixes and particles (here, 'P-words') on different structural levels. For example, the particle itself might be claimed to project more structure than a prefix (e.g. Stiebels & Wunderlich 1994; Zeller 2001), or the prefix might attach to the verb at a lower level of the syntax or morphology, where it is inaccessible to syntactic operations (e.g. Booij 1990; Ishikawa 1999). Los et al. (2012) provide a grammaticalization cline distinguishing particles (corresponding to their 'optionally projecting', 'nonprojecting' and 'quasi-incorporated' words) from the more highly grammaticalized stage of a prefix. In contrast, Keyser & Roeper (1992), discussing only English, do not distinguish between prefixes and particles. They argue that the prefix *re-* and particles originate in the same syntactic position and are in complementary distribution, and they suggest that the pattern for *re-* "should hold of other prefixes" (p. 115). While it would be inappropriate to assume they would make the same claim for prefixes and particles in OV Germanic languages, one could certainly imagine this is meant to hold of 'prepositional' prefixes in English such as *out-* in *outrun*.

In this section, I provide a brief examination of prefixes and compare them with particles. I limit the discussion largely to the class of prefixes which are homophonous with prepositions (I call these 'P-prefixes'), though I also include some discussion of other prefixes ('non-P-prefixes'), mainly *re-*. I conclude that we likely need to distinguish particles

from two classes of prefixes. Structurally, the two types of prefixes examined in this section can be described in the following way, where a categorized word is a (possibly complex) Root that has merged with a categorizing head as in Distributed Morphology (Halle & Marantz 1993).

(624) a. Prefixes that are non-projecting heads which merge with categorized verbs and undergo Conflation with the verb

(≈a type of incorporation in many theories)

b. Prefixes that attach to verbal roots prior to categorization

(≈pre-syntactic/morphological attachment in many theories)

Although I attempt to justify the existence of two different types of prefixes, I am unable to provide a detailed enough examination of prefixes here to identify in all cases which type of prefix, (624a) or (624b), a given prefix is. My justification for the distinction between the two types of prefixes is based solely on English data.

The structure of this section is as follows. I first begin with a brief description of P-prefixes in Germanic languages, starting with the distinction between separable and inseparable prefixes in German, which I use as representative of OV Germanic languages, and continuing with a brief discussion of P-prefixes in English and Scandinavian languages. §6.1.4 examines the distribution of various prefixes with particles and attempts to justify the need to distinguish two types of prefixes.[1]

6.1.1 P-prefixes in German

There is a well-known contrast in OV West Germanic languages between particles, often called 'separable prefixes', and inseparable prefixes. Particles do not raise with the verb to V2, and they are separated from the verb by tense/aspect morphology. In contrast, inseparable prefixes raise with the verb in V2, and infinitival markers (*zu* in German) must

[1] For a more detailed description of P-prefixes, including information about their historical development, see Los et al. (2012:§7).

precede the prefix. In German, the participle prefix *ge-* does not occur with inseparable prefixes at all, while it does occur with particles.[2]

(625) Particle (= Separable Prefix)

a. Der Mann {*aus}-trinkt das Bier {aus}
the man PRT-drinks the beer PRT
'The man drinks up the beer.' (V2)

b. Der Mann hat das Bier {*ge}-aus-{ge}-trunken
the man has the beer GE-PRT-GE-DRUNK
'The man drank up the beer.' (participle *ge-*)

c. Der Mann hat versucht, das Bier {*zu} aus-{zu}-trinken
the man has tried the beer INF PRT-INF-drink
'The man tried to drink the beer.' (infinitival *zu*)

(626) Inseparable Prefix

a. Der Mann {ver}-jagt den Räuber {*ver}
the man PREFIX-chases the robber PREFIX
'The man chases away the robber.' (V2)

b. Der Mann hat den Räuber {*ge}-ver-{*ge-}jagt
the man has the robber GE-PREFIX-GE-chased
'The man chased away the robber.' (participle *ge-*)

c. Der Mann hat versucht, den Räuber {zu} ver-{*zu}-jagen
the man has tried the robber to PREFIX-to-chase
'The man tried to chase away the robber.' (infinitival *zu*)

In addition to distributional difference, there is a prosodic difference between particles and inseparable prefixes. Particles bear word stress, and when they appear as a prefix

[2] The phonological forms of particles and inseparable prefixes are often distinct, but not always. When a particle and inseparable prefix are homophonous, they have distinct meanings and are best treated as distinct (if related) lexical items.

on a verb, they exhibit primary stress. In contrast, inseparable prefixes are unstressed when monosyllabic, and do not take primary stress when polysyllabic.

(627) Separable prefix

a. áus-trìnken 'to drink up'

b. án-drèhen 'to turn on'

(628) Inseparable prefix

a. ver-súchen 'to try'

b. zer-bréchen 'to shatter'

If we only examine the distinctions above, either of the prefix types listed in (624) could describe the inseparable prefixes, allowing us to distinguish them from particles. The first possibility, that in (624a), involves differentiating particles from inseparable prefixes on the setting of the feature [±affix] on either the verb stem or P-element. Recall that in the present account, the p-signature of the lower verbal head of the particle-verb construction [$_{V^+}$ V Prt] is passed up the tree without the p-signature of the particle because neither of them had a 'defective' p-signature; in other words, neither of them had the feature [+affix]. In contrast, if the p-signature of either the lower verbal head or the P-element is defective, the p-signature of the P-element should be copied into the p-signature of the verb, which would then 'move' up the tree as an indivisible unit.[3] The following exemplifies how Conflation would combine the p-signatures of a verb and inseparable prefix, under the assumption that

[3] If we adopt the Conflation mechanism as described in Hale & Keyser (2002) and Harley (2004), it would have to be specifically the p-signature of the verbal portion which was defective for Conflation to occur with the P-element.

(629) *Conflation*

Conflation consists in the process of copying the p-signature of the complement into the p-signature of the head, where the latter is "defective." (emphasis added–DL) (Hale & Keyser 2002:63)

I do not foresee any problems arising if we change 'the latter' to 'either'. The only time the p-signature of the head's complement could be defective would be if it were the lowest head in the phrase, unless Conflation sometimes yields a still-defective p-signature. In the case of inseparable prefix verbs, it intuitively feels as if the P-prefix would bear the feature [+affix] (after all, it is not the Root and it is unstressed), but it is also possible that the verb is inserted with the feature [+affix]. Harley (2004), for example, assumes that the verbal stem in synthetic compounds like *script-write-r* is inserted with the feature [+affix].

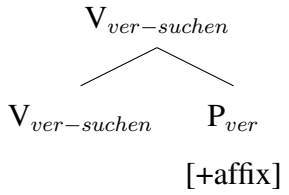
the P-element bears the feature [+affix]. I represent the p-signature of V and P in italics, using the standard orthography for individual the parts but with a hyphen between them.

(630) a. Merge V_{suchen} and P_{ver}, which bears the feature [+affix]

b. Conflate p-signature of P_{ver} into V_{suchen}

c. Project the label (including the combined p-signature)

d.



A second possibility is that the verb and prefix are merged as uncategorized Roots (=(624b)). Whether or not uncategorized elements are inherently [+affix], thereby requiring Conflation, is a question I leave open. What is important, however, is that Conflation include enough information in the p-signature to indicate that the prefix cannot receive primary stress.

(631) a. Merge $\sqrt{}$suchen and $\sqrt{}$ver

b. Conflate p-signature of $\sqrt{}$suchen and $\sqrt{}$ver

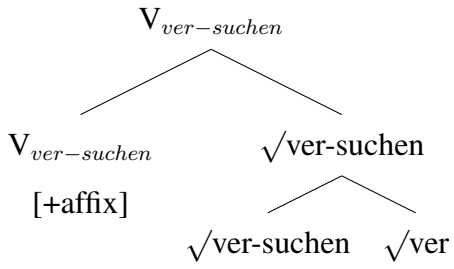
c. Project the label

d. Merge $\sqrt{}$ver-suchen with a categorizing V bearing the feature [+affix]

e. Conflate p-signature of $\sqrt{}$ver-suchen and categorizing V

f. Project the label

g.



Both of the structures above differ from particles in that the p-signature of the prefix becomes part of the p-signature of the verb, whereas particles do not Conflate with the verb.

Although I will not provide arguments in favor of one structure or the other for inseparable prefixes in German, it should be possible to do so using a line of argumentation similar to that in §6.1.4, where co-occurrence possibilities with categorized or non-categorized (non-P-)prefixes is used to determine whether P-prefixes are categorized or not. The traditional view of inseparable prefixes in German is that they are formed in the morphology, corresponding more closely to the structure in (631) than that in (630).

6.1.2 P-prefixes in English

Like the OV Germanic languages, English also contains some 'inseparable prefixes' alongside the particles. These P-prefixes are frequently homophonous with particles, but it is neither the case that all particles are homophonous with P-prefixes, nor that all P-prefixes are homophonous with particles. For example, only monomorphemic particles are found with corresponding verbal prefixes; polymorphemic particles, such as the so-called a-adjectives (e.g. *away*, *aboard*, *ashore*, *amidship*), do not have corresponding prefixes. P-prefixes without corresponding particles include *under* and *with* (the latter only with its archaic meaning of 'against; opposite'). With the exception of the P-prefixes *out*, *over* and *under* (exemplified below), P-prefixes are not productive in English, and even these three are productive only when used with certain meanings.

(632) a. out$_{surpass}$: outwork, outdo, outrun, outshine, outnumber

b. over$_{excessive}$: overwork, overdo, overpay, overcharge, overeat

c. under$_{insufficient}$: understate, underwhelm, undersell

As with the inseparable prefixes in OV Germanic languages, P-prefixes in English do not separate from the verb, and the stress pattern indicates that the prefix is part of the prosodic word including the verb (primary stress occurring on the verbal portion).

I noted that above the when homophonous P-elements occur in German separable and inseparable uses, they have distinct meanings in each case. The same is true of the productive P-prefixes, but there are some non-productive P-prefix which appear to be have a similar meaning to their corresponding particles. Even in these cases, however, the meaning

of the P-prefixed verb is not identical to its corresponding particle verb, even if there is some overlap. For example, none of the following pairs are completely synonymous.

(633) bypass ≠ pass by
backfire on ≠ fire back on
offset ≠ set off
uphold ≠ hold up
overtake ≠ take over

The same holds true of the relation between particle verbs and corresponding P-prefixed nouns and adjectives. In the examples below, the nouns have a more specific meaning than the corresponding particle verbs. For example, both *uprising* and *rise up* may refer to a type of revolt, but an alternative motion sense is found only in the verbal form (compare *The sun rises up in the morning* with **The sun had/underwent an uprising this morning*).

(634) downfall ≠ fall down
upkeep ≠ keep up
upbringing ≠ bring up
uprising ≠ rise up

With the exceptions in (632), P-prefixes are not productively attached to verbs, adjectives or nouns in English, and combinations they occur in must be lexically stored. Structurally, I argue below in §6.1.4 that P-prefixes in English merge with an uncategorized root, as in option (624b)/(631).

6.1.3 P-prefixes and Particle-prefixes in Scandinavian Languages

Viewed as a whole, Scandinavian languages appear to have at least two types of prefixation processes for P-prefixes. One type appears to be similar to the P-prefixes in English, where certain particle verbs appear to alternate with P-prefixed verbs in a non-productive fashion. This has been noted to occur in Danish by Herslund (1984, 1993), who does not consider the process productive and notes that it is only possible with one class of particle verbs.

(635) a. Han {op}-gav sine studier {op}.
he up.gave his studies up
'He gave up his studies' (Svenonius 1994:Ch. 3(33), adapted)

P-prefixed verbs in Danish appear to represent the next step of grammaticalization beyond 'nonprojection' associated with particles, as indicated by the increased abstraction in their meaning. Herslund notes (p. 44) "...the V+PP structure retains the (often) concrete meaning associated with its constituents, whereas the prefixed verb often takes on a more derived (fused) meaning which is not always predictable from the constituent parts of the prefixed verb." At the same time, Herslund (1993:59ff) indicates that there is some fluctuation in usage; thus, while the P-prefixed verb *opstille ng* 'nominate s.o.' generally contrasts with the particle verb variant *stille ng op* 'place s.o. upright', the particle verb order can be found with the meaning 'nominate'. This does not seem too terribly different from English, which I pointed out above also has a limited number of P-prefixed verbs which are distinct from any corresponding particle verb. I assume that the P-prefixed active forms of verbs in Danish are combined in the same manner as the P-prefixed verbs in English (option (624b)/(631)).

