

Verb-Particle Explorations

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English particle constructions, the lexicon, and the autonomy of syntax*

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1. The agenda

This paper examines particle constructions in English from the perspective of the following question, discussed at some length in Jackendoff (2002):

What parts of an utterance can be constructed online, and what parts must be stored in longterm memory?

In order to pursue this question, two important distinctions must be observed. First, it is important to distinguish the notion of *lexical item* from that of *grammatical word*. Lexical items are pieces of language stored in longterm memory (DiSciullo and Williams 1987 use the term *listeme*); grammatical words are grammatical units of a certain size, bigger than affixes and smaller than phrases. Since idioms like *kick the bucket*, *for the most part*, and *X_i isn't what pro_i's cracked up to be* must be stored, they are phrasal lexical items. (Drawing on a considerable concurring literature, Jackendoff 1997b shows that idioms cannot be treated as grammatical words and inserted/merged into syntax under an X⁰ node.)

The second important distinction is between *productive* and *semi-productive* combinatorial principles in grammar. This is most easily illustrated in morphology. Two productive combinations in English are the present participle (*be-ing*, *manufactur-ing*) and the expletive infix (*manu-fuckin-facturing*, *fan-fuckin-tastic*). Productive affixes combine with any word that meets their selectional restrictions (semantic, syntactic, and, in cases such as the expletive, phonological), subject to morphological blocking by competing irregulars. Speakers can combine them with words they have never heard before, know

exactly what they mean, and in the case of low-frequency examples have no idea whether they have actually heard them before. Thus these combinations need not be listed in the lexicon; they can be built up online by free combination, just like phrases. This requires, however, that we treat regular affixes as lexical items smaller than grammatical words; moreover, grammatical words formed by productive affixation need not be stored in the lexicon (though high-frequency ones may be).

Semiproductive combinations such as English irregular verbs (*rang*, *drew*, etc.) and *-al* nominals (*refusal*, *recital*) display different properties. The morphology may impose constraints or selectional restrictions, but within these constraints it is still necessary to list the combinations that exist (*ring/rang* but not **sting/stang*; *refusal* and *recital* but not **infusal* and **incital*). In the case of derivational morphology it is also necessary to know exactly what the derived forms mean: *refusal* is semantically regular but *recital* is not. Thus semiproductive combined forms must be listed in the lexicon, although their complexity may be reduced by some form of lexical redundancy rule that accounts for whatever degree of regularity exists.

The title of this paper speaks of particle constructions in the plural because English has a large variety of constructions with different argument structures and semantic structures, all of which share the well-known syntax of verb+particle. Some combinations of verb+particle are productive, some are semiproductive, and some are purely idiosyncratic; the patterns interweave in complex fashion. Most of the present paper will be devoted to documentation of this variety.

At the end we will finally be in a position to ask what the syntax of the verb-particle construction is. We will conclude that any internal structure posited for the VP in order to account for one of the constructions is immediately thrown into question by one of the other constructions. Hence the best solution is that *the VP is flat*. This conclusion is in opposition to many of the papers in the present volume, but it concurs with Culicover's (2000) arguments on other grounds for a flat VP in English.

More generally, Culicover (1999, 2000) has proposed the hypothesis of Concrete Minimalism, which supposes that the language learner posits the *minimum syntactic structure necessary to re-*

late sound and meaning. This approach contrasts with the Minimalist Program, which attempts to minimize the *derivational principles* relating sound and meaning, at the expense of proliferating syntactic structure and derivational steps. The evidence presented here, that a relatively simple syntactic structure serves to express a broad range of semantic configurations, can be seen as an argument for the virtues of Concrete Minimalism as well as for the traditional view of the autonomy of syntax.

2. Linguistics 101 facts about English particles

To review the basic facts: English verb particles form a class that is for the most part homophonous with prepositions. When the verb is intransitive, the particle can serve as the only complement.

- (1) *George grew up.*
The house blew up.
Fred freaked out.

When the verb is transitive, the particle can appear on either side of the object.

- (2) a. (Left-hand position)
Pat put out the garbage.
Bill blew up the house.
Cathy brought in the cat.
The explosion freaked out Fred.
- b. (Right-hand position)
Pat put the garbage out.
Bill blew the house up.
Cathy brought the cat in.
The explosion freaked Fred out.

The left-hand position of the particle looks superficially like a preposition whose object is the following NP. However, it is easy to show

that the particle and NP do not form a constituent. The standard contrasts are illustrated in (3).