A second type of prefixation in Scandinavian, which does not occur in English, is the productive prefixation of particles (I will call these prefixes particle-prefixes, in contrast with P-prefixes). The process appears to be productive in the formation of the passive participle in some Scandinavian languages or dialects thereof, as seen in the following verbal and adjectival passives, but there appears to be a fair amount of cross-linguistic variation. Note that Danish appears to exhibit opposite requirements *vis à vis* prefixation of the particle in the verbal passive and the adjectival passive, but this might reflect speaker or dialectal variation.

(636) Verbal Passive

a. Norwegian[4]

Hunden vart {ut}-sparka {ut} (av Jon)
dog.the was out-kicked out by Jon
'The dog was kicked out by Jon.' (Åfarli 1985:89, adapted)

b. Swedish

Böckerna är/blev {ut}-lånade {*ut}
books.the are/got out-lent out
'The books are/got lent out.' (Toivonen 2003:38, adapted)

c. Danish

Hunden blev {*ud}-smedet {ud}.
dog.the was thrown out
'The dog was thrown out' (Svenonius 1996b:20, adapted)

(637) Adjectival Passive

a. Danish

det {ut}-sendte brev {*ut}
the out-sent letter out
'the letter (which was) sent out'

(lit. 'the sent-out letter') (Herslund 1993:61, adapted)

b. Swedish

några {ut}-lånade böcker {*ut}
some out-lent books out
'some lent out books' (Toivonen 2003:38, adapted)

Swedish appears to require particles to prefix onto a verb in some nominalizations as well, including the equivalent of *-ing*$_{of}$ nominals and agentive *-er* nominals (see §6.2 for discussion of the English counterparts of these constructions).

(638) a. {Ut}-låningen {*ut} av böcker har ökat.
out-lending out of books.the has increased
'The lending of books has increased.'

b. ... de ska träffa alla {ut}-lånare {*ut} på kreditmarknaden.
they will meet all out-lenders out on credit.market.the
'... they will meet all the lenders on the credit market.' (PAR)

(Toivonen 2003:38, modified)

This second type of prefixation strongly argues against a general treatment of particles as overtly incorporating heads. Specifically, if particles always incorporated, we would expect them to appear in pre-verbal position as they do in the constructions above, but this is not the case (both Svenonius 1994 and den Dikken 1995:88ff cite this as an argument against (overt) incorporation). I assume that this latter, productive type of prefixation takes place via the option in (624a)/(630), with the particle merging and Conflating with a categorized verb.

As noted above, there appears to be a fair amount of variation in whether particles must, may or may not prefix onto verbs in the passive constructions above. According to Svenonius (1996b:20), who discusses only the verbal passives in the VO Germanic languages, "[t]here appears to be no correlation between incorporation and the surface location of the particle in active sentences". In the present analysis, this means we cannot account for the variation in whether or not a particle prefixes onto the verb by relating it to whether or not a particle projects; instead, I assume there is cross-linguistic variation in whether verbs in passive constructions bear the feature [+affix].

6.1.4 The Restriction against Co-occurrence of Particles and Prefixes, and the Structure of English Prefixes

In this section, I argue that P-prefixes in English, and presumably the comparable type of P-prefixes in Danish noted above, involve the merger of a P-prefix with an uncategorized root, as described in (624b)/(631). In contrast, I argue that the prefix *re-* merges and Conflates with an already categorized verb, as described in (624a)/(630). I show that the different types

of prefixation interact with particle verbs in different ways.

It is sometimes claimed that particles do not co-occur with prefixed verbs (e.g. Fraser 1976:15; Keyser & Roeper 1992), and as a general rule, it seems true that most such combinations are ungrammatical. The following examples show ungrammatical combinations which include both a particle and a P-prefix, both of which can independently occur with the same base verb.

(639) a. *overeat up (cf. overeat, eat up), *overdrink up (cf. overdrink, drink up)

b. *outclean up s.b. sthg. (cf. clean sthg up, outclean s.b.)

Other types of prefixes also typically fail to co-occur with particles. Some common non-P-prefixes are provided in the examples below. I will discuss an additional non-P-prefix, *re-*, below, though the conclusions I make about *re-* do not necessarily carry over to the prefixes in (640).

(640) Prefixed verbs with non-P-prefixes

a. *de-*: deface, delist; *deface off (cf. face off), *delist off (cf. list off)

b. *en-*: enlist, enlighten; *enlist off (cf. list off), *enlighten up (cf. lighten up)

c. *un-*: unload, unfill; *unload up (cf. load up), *unfill up (cf. fill up)

Accounting for this apparent restriction has come in several forms. Fraser (1976:29ff) claims that the prefixes *out*, *over* and *re* do not occur with particle verbs for phonological reasons. Specifically, he claims that particles only combine with mono- or bi-syllabic verb with initial stress, whereas prefixed verbs are at least bisyllabic and lack initial stress. Stiebels & Wunderlich (1994:926f, 933f) theorize that particles and prefixes should occur together, but suggest that such combinations 'are not very productive' because of prosodic or semantic reasons. Keyser & Roeper (1992) argue that *re-* and particles occupy the same syntactic position, and for this reason they are in complementary distribution (I show below this is not entirely true). Finally, Neeleman & Weerman (1993b) propose a 'Complexity Constraint' to prevent complex heads from containing more than two lexical heads, thereby prevent particle verbs (complex heads) from merging with a prefix or another particle.

Unfortunately, the data is slightly messier than most of the authors above assume (Stiebels & Wunderlich 1994 being the exception). The intransitive use of the particle *away* readily occurs with prefixed verbs, and other particles can, in rare cases, be found to do so as well. Furthermore, there is at least one prefix which can at least marginally occur with particle verbs. I examine these cases in turn below.

The first exception to the apparent restriction against combined prefixes and particles is the productive use of *away* when it means 'to your heart's content' (=$away_{continue}$ in §3.2.2.3.5). This use of *away* can occur with both P- and non-P-prefixes quite freely, and it is especially felicitous in frames like *Go ahead. V away if it makes you happy.*

(641) a. moose1010: $6 million for Mason would be overpaying.

GOTA: Who cares? There is no cap and it's not our money. Overpay away.[5]

b. on Twitter: @rodneyrotherman Oh don't you worry nothing but low standards here, underwhelm away

(Oh, don't you worry. (There is) nothing but low standards here. Underwhelm away.)[6]

c. "Deface away, my friend. Deface away."[7]

d. You need to go in with the expectation that you will NEVER be selected for [Officer Candidate School]. If you are okay with that then enlist away.[8]

We can even find *away* and *out* with P-prefixed verbs in transitive constructions, where they mean something like 'away from a source'. To my ear, *downsize away* is better than *downsize off* in the examples below, but both sentences seem acceptable.

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[5] http://talk.baltimoresun.com/showthread.php?p=5937712, retrieved 7 November 2012

[6] http://ja.twitter.com/JerryArensbach/status/164187544114835456, retrieved 7 November 2012

[7] Wambach, Tim (2010) *How We Roll: 2 Men, 1 Wheelchair and a Lifetime of Lessons in Perseverance*, Charleston, SC: Advantage. p. 78.

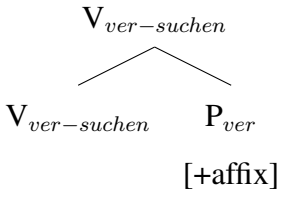
[8] http://forums.military.com/eve/forums/a/tpc/f/790108875/m/1360016103001, retrieved 22 July 2013

(642) a. The current trend to downsize away all technical and scientific personnel means that no real citizen involvement can take place...[9]

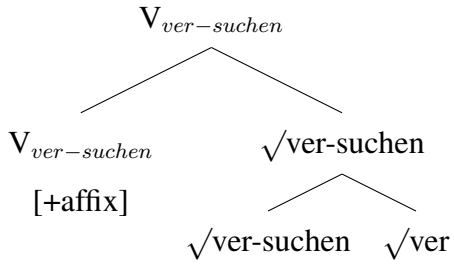
b. Today's companies want people to spend less and less time in training, and they want to "downsize" out the most experienced workers (i.e. the most expensive ones).[10]

Let us consider how we might capture this in the current syntactic analysis. First, note that neither of the possible structures for prefixes found in (630) or (631), repeated below as (643a) and (643b), should prevent particles and prefixes from co-occurring without any additional stipulations.

(643) a.



b.



If prefixes have the structure in (643b), where they are merged with uncategorized verbs, there is no obvious reason they should not be able to subsequently merge with a categorized particle. If prefixes have the structure in (643a), both prefixes and particles would be syntactic heads, differing only in the features [±affix]. While one might think they should be in complementary distribution, the present analysis has no syntactic restriction against merging a complex head together with another syntactic head; rather, I explicitly argued that this is possible in §4.6.2.3.

While both analyses allow for the existence of verbs with both a particle and a prefix, there is a reason to prefer treating P-prefixed verbs as being formed prior to categorization (option (643b)) rather than after categorization (option (643a)). The structure in

[9] http://www.cape.ca/resources/documents/ocapi.html, retrieved 1/10/2013.

[10] http://www.bottomlineperformance.com/10000-hours-to-mastery-the-gladwell-effect-on-learning-design/, retrieved 8/11/2013.

(643a) does not force a particle or prefix to merge in any particular order. Thus, theoretically both [[downsize] away] and [down[size away]] should be syntactically possible. In contrast, (643b) will require a prefix to merge before a particle, allowing only the structure [[downsize] away]. In all of the examples in (641)-(642), the only possible reading is one where the combination of the prefix and verb are combined first. This is somewhat surprising, because from a semantic perspective, it seems like we should be able to construct complexes by adding a prefix to an already formed particle verb. As the following examples indicate, such combinations are ungrammatical, suggesting they are syntactically ill-formed.

(644) a. * John [over[turned up]] the volume.

Intended meaning: John turned up the volume too much.

b. * John [under[hyped up]] the event.

Intended meaning: John insufficiently hyped up the event.

Given the ungrammaticality of combinations such as those in (644), it appears that P-prefixes must combine with a verb before a particle. For this reason, I assume that P-prefixes merge with uncategorized verb roots, as in the structure in (643b). I have claimed particles merge with categorized verbs, so they will necessarily merge after P-prefixes.[11]

Consider now the prefix *re-*. According to Keyser & Roeper (1992), particles and *re-* are in complementary distribution, leading them to posit that they originate in the same syntactic position. In fact, *re-* and particle verbs are not mutually exclusive; *re-* appears able to prefix onto many particle verbs without much difficulty, as in (645) (see Farrell 2005:102 for additional examples). While the examples below do not sound perfect, they are nonetheless quite acceptable.

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[11] See also Stiebels & Wunderlich (1994), esp. pp. 933ff. They also predict that [particle [prefix V]] combinations should be possible in German, and they are to a limited extent. In contrast, they claim that [prefix [particle [verb]]] combinations are possible only if the prefix and particle are reanalyzed as a new particle or prefix. An example of this is *über-an-strengen* 'overstrain', where *überan* is reanalyzed as a prefix, demonstrated by the fact that it follows the infinitival marker in *zu über-an-strengen*.

(645) a. So i went ahead and sanded, cleaned and repainted up the DSM amps and WOW what a difference...[12]

b. I know it's been much discussed here but someone needed to restir up the hate... right!!![13]

c. Other people like the idea of being able to have any name they want so they dont have to rethink up a new character because someone has the name you wanted.[14]

d. When he relocked up the dogs, Eddy the Elf dog reminded Cruge about why he hated Christmas and to let Christmas Spirit come into his heart.[15]

e. If you're not completely satisfied with you service, All Computers Go! will go back and rework out any system bugs.[16]

f. If your package is returned due to an incorrect address it will be your responsibility to provide us with the additional funds for postage to resend the package out.[17]

Although it is not entirely certain in every case, *re-* appears to modify the entire particle+verb combination, indicating that *re-* has merged after the particle.[18] This means that *re-* does not combine with uncategorized roots (option (643b)), but rather with categorized heads (option (643a)). If this is the case, there is no syntactic reason a particle could not merge

[12] http://www.diymobileaudio.com/forum/old-school-car-audio-discussion/36261-old-school-showoff-thread-247.html, retrieved 5/27/2013.

[13] http://texags.com/main/forum.reply.asp?topic_id=1747465&forum_id=5, retrieved 5/27/2013.

[14] http://www.covenantofthephoenix.com/forums/topic/10098-non-unique-names/, retrieved 8/11/2013.

[15] http://villains.wikia.com/wiki/Stan_Cruge, retrieved 8/11/2013.

[16] http://allcomputersgo.com/, retrieved 8/11/2013.

[17] http://www.krinklepuffs.com/shipping, retrieved 11/16/2013.

[18] In the case of *repaint up*, either bracketing [re[paint up]] or [[repaint] up] seems plausible from a semantic perspective. In contrast, in the case of *rework out any system bugs*, only the bracketing [re[work out]] seems available. This is because one can *work out a system bug* but one cannot **work a system bug*.

after *re-*, and it seems to be possible as well: *Repaint away!* We also see in the following examples that *re-* can attach to prefixed verbs, as predicted.

(646) a. I understand that the computer may have chosen to overbook the flight less and not release the seat, but I would think that a supervisor would have had the abilty or authority to **re-overbook** the flight if that happened – I guess not![19]

b. I almost think we need to **re-'overemphasize'** the SAT (or similar competitive aptitude testing), at least among the top quintile or so...[20]

Finally, *re-* is unlike a particle in that it remains attached to the verb as the verb moves up the tree. This is entirely expected in the Conflation analysis (*re-* has the feature [+affix]), but I demonstrate the derivation nonetheless.

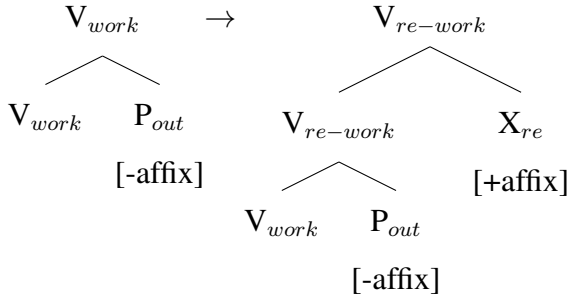
(647) a. Merge V_{work} and P_{out}, neither of which has the feature [+affix] (no Conflation)

b. Project the label

c. Merge $V^{+}{}_{work}$ and X_{re}, where *re* has the feature [+affix]

d. Conflate p-signature of X_{re} into V_{work}

e. Project the label (including the combined p-signature)

f. 

[19] http://www.flyertalk.com/forum/frontier-airlines-earlyreturns/1196904-not-100-happy-call-center-capabilities.html, retrieved on 12/18/2012.

[20] http://archive.slickdeals.net/f/452367-Free-Students-Against-Testing-Bumper-Stickers?page=2, retrieved on 12/18/2012.

Above, I have argued that prefixes and particles can co-occur and shown how this is possible in the present account. How, then, can we rule out the vast majority of possible combinations that do not occur? Unfortunately, I can only put forth a few suggestions as to which factors might be at play. First, as argued above, some semantically plausible combinations of particles with P-prefixed verbs are ruled out syntactically, because the prefix must merge before the particle. Second, I believe that Fraser's (1976:29ff) claim that the combinations are ruled out on phonological ground warrants examination, though I am unable to do so here. The fact that *away* much more easily occurs with P-prefixed verbs than other particles may be related to its iambic stress pattern, which prevents it from 'clashing' with the often syllable-final primary stress of a prefixed verb; or it might just be because *away* is more generally compatible with action verbs than other particles. Some of the incompatibility may be due to differences in selectional requirements. For example, consider the ungrammaticality of **overeat up* in contrast to the grammaticality of *overeat* and *eat up*. In this case, *overeat* must be intransitive, while *eat up* must typically be transitive, leading to a mismatch when combining both prefix and particle.[21] Likewise, *outrun John* and *run away* are both grammatical, while *outrun away John* is not. *Away* in the sense used here is predicated of the lowest nP (the subject in *run away*) while *outrun* is transitive. If Bill is to *outrun away John*, he must outrun John in such a way that John has gone away (rather than Bill going away, since *away* takes the lowest nP as an argument). The result is semantically infelicitous. Finally, we might expect *John overbuilt up his empire* to be grammatical, since *overbuilt his empire* and *built up his empire* are both acceptable. Semantically, however, if *up* takes *overbuild* as an argument, we derive a meaning like 'overbuilt an empire towards completion', which is nonsensical, as $over_{excessive}$ here denotes surpassing the normally-accepted point of completion. Recall that the more semantically plausible bracketing [over [build up]] 'build up excessively' is not allowed in the syntax.

[21] While 'eat up' can occur without an overt object in commands and propositives, such as *It's time to eat up!*, it cannot occur without an overt object in statements: *John ate up *(the leftovers)*. In truly intransitive particle-verb constructions, an object is never required. I, therefore, assume that the particle verb *eat up* is transitive and allows a covert object in certain structures.

6.2 Word-Formation Processes with Particle-verb Constructions

In the following subsections, I provide examples of various word-formation processes in English and the OV languages of Dutch and German. Given that there is no *a priori* reason to believe the various word-formation processes are derived in the same manner, even if they can be grouped together into general categories such as 'suffixation', it is beyond the scope of this dissertation to provide a detailed analysis of each word-formation process into which particle verbs may enter. Nonetheless, I investigate a few processes in English in varying amounts of detail and suggest analyses which are compatible with the present account.[22]

6.2.1 Overview of Word-Formation with Particle-verb Constructions

I have noted above that word-formation processes in which particle verbs are found have been used as support for claims that particle verbs are morphologically complex syntactic heads. It is especially in the OV Germanic languages that many such examples are found. In the lists below, we see that particle verbs can take a number of suffixes, form compound nominals, and take a number of prefixes. The examples below show words derived from particle verbs in Dutch (648) and German (649). Affixes are marked with bold font.

(648) a. aan-bied-**er** 'offerer'

b. aan-bied-**ing** 'offer; offering'

c. aan-toon-**baar** 'demonstrable'

d. aan-trekk-**elijk** 'attractive'

e. aan-kom-**st** 'arrival'

f. op-berg-**doos** 'stoor box'

g. door-kijk-**bloes** 'see-through blouse'

h. op-**ge**-bel '(repeated) phoning'

(data from Booij 1990:50, 2010:138)

[22] For another recent account of some of the following data, see McIntyre (2013).

(649) a. An-sag-**er** ‘announcer’

b. Aus-wirk-**ung** ‘consequence, effect’

c. auf-find-**bar** ‘discoverable’

d. nach-denk-**lich** ‘thoughtful, pensive’

e. Ab-nahm-**e** ‘removal’ (> ab-nehm-en ‘to remove’)

f. An-häng-**sel** ‘appendage’ (> an-häng-en ‘to hang on, to append’)

g. An-kömm-**ling** ‘newcomer’

h. nach-gieb-**ig** ‘yielding, compliant’

i. Herum-**ge**-renn-**e** ‘the running around’

j. **un**-an-**ge**-meld-**et** ‘unannounced’ (ge-...-et = past participle)

k. **Ur**-vor-stell-**ung** ‘first conception’

(data from Lüdeling 2001:96ff, Stiebels & Wunderlich 1994:924)

In contrast, data from English is less supportive of the claim that verbs and particles form a single unit, as word-formation with particle verbs is much more restricted in this language. Below are a few comparable word-formation processes applied to some fairly common particle verbs.

(650) a. *putter-down / *put-downer / *?putter-downer

b. the marrying off *(of nP) / *the marry-offing / *the marrying-offing

c. *sellable-off / *?sell-offable / *sellable-offable

d. a drop-off / several drop-offs

e. un-cleaned-off (e.g. an un-cleaned-off table)

This data, in conjunction with the data from the OV languages above, raises at least two issues. First, why do word-formation processes occur more easily with particle verbs in the OV languages Dutch and German than those in the VO language English? Second, are suffixes attached before or after the formation of the particle verb?

Regarding the first question, I believe that the most important distinction between German and Dutch on the one hand and English on the other is that while the former languages may form words from particle verbs through the use of suffixation, English may not. It appears that the particle somehow 'gets in the way' of the attachment of the suffix.[23] Supporting this hypothesis, Swedish, a VO Germanic language, appears to evade this problem in certain instances by prefixing the particle to the verb, as in *ut-lån-are* 'out-lend-ers' (from Toivonen 2003:38 and noted in §6.2.3; cf. **lånare ut*). The distinction between the OV languages and English might be taken to indicate that word-formation is syntactic in English but morphological in German and Dutch, but this is an unattractive solution. Especially unappealing is that this would mean that even cognate suffixes like *-er* are applied in different modules in different languages, as attested by their differing grammaticality. This is avoided if we make the assumption that morphology is, or at least can be, added in the syntax. In this case, however, our syntax must provide an account for the suffix-dilemma. Note that in contrast to the suffixes, the cognate prefix *un-* does not have any difficulty attaching to particles in any of the languages. While it is certainly not the case that all prefixes freely occur with particle verbs (e.g. see §6.1), there does not appear to be a general prohibition against the adjacent placement of prefixes and particles.

The suffix dilemma above brings up the question of whether particles block affixation of the affixes in question, or whether the affixation of the affixes precludes the addition of a particle. At least in theory, both possibilities exist, and I assume that both options occur as well. I argued earlier that certain prefixes in English attach to a(n uncategorized) 'verbal' head, preventing the addition of a particle for semantic reasons, and some suffixes appear to similarly attach to uncategorized heads before a particle can merge in (e.g. the suffix in derived nominals, discussed in §6.2.2). In the case of other suffixes, however, I argue that the particle verb is formed before suffixes are merged into the structure.

With regard to the second question above, it appears that particle verbs are always formed prior to suffixation when the result is grammatical (the alternative proposal is found

[23] The plural marker *-s* is an exception, as it can attach to compound nouns formed from particle verbs. It can attached to compounds formed from any other word categories as well. See §6.2.5.

in Stiebels & Wunderlich 1994). Neeleman & Weerman (1993a:439f) and Zeller (2001:240ff) provide data from Dutch and German, respectively, demonstrating that particle verbs must be formed prior to the addition of at least some suffixes. In their examples below, we see that in some instances where the simplex verb cannot participate in a particular word-formation process, a particle verb containing the same verb may undergo said process. If the particle were added only after the verb received a suffix, we must accept that the grammar builds intermediate, ungrammatical forms. While this is not entirely implausible, a grammar which disallows this is generally preferable. The examples in (651) are from Dutch, and those in (652) from German.

(651) a. merk-en / *merk-zaam 'notice-able'

op-merk-en / op-merk-zaam 'up-notice-able' (='attentive')

b. lat-en / *laat-baar 'let-able'

toe-lat-en / toe-laat-bar 'to-let-able' ('permissible')

c. gev-en / *geef-sel 'give-SEL'

over-gev-en / over-geef-sel 'over-give-SEL ('vomit (N)')

d. sterv-en / *sterv-ing 'die-ing'

uit-sterv-en / uit-sterv-ing 'out-die-ing' ('extinction')

(Neeleman & Weerman 1993a:439f, modified)

(652) a. *merk-sam / auf-merk-sam 'AUF-notice-able' ('attentive')

b. *Schreib-ung / Aus-schreib-ung 'AUF-write-ing' ('announcement')

(Zeller 2001:241,modified)

Another argument which indicates that particle verbs are formed prior to the addition of the suffixes in question comes from the scope of the suffixes. For example, the scope of *auf-mach-bar* 'open-do-able' ('openable') is the entire particle verb *aufmach-* rather than just *mach-*.