- (3) a. PP complement:
Bill ran [_{PP} *up the street*].
 **Bill ran the street up*. [no inversion of P and NP]
It was up the street that Bill ran. [Cleft]
Up which street did Bill run? [Wh-movement with pied piping]
- b. Particle + NP:
Bill looked [_{Prt} *up*] [_{NP} *the answer*]
Bill looked the answer up. [inversion of Prt and NP]
 **It was up the answer that Bill looked*. [no cleft]
 **Up which answer did Bill look?* [no pied piping]

Traditional transformational grammar assumed that one of these positions is the underlying form and the other is derived by movement of the particle around the NP or the NP around the particle. Here we will be less concerned with whether one position is underlying than with the prior question of what the structures are in left-hand and right-hand position. But this will have to wait till Section 8.

Right-hand position is mandatory when the direct object is a non-stressed pronoun (4a); left-hand position is mandatory when the object is a sufficiently heavy NP (4b).

- (4) a. *Lila looked it up*.
 **Lila looked up it*.
- b. **Lila looked the answer to the question that was on everyone's mind up*.
Lila looked up the answer to the question that was on everyone's mind.

Some particles can bear a specifier; however this is possible only in right-hand position. (By the way, *back* and *together* are English particles that unlike most particles do not double as prepositions.)

- (5) a. *I'll look the answer **right up***.
 b. *Bill brought the wagon **right back***.
 c. *Fran put the model airplane **right together***.
 d. *Clem broke the handle **plumb off***. [dialectal]
 e. *Please shut the gas **completely off***.
 f. *We turned the situation **partway around***.
- (6) a. *I'll look (*right) up the answer*.
 b. *Bill brought (*right) back the wagon*.
 c. *Fran put (*right) together the model airplane*.
 d. *Clem broke (*plumb) off the handle*.
 e. *Please shut (*completely) off the gas*.
 f. *We turned (*partway) around the situation*.

(5e) and (5f) are a bit tricky, since we also have (7a), with the particle and specifier in the opposite order, and (7b), where the particle is in left-hand position, leaving the specifier behind.

- (7) a. *She shut the gas off completely*.
He turned the situation around partway.
- b. *She shut off the gas completely*.
He turned around the situation partway.

Hence *completely* and *partway* need not form a constituent with the particle. However, examples like (8a) show that the specifier plus particle in (5e) and (5f) may form a constituent: they can be stranded together by ellipsis. By contrast, a particle followed by a specifier cannot be stranded (8b).

- (8) a. *She shut the gas completely off, not partly off*.
He turned the situation partway around, not totally around.
- b. **She shut the gas off completely, not off partly*.
 **He turned the situation around partway, not around completely*.

Ordinary manner adverbs substituting for *completely* and *partly* do not form a constituent with the particle:

- (9) *He shut the gas slowly off* (*, not *quickly off*).
He turned the situation laboriously around (*, not *easily around*).

The particle must precede any PP complements.¹

- (10) a. *Jill grew up into a strong woman.*
Please look out for Harry.
Sim ran away to the city.
The secretary sent a schedule out to the stockholders.
 b. **Jill grew into a strong woman up.*
 **Please look for Harry out.*
 **Sim ran to the city away.*
 **The secretary sent a schedule to the stockholders out.*

The string *Prt+PP* in (10a) requires special care, as under some circumstances it forms a constituent. We discuss this problem in note 4.

A particle is sometimes possible in the complement of nominalized verbs.

- (11) *the rapid looking up of the information (is important)*
the prompt sending out of reports (is commendable)

The position of the particle in such nominals is always on the left side of the *of-NP*. Thus, although *of-NP* is the counterpart of the direct object in such nominals, it behaves as a PP with respect to particle position, just the way it looks.

- (12) **the rapid looking of the information up*
 **the prompt sending of the reports out*

Finally, particles can take part in word formation. There are many deverbal nouns of the form [_N V+Prt], for example *sendoff*, *lookup*, *lookout*, *throwaway*, *shut-in*, *put-on*, *showoff*. These seem always to

be transparently related to the corresponding verb-particle combination, either as action or result nominals. There are also some deverbal nouns of the form [_N Prt+V], for example *input*, *output*, *outlook*, *downdrift* (also *upbringing*). Some of these are semantically transparent, others are not.

3. Idiomatic verb-particle combinations

English has hundreds of idiomatic verb-particle combinations. Examples are *look up* ('search for and find'), *blow (NP) up*, *throw up* ('vomit'), *bring NP [e.g. a child] up*, *chew NP out*, *freak (NP) out*, *turn NP [e.g. a situation] around*, *turn NP on* [two senses], *turn NP [e.g. a paper, a criminal] in*, *clue NP in*, and so forth. Because of their (at least partly) noncompositional meanings, there is no choice but to list them in the lexicon as complete units.