Like the suffixes above, I assume the prefixes *un-* and *ur-*, exemplified at the beginning of this subsection, are added syntactically after the particle and verb have merged. Only *un-* will be briefly considered below.

6.2.2 Gerunds, Derived Nominalizations and Mixed Nominalizations

In this section, I discuss the differences between gerunds, derived nominalizations and mixed nominalizations, and how particle-verb constructions behave with respect to each of these three types of nominalizations. (This terminology is taken from Chomsky 1970; mixed nominalizations are often called *ing-of* nominalizations.) I argue that the different behavior of particle-verb constructions in the nominalizations can be explained by allowing the nominalizing suffix to merge with the V(P) at different stages of the derivation.

The examples below demonstrate each of the three types of nominals to be discussed; (653a) contains a gerund, (653b) a derived nominalization, and (653c) a mixed nominalization.

(653) a. John's refusing the offer.

b. John's refusal of the offer.

c. John's refusing of the offer. (Chomsky 1970:215)

Gerunds retain many of the properties of verbs, including the ability to Case-mark an object and occur with an auxiliary, neither of which is possible in derived or mixed nominalizations. These latter two may, however, occur with their internal argument as a complement, provided the Case-marker *of* is inserted. Derived nominals differ from mixed nominals in that the latter involve the affixation of the nominalizing suffix *-ing*, while the former involve the affixation of somewhat idiosyncratic affixes such as *-tion* (in *destruction*) or *-th* (in *growth*). Other than this, the difference between the two is not immediately obvious. Chomsky (1970:215) notes that when a derived nominal exists for a particular root, the existence of a mixed nominal formed from the same root is "rather clumsy", which might suggest they are a single process with irregular forms blocking productive formation with *-ing*, much like the existence of irregular verb forms blocks certain suffixes from being added. Harley &

Noyer (1998) take this route, treating the *-ing* suffix of mixed nominalizations simply as the default form of a derived nominalization, used when no other form is available.

I disagree with Harley & Noyer's (1998) claim that derived and mixed nominals are not distinct. By their own admission, there are cases where the derived nominal has a special meaning not available in the mixed form. In such instances, the corresponding mixed nominalization derived from the same verb is possible and retains a more general activity meaning. The following example is theirs.

(654) a. *Nominalization with specialized meaning and specialized form*
Belushi's **lethal mixture of drugs and alcohol** proved fatal when he drank it.

b. *Nominalization with default -ing (Mixed nominalization)*
Belushi's **foolish mixing of drugs and alcohol** proved fatal.

(Harley & Noyer 1998:8)

Derived and mixed nominalizations also appear to be different in which nPs they allow to occupy their subject position. The examples below show that the verb *grow* appears quite acceptably in both derived and mixed nominal forms. Nonetheless, (655) show that while the derived nominal *growth* clearly does not allow a possessor subject interpreted as the external causer, the mixed nominal *growing* does (see Marantz 1997:§3 for discussion). In contrast, (656) shows that the derived nominal allows the internal causer to surface as the possessor subject, while the mixed nominal does not.[24]

(655) a. the growth of marijuana

b. * John's growth of marijuana

c. the growing of marijuana

d. John's growing of marijuana

(656) a. the marijuana's growth

b. * the marijuana's growing

[24] Note that while this particular distinction between derived and mixed nominal forms is found with *grow*-type verbs, *destroy*-type verbs do allow possessor subjects to be interpreted as the external causer: *John's destruction of the city* (again, see Marantz 1997:§3 for discussion).

A third contrast is that mixed nominals appear to marginally allow a verbal modifier to follow them (but not precede them), while derived nominals do not.

(657) a. * the growth of marijuana secretly

b. ? the growing of marijuana secretly

(658) a. * John's refusal of the offer politely

b. ? John's refusing of the offer politely

Finally, particle verbs cast doubt on the claim that these two types of nominalizations are not distinct. While the set of verbs that occur in particle-verb constructions rarely overlaps with the set of verbs that have special derived nominalizations, in the instances where there is overlap the particle only felicitously occurs with the mixed form.[25] All forms in (662) are possible as mixed nominalizations.

(659) a. John's marrying off of his daughter was quite emotional for him.

b. *? John's marriage off of his daughter was quite emotional for him.

c. cf. Tim's marriage of John's daughter was quite emotional for John.

(660) a. The selling off of the company's assets was ordered by the IRS to collect unpaid taxes.

b. * The sale off of the company's assets was ordered by the IRS to collect unpaid taxes.

c. cf. The sale of capital assets results in capital gain or loss.

(661) a. Our child grew up so quickly.

b. * our child's growth up / the growth up of our child.

c. cf. the growth of our child

[25] An exception to this appears to be *pay off* (e.g. one's debt), which is minimally attested online in the derived nominalization *the payment off of ...*, typically in documents written in legalese. (A note of caution: there are many more attested sentences where 'the payment' and 'off of' are adjacent, but not interpreted as a particle verb.) A sentence like *the paying off of one's debt* focuses on the internal temporal structure of the event, while *the payment off of one's debt* lacks any internal temporal structure. Due to its rarity and usage restriction, I assume this form is not productively derived in the manner described below.

(662) live out/*life out, pay out/*payment out, settle off (a debt)/*settlement off (of a debt), ship off/*shipment off, see off/*sight off, act out/*action out, auction off/*the auction off of, ignite up (one's sex life)/*ignition up, opt out/*the option out

In sum, derived nominalizations and mixed nominalizations are not the same.

Let us turn now to the structure of the three nominalizations under discussion, beginning with the unproblematic gerund. In gerunds, particles can precede or follow a particle verb's object with little or no difference in acceptability.

(663) a. his looking {up} the information {up}

b. his defining {away} the problem {away} (Chomsky 1970:193)

This comes as little surprise. I have already noted that gerunds may occur with auxiliaries and allow a verb to assign Accusative Case to its complement, thus the attachment site of *-ing* must be fairly high—certainly above *v*P. Since both the continuous order and discontinuous order are entirely constructed within the *v*P (Accusative Case crucially being assigned within this domain), we expect that both orders should be compatible with the gerund.

I consider mixed nominalizations and derived nominalizations together, as only the former is found with particle-verb constructions. In mixed nominalizations, particles are claimed to only be allowed in the continuous order (e.g. Chomsky 1970; Harley & Noyer 1998; McIntyre 2013), though the judgments appear slightly less categorical than the literature pretends. For example, Chomsky, who provides the categorical judgments below, states within his text that he finds mixed nominals with particle-verb constructions to be marginal, though the continuous order is preferable to the discontinuous one. I return the issue of judgments shortly.

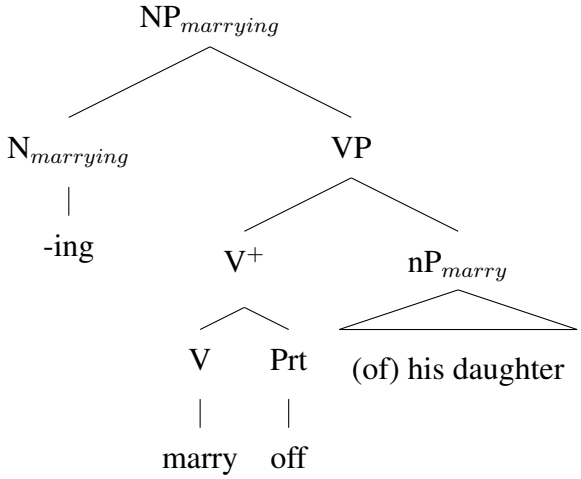
(664) a. his looking {up} of the information {*up}

b. his defining {away} of the problem {*away} (Chomsky 1970:193)

I suggest that in mixed nominalizations, the nominalizing head merges with VP. Importantly, the verbal head has been categorized as a verb, and the functional projection responsible for Case is absent. This allows a verb and particle to merge prior to nominalization,

and it also makes it possible for adverbs to marginally occur with the head. The verbal head Conflates with *-ing* while the particle remains *in situ*.[26,27]

(665)



In contrast, derived nominals appear to be formed prior to the categorization of the root. At this stage of the derivation, particles have not yet merged into the structure. If the resultative meaning in particle-verb constructions depends on the particle combining with a verb, a derived nominal will be unable to receive a resultative meaning, so we should not see particles in derived nominals (as was shown in (659)-(662)).

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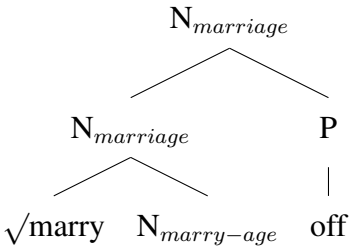
[26] Lüdeling (2001:101ff) posits essentially the same structure for *-ung* suffixations in German, but see Zeller (2001:243) for counterarguments and an alternative analysis.

[27] The Swedish counterpart to the mixed nominalization differs slightly from English. As shown in Toivonen (2003), the particle in Standard Swedish prefixes onto the verb in mixed nominalizations (and in passive participles, as well as *-er* nominals). Regardless of when in the derivation the prefixation occurs, the structure I propose for English can be carried over to Swedish as well.

(i) a. {Ut}-låningen {*ut} av böcker har ökat
out-lending.the out of books.the has increased
'The lending of books has increased.'

b. {Hem}-skjutsningen {*hem} av flickan gick bra
home-driving home of girl.the went well
'Driving the girl home went well.' (Toivonen 2003:38f, modified)

(666)



This carries over to non-particle verb resultatives as well, which do not occur with derived nominals.

(667) a. * his shot of Bill dead. (cf. ??his shooting of Bill dead)

b. * their laughter of the play off the stage (cf. ??their laughing of the play off the stage)

c. * his talk of us into a stupor (cf. ??his talking of us into a stupor)

Let us return to the issue of judgments. Recall that mixed nominals are claimed to only occur with the continuous order of a particle-verb construction, which would suggest that only non-projecting particles can occur in this construction. This does not fall out from my proposed structure in (665), which could allow a projecting particle as a complement. In fact, while the claim that mixed nominals only occur in the continuous order seems to hold quite well in general, some speakers occasionally allow post-object particles in mixed nominalizations with transparent particles (this is also noted in Fischer 1971:16). For example, six native speakers were asked for their judgments of the following pair of sentences. While all speakers accepted (668a), their judgments for (668b) ranged from grammatical (2/6) to marginal (2/6) to ungrammatical (2/6). Further, examples of mixed nominalizations in which the particle follows the nP are plentiful online.

(668) a. The cutting off of heads helped the French solve their problems in the past.

b. %$^{(?)}$ The cutting of heads off helped the French solve their problems in the past.

Next, compare the pattern above with the literature on mixed nominalizations formed from resultatives, which should pattern like the discontinuous example above. Kayne (1985:123) treats mixed nominalizations of discontinuous particle verbs and resultatives on par with

each other, both of which he considers ungrammatical. Punske (2012:56) also indicates that resultatives may not occur in mixed nominalizations.

(669) a. * The winding of that clock up won't be easy.

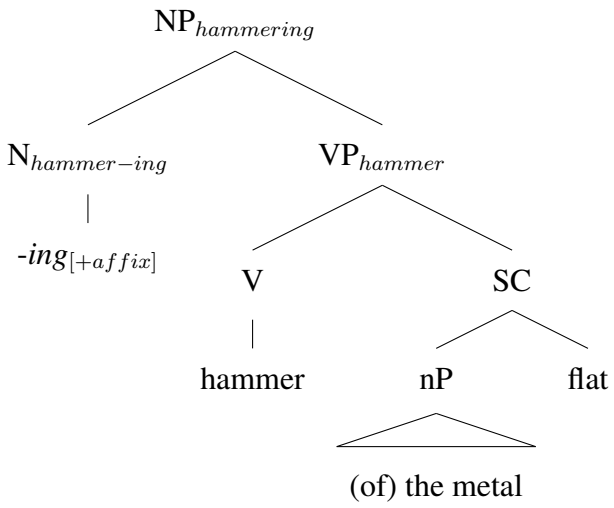
b. * The hammering of the metal flat is exceedingly difficult. (Kayne 1985:123)

Carrier & Randall (1992:201ff) contradict Kayne's judgments, providing examples including *the watering of the tulips flat*, *the slicing of cheese into thin wedges*, *the cooking of food black* and even *the hammering of metal flat*, all of which they claim are grammatical. Internet searches also yield many results for resultatives in mixed nominalizations.[28] As for myself, I find all instances of resultatives in mixed nominalizations marginal at best.

What are we to make of this? I suggest that there is, in fact, little difference between mixed nominalizations with projecting particles and those with adjectival resultatives. Mixed nominalizations with projecting particles may feel more ungrammatical than mixed nominalizations with adjectival resultatives because the former has an alternative, grammatical derivation with a nonprojecting particles, whereas the latter has no alternative derivation. I assume that the structure of a mixed nominal with a resultative (or a projecting particle) is that below.

[28] Perhaps surprisingly, the resultative predicate can occasionally be found not only after the argument nP but also before it (e.g. 'shooting of * dead' and 'shooting dead of *'). Guéron (1990:155) provides similar pairs, with judgments indicating that placement of the resultative predicate after the *of*-nP string is ungrammatical while reversing the order of these two elements results in marginally acceptable constructions. I only sometimes find the 'continuous' order more acceptable; in other instances, it seems equivalent with or even less acceptable than the 'discontinuous' order. The result never seems perfectly grammatical, though.

(670)



I suspect that the ungrammaticality/marginality of such constructions is due to the need for Case to percolate down into the SC. That said, I do not have a good explanation for why this should not be possible when Case can percolate down into the nominal to the complement of V in (665), nor do I have an explanation for why the small-clause subject could not simply raise to SpecVP for Case.

In this section, I have examined three types of nominalizations: gerunds, derived nominalizations and mixed nominalizations. We saw that deriving gerunds from particle verbs is unproblematic regardless whether the particle projects or not. In mixed nominalizations, I suggested that the nominalizing suffix *-ing* merges with VP, and the verbal head then Conflates with *-ing*, stranding the particle, with Case percolating down to the complement of V^{+}. Finally, I suggested that derived nominalizations do not occur with particles because the otherwise-verbal root merges with a nominalizing suffix before it is categorized (i.e. before it can merge with the particle), and as a noun it is unable to merge with a particle to derive the expected interpretation.

6.2.3 *-er* Nominals

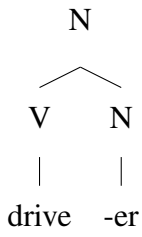
A construction which has come up in several recent discussions of particle verbs is the nominal construction formed by adding *-er* to a verb (e.g., Svenonius 2004; Farrell 2005:103; Cappelle 2010; McIntyre 2009, 2012, 2013; Los et al. 2012). *-er* nominals are derived from a highly productive word-formation process which involves affixing *-er* onto

a verb, creating a noun denoting someone or something that regularly performs the activity denoted by the verb (e.g. as a job, hobby, habit, etc.). Some common examples are below.[29]

(671) crier, driver, kicker, jumper, painter, runner, singer

An obvious syntactic account of *-er* suffixation is to merge a nominalizing *-er* suffix with a verbal head without projecting a verb phrase, forming a structure like the following (cf. Fabb 1984:206ff).

(672)



If the combination of a verb and particle can form a syntactic head V^0 as I have argued, and if *-er* nominals involve the merger of an internal argument N^0 with V^0 as in the structure above, it should be possible to form *-er* nominals with particle verbs. This, however, does not match native speaker judgments. Although there are a some common lexically-stored exceptions, including those listed in (673), native speakers do not find *-er* nominals built from particle verbs fully grammatical. Thus, the examples in (674) are typically considered marginal at best. Note that although all examples in (673) include a verbal and prepositional element, only the examples in (673a) clearly have corresponding particle verbs.

(673) a. P-*er*-V-*er*: picker-upper, fixer-upper

b. P-*er*-V: runner(s)-up, passer(s)-by

[29] For the sake of completeness, I wish to point out that not all *-er* nominals have an agentive reading. For example, Marantz (1989:102f) shows that middles can also take the *-er* ending, providing the examples below. In this section, I limit my focus to those with an agentive interpretation, as they are the most productive.

(i) a. That book sells well in the south.
b. That kind of chicken cooks quickly.
c. That book is a best-seller in the south.
d. That chicken is a quick-cooker. (Marantz 1989:103)

(674) *?putter-downer, *?caller-upper, *?butter-inner, *?picker-offer

What is especially interesting is that although speakers find the constructions marginal, they do produce them occasionally, and in such instances there is a strong preference for the nominalizing suffix to appear on both the verb and the particle. For example, attaching an *-er* suffix to the particle verb 'calm down' could plausibly yield any of three forms: (i) *calmer downer*, (ii) *calm downer*, (iii) *calmer down*. Few, if any, native English speakers would find any of these fully acceptable; however, a strong preference is generally felt for option (i), which is adequately attested online. It is less clear which of (ii) or (iii) is preferred, as speakers differ in their preference among the two. While I personally prefer (ii) over (iii), Svenonius (2004) would appear to prefer (iii) over (ii) (based on his judgments on p. 8 of his paper) and Elenbaas (2007:80) provides the example *a caster-out of demons*. In my own elicitations, I have likewise found opposing preferences among these two possibilities.[30,31]

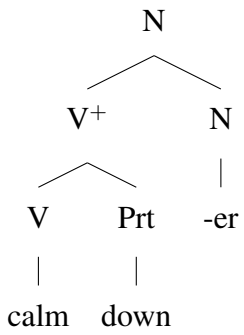
It is curious that speakers would share a preference for doubled *-er* forms when even this form is not fully acceptable. I believe the answer may lie in the interaction between two constraints and some linguistic 'error handler' which attempts to repair anomalous constructions. I provide such an account below.

When a particle verb and nominalizing *-er* combine, I assume that the particle verb is constructed first. If we adopt the structure of *-er* nominalizations in (672), we arrive at the following structure. Note that *-er* merges with a head rather than a phrase, so we predict that projecting particles and *right*-modifiers should never occur with *-er* nominals. This seems to be correct.

[30] It needs to be stressed that speakers do not find even the doubled-*er* constructions fully grammatical. The literature that discusses these constructions is not always clear about actual judgments regarding such forms, sometimes presenting them without notationally indicating any degree of marginality. Perhaps some of these authors really do intend to suggest that the constructions are fully grammatical, but while doubled *-er* nominals and compounds are indeed readily attested online, all speakers I have consulted find most of them marginal at best (and usually quite unacceptable/ungrammatical) when asked about them. See http://linguistlist.org/issues/15/15-1929.html and McIntyre (2013) for a different take and additional references.

[31] There are other V-P combinations, in which the P is not a particle, that can also be found in doubled *-er* constructions. For example, *depender-onner* and *looker-atter* are both attested, though neither one can be derived from a particle verb.

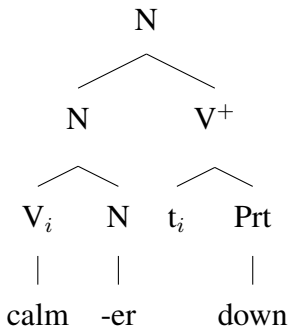
(675)



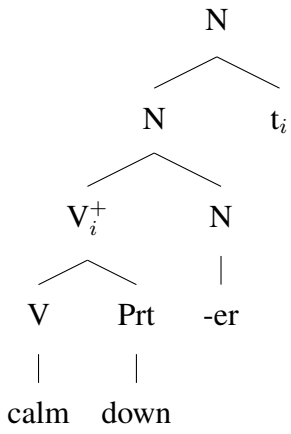
If *calm* Conflated with *-er*, we would end up with the awkward **downcalmer*. But why is this not possible? Recall in the section on Verb Raising (§4.4.2) that I suggested the linear order between a V^0 and Prt^0 (more specfically, their non-defective p-signatures) was set when they merge together. If this is the case, then Conflating *calm* with *-er* would cause a violation of this word order.

Alternative syntactic accounts are likely to encounter the same problem as that above. For example, if the suffix *-er* is allowed to be left-linearized, we would arrive at one of the following structures.[32] In (676a), the lower V incorporates into N, while in (676b) the upper V^+ incorporates.

(676) a.



b.



While this allows us to derive both of the less-preferred orders, it still does not explain why speakers prefer *er*-doubling. Note also that if movement of V^0 proceeds via Conflation, only (676a) is an option.

[32] See Harley (2009) for an account of synthetic *-er* compounds which involves incorporation. The details of her account differ from those provided here, and she does not discuss particle verbs.

I propose that the preference for *er*-doubling can accounted for as follows. As part of the processing of linguistic structure, assume that there is an error handler which verifies the grammaticality of syntactic constructions and the well-formedness of their prosodic phrasings. When errors arise, this module attempts to fix the output of the other components on-the-fly during actual speech production. In the case of the *-er* suffix, there appear to be two important constraints: (1) *-er* attaches to a verbal head, and (2) *-er* must be rightmost within its domain.[33,34] In the case of (675) and (676b), condition (2) is met, but because *-er* is prosodically attached to a particle (P) head, condition (1) is not met. In contrast, the structure in (676a) meets condition (1) but not condition (2). To repair this, the error handler reduplicates the *-er* suffix to satisfy both conditions. The result is also degraded—though significantly less so—for a simple reason: the error handler is only able to minimize the damage. The output of the error handler is able to serve as the input to further derivation, as demonstrated by the ability of the plural marker *-s* to attach only to the right-edge of *-er* nominalizations.[35]

(677) picker-uppers, *pickers-upper, *pickers-uppers

Note that the explanation provided in this paragraph is compatible with any of the syntactic structures provided above, though I assume that the structure in (675) is correct. I will return to problem of the placement of *-er* in the following section, where I attempt to derive the error described above by combining Conflation with a partial linearization algorithm.

Let us briefly consider *-er* constructions in Dutch, which take a suffix of the same form. Booij (1990:50) provides the example *aan-bied-er* 'offerer' (literally, 'PRT-offer-er').

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[33] This has been claimed by Cappelle (2010) and McIntyre (2012) as well. I add to this the proposal that there exists a specific error handler which interacts with the grammar.

[34] While these constraints appear to be the most important for this construction, the data is slightly more complex than I have made it out to be. Some particles, like *up*, seem to appear in reduplicated *-er* constructions more easily than others. Moreover, there are some constructions in which a non-reduplicated form may be preferred to its reduplicated counterpart; for example, I prefer 'throw-awayer' to 'thrower-awayer'. Finally, McIntyre (http://linguistlist.org/issues/15/15-1929.html) and Los et al. (2012:134) point out that instances of retriplication are attested, such as 'picker-upperer'. I leave these details for future research.

[35] Thanks to Benjamin Bruening (p.c.) for pointing out that plural markers are not copied along with *-er*.

Provided *-er* is merged to the right, any of the hierarchical structures proposed above for English will yield a single result when adapted to Dutch: *aan-bied-er*. If *-er* in Dutch is subject to the same constraints I proposed for English, the construction remains acceptable, as neither constraint (1) nor (2) is violated. Thus, I assume that the difference between English and Dutch in the ability to attached *-er* suffixes is determined by the position of the particle rather than a distinction in the syntactic status of the particle or verb-particle combination.

While the Dutch pattern is expected to hold in OV Germanic languages, *-er* suffixation should also be grammatical in VO Germanic languages if they allow the particle to appear as a prefix on the verb in this construction. This appears to be the case, based on the following Swedish example provided in Toivonen (2003).

(678) ... de ska träffa all {ut}-lån-are {*ut} på kreditmarknaden
they will meet all out-lend-ers out on credit.market.the
'... they will meet all the lenders on the credit market.' (PAR)

(Toivonen 2003:38, modified)

In §6.1.3, I suggested that the verb or particle in this type of construction bore the feature [+affix], causing the particle to Conflate with the verb. Once the particle has Conflated with the verb, the complex may Conflate with *-are*.[36]

6.2.4 Excursus: Deriving the Suffix Dilemma

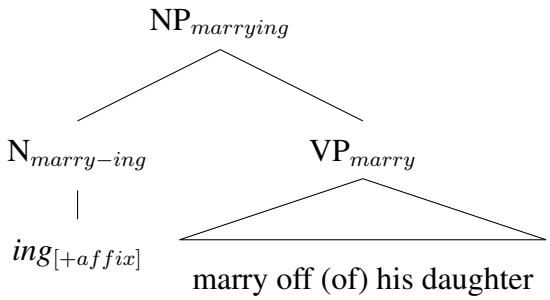
Now that we have examined mixed nominalizations and *-er* nominalizations, we are ready to address the suffix dilemma directly. Recall that the OV Germanic languages appear to readily allow suffixation onto particle verbs while VO languages do not, and I suggested that the particle 'gets in the way' of the attachment of the suffix. In the English data above, this was true of the *-er* suffix, but it was not true of the *-ing* suffix. We also saw that Swedish

[36] Some readers might ask if reordering of head via Conflation does not contradict what I claimed about the relative linear order of head being determined when they merge together. In fact, I view these as two sides of the same coin. I assume that a linearization function is called whenever a new head is merged into a structure, and it has two options: (i) Conflate the next lowest head with it if either bears the feature [+affix], linearizing the two heads in the process, or (ii) set the linear order of the two heads based on the setting of the headed parameter for that language/phrase.

can avoid the suffix dilemma in its counterpart of *-er* nominalizations by attaching the particle as a prefix. Let us see how we can explain this pattern.

First, recall the structure I adopted for mixed nominalizations, repeated below.

(665)

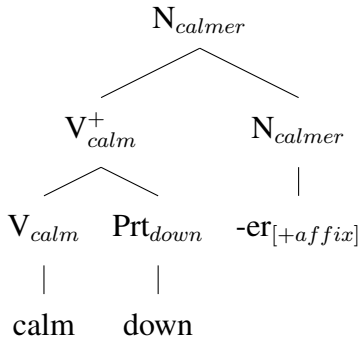


Consider now how this structure is derived. First, the verb and particle merge together to form V^+. The linearization function checks for the feature [+affix] and, not finding it, sets the linear order of the p-signatures of the verb and particle as *marry* > *off* because V is the 'head' of V^+ and Prt is its complement. The nP *his daughter* merges with the head V^+ and is, at some point, linearized to its right (again, because it is the complement of the head).[37] Next, *-ing*, the head of an NP, takes a phrasal VP as its complement. In accordance with the setting of the headedness parameter in English, *-ing* is linearized to the left of its complement. At the same time, the linearization function notes that *-ing* bears the feature [+affix], so it must Conflate with the p-signature of its complement. Thus, the linear order *marrying-off-his-daughter* is derived.

Contrast this with the derivation of an *-er* nominalizations. The structure I adopted is repeated below from (675), augmented with the addition of p-signatures.

[37] Linearization of XPs with respect to X^0 or $\bar{X}$ need not be determined upon merge, nor is it likely that it should be under the assumption that XPs may raise and extrapose. I suspect that XPs are more likely linearized at the phases defined in Chomsky (2001): CP and *v*P.

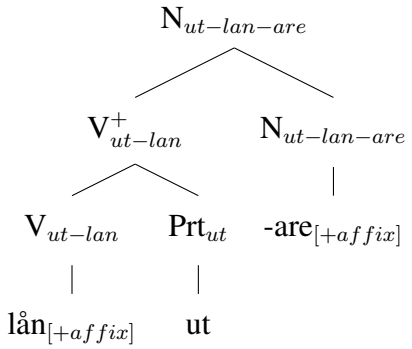
(679)



Again, the verb and particle merge to form V^{+}. Neither has the feature [+affix], so Conflation does not occur and the linear order *calm* > *down* is set. Next, because *-er* is lexically specified as a suffix, and because it is merging with a head rather than a phrase, it is linearized to the right of V^{+}. At the same time, it should Conflate with the p-signature of V^{+} to yield *down calmer*, but this would violate the previously set linear order *calm* > *down*. The construction is not syntactically ungrammatical at this point, but it is an ill-formed PF construct, and the error handler takes over.

In Swedish, this problem above does not arise because the verb and particle Conflate when they are merged, because either the verb or particle bears the feature [+affix]. Conflation sets the relative order of the verb and particle as *ut* > *lån*, and merges them into a single p-signature. The suffix *-are* then merges with V^{+}, and Conflation yields the correct p-signature *ut-lån-are*.

(680)



It should be clear why the OV Germanic languages do not exhibit the suffix dilemma: the particle is linearized left of the verb by default, so the verb may Conflate rightward with any head without altering this word order. Of course, this predicts that OV Germanic languages should have a prefix-dilemma, but this did not appear to be the case (§6.2.1 showed

that *un-* and *ur-* were able to precede particles in German). In §6.2.6 I suggest that the prefix *un-* is affixed not via Conflation, but due to some other mechanism that forms phonological words. This other mechanism is presumably also the reason verb-adjacent particles in OV Germanic languages are felt to be prefixes.

6.2.5 V+Particle Compound Nouns

Another common word-formation process particle verbs participate in that suggests they are able to form complex heads is compounding. Particle verbs can, and frequently do, occur in compound nouns where neither the verb nor the particle bears any extra overt affixes. As should be expected in an English compound, the particle in a V-particle compound lacks the stress it otherwise has (cf. *gréenhouse* vs. *a gréen hóuse*). Some examples of V-particle compounds are provided below. I place a hyphen between the verb and particle to indicate that they form a compound, but the actual spelling of these compounds is somewhat idiosyncratic, with multiple spellings being common.

(681) fly-by, sit-in, drop-off, sell-out, sell-off, drive-by, put-down 'insult'

When the nominal refers to a countable object or event, it easily takes plural morphology which is attached to the right edge of the entire nominal (i.e. the particle). This contrasts with morphology like the agentive *-er* suffix, which we saw does not easily attach to particle verbs. Also unlike the agentive *-er* suffix, where affix-copying often improves the acceptability, affix-copying of the plural affix leads to ungrammaticality. Note, however, that the plural affix may attach to the outside of forms that have already undergone affix-copying.

(682) a. fly-bys, drop-offs, take-overs, put-downs

b. *flys-by, *drops-off, *takes-over, *puts-down

c. *flys-bys, *drops-offs, *takes-overs, *puts-downs

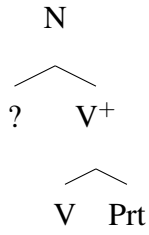
(677) picker-uppers, *pickers-upper, *pickers-uppers

The ability of *-s* to attach to verb-particle compound nouns is not surprising, given that *-s* is able to attach freely to nominal compounds regardless of the usual category of the latter

portion of the compound. Examples include *kill-joys*, *blow-hards*, *pick-me-ups*, *cross-overs*, *bugsprays*, *doorstops*, *forget-me-nots*, *shoot-em-ups*, etc.

A basic account of compound nominals is that they are formed by merging a nominal head with the complex head, yielding the structure below.

(683)



Although this seems relatively straightforward, the Conflation approach to head movement adopted here introduces a minor complication. Specifically, when N merges with V^+, the p-signature of V^+ should Conflate with the p-signature of N, given that N appears to be phonologically null in the absence of an overt affix (in Hale & Keyser 2002, null heads force Conflation). If the null N is nonetheless specified as a prefix, Conflation will not alter the order of the verb and particle, leading to the correct derivation. It could not be specified as a suffix, otherwise the verb would be pronounced after the particle due to Conflation. Alternatively, given that the compound-forming N head has a prosodic effect on the complex particle verb, it may be that N is not actually phonologically null and may therefore lack the feature [+affix]. If so, Conflation does not occur, and the verb and particle will surface in the expected order.

6.2.6 Adjectival Passives and *un-* Prefixation

The final word-formation process we will consider is the formation of adjectival passives. Both German and English particle verbs are able to occur as attributive, pre-nominal adjectival passives, as the following examples demonstrate. Emphasis in the English examples has been added.

(684) a. das auf-ge-mach-te Buch ‘the opened book’

b. das ein-ge-stell-te Temperatur ‘the set temperature’

c. die ab-ge-nommen-e Leistung ‘the decreased performance’

d. die zu-ge-mach-te Fenster ‘the closed window’

e. der aus-ge-zogen-er Hose ‘the taken-off pants’

(685) a. He reaches over and grabs **the beat up woman** by the hair and begins to drag her out. (COCA)

b. By the time we arrived, the incident had been over for fifteen minutes. lieutenant Morris and a few other soldiers had dragged three of the bodies from **the shot-up van** and laid them by the side of the road. (COCA)

c. In the lobby, the doors of an elevator open revealing Sissy inside wearing **a buttoned up dress**. (COCA)

d. It could be **a locked up file cabinet**. (COCA)

e. Both boys are among dozens of former teenage inmates who painted life inside the state’s largest short-term juvenile detention facility as a state- sanctioned “Lord of the Flies,” where children survive by using their fists or **the filed-down shanks of pens**, wire or paper clips, or, as a last resort, by feigning attempts of suicide so they’ll be moved to a more secure cell and constantly monitored. (COCA)

Although pre-nominal adjectival passives may consist of more than one word, the adjectival participle itself must immediately precede the modified noun in most cases. For example, while *a very well-fed child* and *a child fed sour grapes* are both acceptable, **a fed-sour-grapes child* is not. The same pattern is found with PPs: *a child thrown to the wolves* vs. *a thrown(*-to-the-wolves) child*. In contrast, the examples above demonstrate that the presence of a particle after the participle does not cause ungrammaticality, suggesting that the (deverbal) participle and particle function as a syntactic and/or prosodic word.[38]

[38] Adjectival pseudo-passives are similar in this regard, allowing the preposition to occur between the participle and modified noun: *an oft slept-in bed*, *a well cared-for vehicle*. See also footnote 45 regarding resultative

Further suggesting a word-like status of the verb + particle combination in the adjectival passive, it may be negated with the addition of the prefix *un-*, which precedes the particle in both languages. Note that unlike the suffixes we examined, the prefix *un-* in German has no difficulty affixing onto a particle. The English examples below, which correspond to (685), are taken from online sources and are presented with emphasis added.[39]

(686) a. un-auf-gekoch-t 'unboiled'

b. un-aus-ge-schlaf-en 'un-out-slept' (≈ 'underslept')

c. un-an-ge-meld-et 'un-on-announced' (='unannounced')

d. un-ab-ge-schick-t 'un-off-sent' (='unsent')

e. un-ab-ge-wasch-en 'un-off-washed' (='unwashed-off')

f. un-ab-ge-schloss-en 'un-off-locked' (='unlocked')

g. un-auf-ge-stell-t 'unnominated' (Lüdeling 2001:4, 107ff, adapted)

(687) a. We turned to a right and saw 2 Obi's rolling around the ground, punching eachother. One was bleeding and the other looked like he was about to rip his head off. e_o "Guys!! Help!!" **the unbeat up one** yelled while trying to pin the other on the ground.[40]

b. A Hermosa resident reported leaving a garage door unlocked and finding that someone had taken advantage by swiping **an unlocked-up bicycle**.[41]

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secondary predicates.

[39] Lüdeling (2001:109ff) points out that *un-* prefixation in German is not compatible with all adjectival passives formed from particle verbs. She concludes that the variability is not due to structural reasons, arguing instead that *un-* can only be prefixed to listed particle-verb constructions, meaning lexicalized, non-transparent particle verbs. I, likewise, assume that any such variability is due to extra-syntactic factors and will not concern myself with it here.

[40] Retrieved from http://www.gaiaonline.com/journal/?mode=view&post_id=30592475&u=18137293, 6/11/2013.

[41] Retrieved from http://archive.easyreadernews.com/story.php?StoryID=20024857, 6/11/2013.

c. There was a boldness about her that made Sunny nervous, and besides, she had a sort of "come-on" look, with **the unbuttoned-up dress** and the stilettos.[42]

d. Don't try to board **an unshot up ship** - make sure that the crew has taken casualties, it's guns have been shot up, etc. In short, if it's flashing white, go ahead and board[43]

e. ...my initial approach to modding fans for the D14 involved filing down flanges until they were are thin as Noctua flanges. But then I saw **unfiled-down flanges** on another website and asked the poster how he had done it. He told me he had used a drill, and I went from there.[44]

In the examples above, the particle is not modified and can be analyzed as a nonprojecting particle. In contrast, if we attempt to form an adjectival passive with a modified (i.e. projecting) particle, the result is ungrammatical.

(688) a. * the (un)beat(en) right up man

b. * the (un)locked right up bicycle

c. * the (un)buttoned right up dress

d. * the (un)shot right up ship

e. * the (un)filed right down flanges

One might think that the ungrammaticality of these examples is not the result of the particle projecting, but rather due to semantic incompatibility of *right* with the meaning of adjectival passives. When the adjectival passive occurs post-nominally, however, modification with *right* is possible (e.g. *a man beaten right up*). Even if this is analyzed alternatively as a reduced relative clauses, the constructions do not appear to differ semantically. The ungrammaticality of *right* in (688), then, must not be due to the semantics. Additional evidence

[42] In Adler, Elizabeth (2010) *It All Began in Monte Carlo*, St. Martin's Press. p. 27.

[43] Retrieved from http://shoguntotalwar.yuku.com/reply/701849, 6/11/2013.

[44] Retrieved from http://www.overclock.net/t/991687/accident-turned-to-positive-results-nh-d14, 6/11/2013.

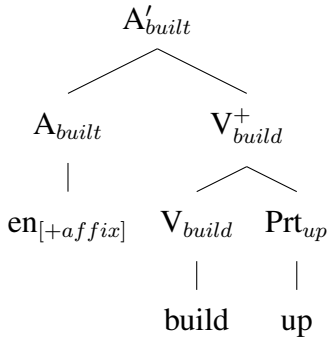
suggesting that projecting particles should not be able to occur in this construction comes from the fact that canonical resultative constructions do not generally occur in pre-nominal adjectival passives, though they may occur in post-nominal adjectival passives.[45] This is demonstrated below.

(689) a. * the hammered-flat metal

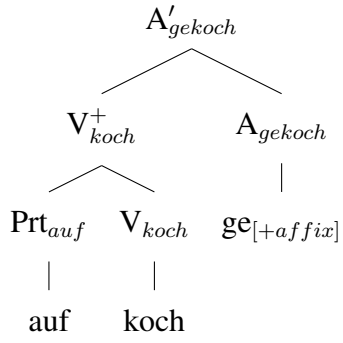
b. the metal hammered flat

Let us now examine how to derive the adjectival passive in the syntax. I assume that the participial affix *-en*/*ge-* heads AP, taking the particle verb as its complement. Because the participle bears the feature [+affix], the verb's p-signature Conflates with the participle's p-signature, while stranding the particle.

(690) a.



b.



The position of negation is slightly problematic under current assumptions. If negation is an affix heading its own projection (e.g. NegP) above AP, then the participle should Conflate with it. While this would be unproblematic in English, in German we would expect

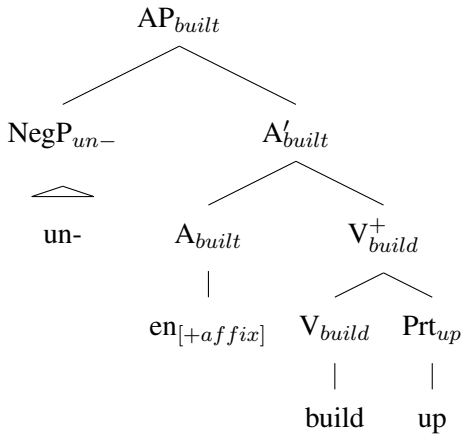
[45] Carrier & Randall (1992:194ff) claim that pre-nominal adjectival passives can be formed when the modified noun corresponds to the internal argument of the verb (participle). They consider the following examples grammatical.

(i) the stomped-flat grapes
(ii) the spun-dry sheets
(iii) the smashed-open safe
(iv) the scrubbed-clean socks (Carrier & Randall 1992:195)

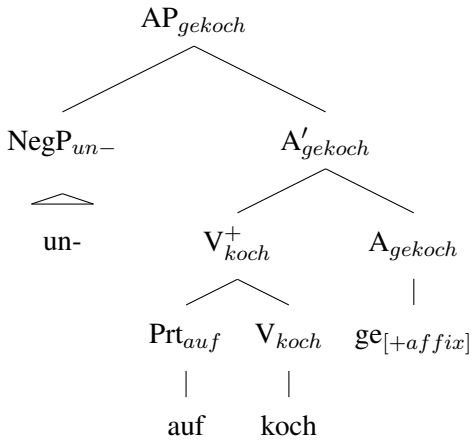
I find (iii) acceptable, (i) and (iv) rather marginal, and (ii) somewhere in-between. (i) is much better when coordinated, as in Carrier & Randall's sentence *the watered-flat but uncrushed tulips*.

orders like **auf-un-ge-kocht* instead of the accepted order *un-auf-ge-kocht*.[46] I suggest instead that *un-* occupies the specifier position of AP, where it is linearized to the left in both OV and VO languages. Assuming that Conflation does not apply to specifiers (it has not been defined to do so), *un-* will be prefixed onto the particle in German at PF. (Note that if Conflation did apply to specifiers, conflation of the participle into *un-* in German would yield ungrammatical orders like *un-ge-kocht-auf*.)

(691) a.



b.



At present, this analysis faces two problems. First, it does not yet explain why only nonprojecting particles may precede the modified nouns in English (German has no such restriction). Recall that modified particles and resultative secondary predicates are, at least in most instances, disallowed in pre-nominal position. I suggest that the reason for this is that there is a phonological alignment constraint in English that holds between the participle head and the modified noun. Specifically, for pre-nominal placement of a participle form to be licensed, the prosodic word containing the head of AP (i.e. the word containing the *-en* affix) must be immediately adjacent to the modified noun. I assume that, by virtue of their nonprojecting status, nonprojecting particles are able to form a prosodic word with the participle head, allowing them to exceptionally appear in prenominal adjectival passives. In contrast, because modified (i.e. projecting) particles and resultative secondary predicates

[46] An analysis where negation is claimed to occupy a head position above AP is found in Bruening (to appearc), which I do not adopt in part for the reason just stated.

constitute syntactic phrases which map to prosodic phrases at PF (cf. Selkirk 1986), they are not phonologically 'deficient' in any way and will not prosodically adjoin to preceding material. (Recall that I adopted a similar constraint from Bruening to appeara in the discussion of Quotative Inversion in §4.4.3.1, where I claimed that (only) nonprojecting particles were able to intervene between a verb and the post-verbal subject because they could form part of a prosodic word with the verb.) When this condition is not met, the entire AP is linearized to the right of the modified noun. This constraint can be formalized as follows.

(692) Align A-N (operating over adjectival passives in English):

Align(A_{ω}), L/R, N, L/R)

(An edge of the prosodic word containing the adjectival participle must be aligned with an edge of N.)

If we assume that adjectival passives are linearized to the left of modified nouns by default (because this order is read off the syntax), the alignment constraint above will have the effect of forcing APs in adjectival passives to be linearized to the right of the modified noun whenever the participle is followed by material that cannot be prosodically incorporated into the prosodic word containing the participle.

A prosodic explanation of this sort could also explain the ease with which non-particle prepositions can occur in prenominal position as well (e.g. *an oft slept-in bed*, *a well cared-for puppy*, *a well looked-after home*). Like other function words, prepositions in English normally 'cliticize' onto neighboring material, usually the following NP. Since this NP is not present in the complement position of P in the adjectival passive, the preposition instead 'cliticizes' phonologically onto the preceding word.

The second problem with this proposal (and other proposals regarding adjectival passives) is not easily overcome. Whereas participles derived from particle verbs can be negated with *un-* quite easily in pre-nominal position (e.g. (686)-(687)), negation with *un-* of participles not in pre-nominal position is not easy. Participles derived from verbs in resultative constructions appear unable to be negated; in contrast, while negated participles derived from particle verbs generally seem unacceptable, they are occasionally attested. (The judgments

in (694) are mine.) Resultatives in German also appear to be prohibited from appearing in adjectival passives.

(693) a. * The river appears unfrozen solid.

b. * The metal looks unhammered flat.

(694) a. * The bicycle appears unlocked up.

b. * The shirt seems unbuttoned up.

(695) a. Arlo was last seen locked up for the Trooper Tom incident (then he decided to take the fall for Boyd, who is now un-locked up and back with Ava) for the killing of Devil.[47]

b. I am not a big man by any means, but this will not button (velcro) shut over my light jacket, so I have to wear it un-buttoned up.[48]

(696) * un-weich-gekocht 'un-soft-boiled' (Lüdeling 2001:4, modified)

Although more vigorous examination of speakers' acceptability judgments concerning negated participles in non-pre-nominal positions is needed, it seems safe to say that using *un-* to negate participles is significantly easier in pre-nominal position than in other positions. This is unexpected if the difference between pre- and post-nominal adjectival passives is only due to a phonological alignment constraint, as I have suggested. In the structure I proposed, *un-* scopes over the entire particle or resultative construction, and it should thus be able to yield plausible interpretations (e.g. the metal looks (like it was) not hammered flat); despite this, the constructions generally remain unacceptable when not in pre-nominal position. This suggests that the syntactic structure licensed in pre-nominal position may be distinct from the structure licensed in other positions, but I am unable to explore this further here.

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[47] http://boards.straightdope.com/sdmb/showthread.php?t=677632, retrieved 4/8/2014.

[48] http://www.homedepot.com/p/3M-Tekk-Protection-Personal-Safety-HiViz-Reflective-Safety-Vest-94616-80030T/202080177, retrieved 4/8/2014.

6.3 Conclusion

In this chapter, I examined the morphosyntactic behavior of particle verbs. Although it has frequently been assumed that the word-like properties of particle verbs are readily explainable by adopting a complex-head approach, the data I presented here reveals that the actual situation is more complicated than sometimes assumed and that more in-depth examination is warranted. This chapter highlighted some of these complications associated with the particle verb's word-like behavior, and it sketched out a possible analysis maintaining the Conflation approach to head movement adopted above while drawing a distinction between categorized and uncategorized roots.

In §6.1, I first examined the relationship between particles and various prefixes. I suggested that one type of prefix, the (non-particle) P-prefixes, merges with an uncategorized Root while another type, the particle-prefixes, merges with a categorized Root. Both types of prefix bear the feature [+affix] which triggers Conflation, differing from particles in this regard. In English, I argued that P-prefixes must merge with an uncategorized root and not with a categorized root based on the possible interpretations of verbs containing both a P-prefix and a particle. I further argued that *re-*, unlike P-prefixes, merges with a categorized verb, showing that it can occasionally be found with particle verbs.

Following this, I examined in §6.2 some word-formation processes involving particle verbs in OV Germanic languages, providing arguments against their conception as presyntactic, morphological combinations. I then examined and provided analyses for a number of specific word-formation processes involving particle verbs in English. I claimed that particles could not be found in derived nominalizations because the nominalizing affix merges with an uncategorized head, before particle verbs are built. In contrast, I claimed that mixed (i.e. ing_{of}) nominalizations involved the merger of the nominalizing head *ing* with a VP. With respect to *-er* nominalizations, which are most felicitous (though still awkward) when the suffix is doubled—appearing on both the verb and particle—I argued that there was a conflict between the need for *-er* to Conflate with the verb and to appear rightmost in the syntactic word it is part of, and that the doubling is an attempt to resolve the error created by the presence of an intervening particle. The subsequent section attempted to derive this

problem and the 'suffix dilemma' (i.e. the differing degrees of ease with which suffixes can attach to particle verbs in the OV Germanic languages versus the VO Germanic languages) through the interaction between Conflation and the linearization mechanism. It was suggested that affixes attaching to syntactic heads can be specified as prefixes or suffixes. If they are specified as suffixes, the linear order of the verb and particle must be reversed when the verb Conflates with the suffix, leading to ungrammaticality. Finally, I suggested how the analysis could account for particle verbs in compounds and pre-nominal adjectival passives, in the latter case arguing that a phonological alignment constraint was partially responsible for the fairly unique ability of nonprojecting particles to intervene between a modified noun and the pre-nominal participle.

Chapter 7

CONCLUSION

In this dissertation, I have attempted to account for the syntactic and semantic characteristics of particles, particle verbs and particle-verb constructions. This attempt began by defining 'particle' as the class of "syntactic heads which need not project phrases and which may merge directly with a verbal head", with the remainder of the thesis defending a particular instantiation of this claim.

The syntactic account I proposed treats projecting particle-verb constructions as a type of ECM/raising construction, with the particle functioning as a secondary predicate much like in a resultative construction. In order to demonstrate that particles are, indeed, predicates—including particles that have frequently been called 'aspectual' and those which have been treated as forming part of noncompositional idiomatic combinations—I first developed a semantic treatment of the various uses of the particle *off*, which served as a representative example of prepositional particles in general. I showed that its meanings are systematic rather than idiosyncratic (i.e. the same meaning is present in numerous verb+particle combinations), and I showed how its nontransparent meanings can be derived from the underlying spatial senses associated with the particle. In nontransparent instances, I claimed that the presence of specific covert GROUNDS in the semantics gives rise to specific, metaphorical extensions of these spatial senses. After examining the uses of the particle *off*, I considered a number of particles which have been classified by some as 'aspectual' particles. I argued that these particles were also (metaphorical) spatial predicates and showed that any aspectual character of those particles could be derived from their underlying spatial denotations. I also argued against McIntyre's (2004) treatment of a number of (usually) intransitive particle verbs—such as the continuative use of *on*—as event-modifiers, providing evidence that these particles are predicates of entities like all other prepositional particles.

In order to defend the claim that particles retain a spatial component in their meaning—which is not obvious given that they are used metaphorically—I demonstrated that the preposition-modifying *back* is compatible only with prepositions containing a spatial meaning. I then showed that this modifier is also largely compatible with particles, including many nontransparent 'aspectual' particles and particles in 'idiomatic' particle verbs, indicating that their semantics must include a spatial component.

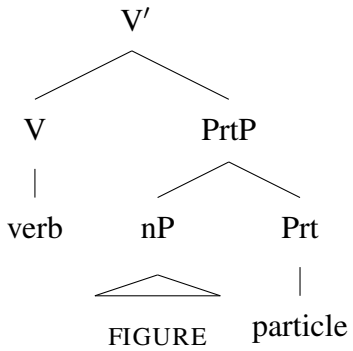
By treating the particles as predicates, I noted that we are able to account for the frequent valency and selectional differences between verbs and particle verbs they are found in. The particle, as the secondary predicate, is ultimately responsible for introducing the argument, whereas the verb may but need not assign it a θ-role, much like in a canonical resultative construction. Although I showed that while the particle is usually predicated of the lowest overt nP which c-commands it (i.e. the subject of an intransitive or object of a transitive particle verb), I also showed that there are some exceptions which we must analyse as having a covert FIGURE argument and some exceptions which have a promoted GROUND.

Having defended the claim that particles are semantic predicates, I presented a syntactic account of the particle-verb construction in Chapters 4 and 5. I had noted earlier that while the 'traditional' syntactic analyses of particle-verb constructions were largely characterized as either complex-head analyses or small-clause analyses, the division between these analyses had become blurred in more recent years, as scholars increasingly put forth analyses which treated at least some particles as optionally projecting heads. I followed this trend, attempting to determine exactly what other assumptions we must make in order to most adequately account for the ways in which particle verbs interact with the many syntactic environments in which they are found. The end result was a delicate balance between a number of theoretical claims, including the optionality of projection, the optionality of overt object raising (within a split-VP structure), the particle-*in-situ* approach for nonprojecting particles (for which the Conflation approach to head movement was adopted), and the different possibilities regarding the overt raising of ECM-subjects of SCs versus those of IPs (including inter-speaker variation). (There are, of course, many more theoretical assumptions made herein which are more widely accepted and have been treated as 'given' throughout.) These

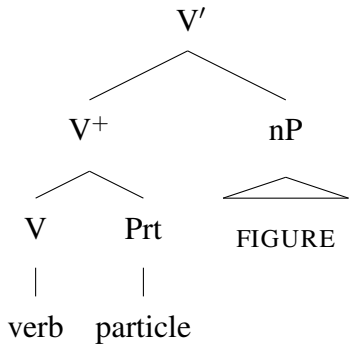
claims were not taken as given from the outset of my investigation—all types of analysis were independently considered without preexisting bias—but were each independently determined to be critical in explaining the behavior of the particle-verb construction, and it is my hope that Chapters 4 and 5 sufficiently justified their inclusion.

In more detail, the structure proposed here treated particles as optionally projecting heads whose topmost projection merges with a verbal head to form either a syntactic structure similar to that of a resultative construction or a syntactically-formed complex-head structure. The sole overt argument of the particle is merged in its specifier position when it projects, or as the complement of the complex V (labeled V^{+} for expository purposes only) when it does not project.

(697) a.



b.



This argument raises overtly to matrix subject position in intransitive particle verbs (to satisfy an [EPP] feature), and it must raise to object position (an FP between VP and *v*P) by LF for Case in transitive constructions. Because raising to object need not occur overtly, I argued that both the continuous and discontinuous orders could be derived from the nonprojecting structure in (697b) above. In contrast, only the discontinuous order is derivable from the projecting structure in (697a).

One of the central aspects of my syntactic approach is the claim that particles never take part in complex head movement. This claim was supported by evidence demonstrating that if particles did undergo syntactic head movement as part of a complex head, it would be necessary to claim that the verbal portion of this complex head obligatorily excorporates within *v*P. I showed that we can avoid assuming the existence of excorporation by adopting

the Conflation approach to head movement described in Hale & Keyser (2002) and Harley (2004). This approach allows the 'phonological-signature' of the verbal head to move without the particle, allowing us to avoid the both the excorporation and inflection problems generally associated with complex-head approaches.

The Conflation approach to head movement did not, however, provide an explanation for the behavior of the particle in Verb Raising or Quotative Inversion constructions, which have frequently been put forth as strong evidence that particles undergo head movement together with the verb. I showed that the behavior of the particle in Verb Raising constructions is problematic for syntactic analyses in general, concluding that the particle moves at PF. The account I advanced—treating Verb Raising as the result of the pairwise reordering of one or more precedence relations at PF—was able to explain both the attested and unattested orders found in Verb Raising constructions while at the same time explaining the relative freedom in the ordering of nonprojecting particles in the construction. Regarding the Quotative Inversion construction, I reproduced arguments from Bruening (to appeara) showing that the Quotative Inversion construction requires a phrasal movement rather than a head movement analysis, thereby allowing the particle to remain *in situ* in accordance with the present claims.

Chapter 5 examined complex particle-verb constructions, including the *make out*+SC construction, the *make out*+IP construction, particles in prepositional datives and double-object constructions, and particles that co-occur with adjectival resultatives. When coupled with the claims found in Lasnik (1999, 2001, 2002, 2003) and Hong & Lasnik (2010) regarding the different behavior of ECM subjects of small clauses and ECM subjects of infinitival clauses, the present syntactic analysis was shown to be surprisingly effective at predicting the grammatical and ungrammatical word orders, and more so than any previous account it was able to explain the variable judgments seen across speakers, word orders and constructions. The analysis was then applied to constructions involving one type of subextraction, where it was equally capable of explaining cross-speaker variation in judgments.

Finally, chapter 6 examined the word-formation processes in which particles are found. Whereas it seems to be tacitly assumed by some scholars that if particle verbs form

complex heads, word-formation becomes unproblematic, this was seen to not be the case. In English, we must ask why *re-* may prefix onto some particle verbs but is often degraded, why particles may productively prefix onto verbs in passives and some other constructions in certain Scandinavian languages but not in English, why ing_{of} attaches to the verb rather than the particle, why the plural marker *-s* appears on the right edge of particle verb compounds without doubling while *-er* is preferably doubled on the particle and verb, and why adjectival passives allow an *un-* prefix and *-en* suffix on the verb. Further, if the 'suffix-dilemma' that I have proposed is the correct characterization of the apparent distinction in ease with which particle verbs may participate in various word-formation processes in the VO and OV Germanic languages, then we must also explain why it does not apply to the *un-* prefix (among others) in the German data examined herein.

The present dissertation sketched out an analysis to account for these patterns by making claims about whether affixes attached to uncategorized Roots or categorized Roots, and if they attached to categorized Roots whether these had projected a phrase or not and whether the affix was specified as a prefix or suffix. Some of this was necessitated by the Conflation approach to head movement I had adopted in the preceding chapters. Furthermore, it was argued that accounting for the behavior of particle verbs in *-er* nominals and adjectival passives required consideration of PF constraints as well.

Although this dissertation attempted to account for a wide scope of data, there remains much which must be examined. First, while the present analysis focused on English, it is intended to account for particles in (at least) all Germanic languages. To that end, data from other Germanic languages was scattered throughout, and I attempted to account for at least the most essential data in these languages. Nonetheless, in-depth investigation of other Germanic languages was unable to be carried out. The present analysis predicts, for example, that the VO languages should exhibit significant considerable differences depending on whether they require (Danish), allow (Icelandic, Norwegian) or generally disallow

(Swedish) nontransparent particles to project.[1] Crosslinguistic examination of the behavior of particle-verb constructions when interacting with the phenomena highlighted in this dissertation should reveal that the behavior of particles crosslinguistically exhibits the same behavior as a nonprojecting and/or projecting particle in English in accordance with the projection abilities of particles in each respective language.

Another area of investigation which I was unable to pursue in the present dissertation is the ability to perform *wh*-extraction out of the various types of complex particle-verb constructions, which was examined in Kayne (1985) and den Dikken (1995). I noted my belief that more data on acceptability/grammaticality judgments was needed, but the data as originally presented indicates an asymmetry between the continuous and discontinuous orders with respect to *wh*-extraction that is not immediately explained in the present analysis.

At numerous point in the present analysis, I argued that we needed to make reference to extra-syntactic factors in order to account for the acceptability judgments we see in certain constructions. For example, the ability for discontinuous but not continuous particle-verb constructions to participate in coordination, Right-Node Raising and gapping constructions was noted to be able to receive a phonological explanation; the analysis of pre-nominal adjectival passives proposed the existence of a specific prosodic adjacency constraint; and processing considerations were brought up in the discussion of gerundival and complex nP argument arguments of particle verbs. It was further suggested that the Verb Raising construction should be handled at PF rather than in the syntax. One important task, then, is to tease apart exactly which data should be accounted for through syntactic means and which data would best be handled in another component.

Finally, the present analysis has implications for the more general theory of grammar. As noted earlier, the present analysis depends on a number of theoretical assumptions with wide-reaching effects, such as the optionality of overt object raising in English, and it is questionable whether my analysis could be maintained if any one of these if rejected. In

[1] To my knowledge, transparent particles may project in all Germanic languages.

addition to those assumptions already mentioned, there were several other significant consequences of my analysis. I showed, for example, that we must adopt a small-clause analysis of the double-object construction over an applicative-style analysis on the basis that the latter could not account for the continuous word order given my other claims. Bare Phrase Structure was explicitly rejected despite the appeal of its computational simplicity as there was no immediately obvious way for a linearization algorithm to treat the complement of a syntactically complex head—necessarily non-minimal in BPS—in a manner similar to the complement of a minimal node. Unless one wishes to deny the existence of complex heads, scholars adopting BPS will need to devise a solution to this problem. In contrast to BPS, the computationally appealing Conflation approach to head movement received considerable support, as it was shown to avoid complications associated with excorporation and syntactic head movement in general, all while legitimizing the extraction of a verb from a complex head assumed in many analyses of particle-verb constructions. The Conflation approach to head movement, however, has a significant impact on how we are able handle other phenomena such as the word-formation processes, and its success in handling such phenomena must be independently confirmed.

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