However, recalling the discussion of Section 1, this does not mean that they have to be listed in the lexicon as *grammatical words*, say of the form [_V V Prt]. As a basis of comparison, consider the hundreds of English VP idioms such as *kick the bucket*, *spill the beans*, and *let the cat out of the bag*, for which no analysis as a grammatical word is feasible. There is no reason to hold verb-particle idioms to a higher standard. Moreover, lexical listing does not require the verb and particle to form a constituent or even be contiguous in underlying structure. As observed as long ago as Emonds 1972, there are many discontinuous VP idioms like *take NP to task*, *give NP the slip*, and *sell NP down the river*, where a freely chosen direct object intervenes between the two components of the idiom.² There is no reason not to let idiomatic verb-particle combinations be discontinuous as well. In short, idiomaticity is evidence for lexical status, but not for grammatical wordhood or even constituency. (I address the lexical insertion of discontinuous idioms in Jackendoff 1997b: Chapter 7)

One curious subclass of idiomatic verb-particle combinations appears to have become semiproductive in the past thirty years. In this class the "verb" need not be a verb or even an independently attested word. They all mean roughly 'go into an unusual mental state'; the particle is always *out*. The class is semiproductive because each

example (and its meaning) must be learned individually, hence lexically listed. (The judgments of relative recency are only my best guesses; and speakers may differ on their judgments of transitivity.)

- (13) a. Intransitives
[older examples] *pass out, black out, conk out, fink out, crap out, chicken out*; [more recent] *flake out, zonk out, zone out, bliss out, flip out, space out, phase out, crump out, veg out, chill out*³
- b. Transitives
[older] *knock NP out, bum NP out, fake NP out*; [more recent] *gross NP out, weird NP out, creep NP out*
- c. Intransitive or transitive
[older] *burn (NP) out, poop (NP) out, tucker (NP) out*; [more recent] *freak (NP) out, wig (NP) out, stress (NP) out, mellow (NP) out*

4. Directional particles

The best-known class of verb-particle combinations aside from idioms was discussed as early as Emonds (1972) and Jackendoff (1973), based in part on still earlier proposals by Klima (1965). Verbs such as *toss, take, put, and carry* select a directional (Path) PP as an argument, as seen in (14a). Such PPs can be replaced by a particle (14b), which, if it lacks a specifier, can appear before the direct object just like an idiomatic particle (14c). Of course a full PP complement cannot occur to the left of the object (14d), unless the direct object is heavy.

- (14) a. *Beth {tossed/took/put/carried} the food (right) {up the stairs/into the house}.*
b. *Beth {tossed/took/put/carried} the food (right) {up/in/away/back}.*
c. *Beth {tossed/took/put/carried} (*right) {up/in/away/back} the food.*
d. **Beth tossed/took/put/carried up the stairs the food.*

Here the particle satisfies one of the verb's argument positions. Any verb that selects a directional PP can take any directional particle instead, and the meaning is fully compositional. Hence such combinations are fully productive, and there is no need to list the verb-particle combinations in the lexicon. Rather the particles stand alone as lexical items.

Directional particles can appear in the locative inversion construction (15a), just like ordinary PPs (15b).

- (15) a. *Up marched the sergeant.*
Back hopped the frog.
Down went the soldiers.
Out goes the garbage.
- b. *Up the street marched the sergeant.*
Into the room hopped the frog.
Down the hole went the soldiers.
Out the window goes the garbage.

They can also appear in a curious exclamative sentence type, *PP with NP* (Jackendoff 1973), just like ordinary directional PPs.

- (16) a. *Off with their heads!*
Down with the king!
Out with this garbage!
- b. *Off the shelves with these books!*
Down the hatch with this wine!
Out the window with this garbage!

Of course idiomatic particles lack the appropriate directional meaning, so they cannot appear in locative inversion (17a). And they are meaningless without their verb, so they cannot appear in the verbless *with-exclamative* (17b).

- (17) a. **Up blew the building.*
b. **Up with your lunch!* [in the sense of 'throw up,' 'blow up,' etc.]

Klima concludes that the directional particles in (14)-(16) are intransitive prepositions, which explains why so many are homophonous with ordinary prepositions and why they occur in PP positions in (15)-(16). However, the grammar must still specify in addition (a) that PPs headed by a particle precede all other PPs in VP, and that (b) particles without specifiers may precede the direct object. In other words, even if particles are just a kind of preposition, the grammar must take account of their special properties.⁴

5. Aspectual particles

A less frequently distinguished use of particles is as aspectual markers. Consider the particle *up* in the following context.

- (18) a. *Elena drank the milk (completely) up.*
 b. *Ben glued the chair (right) up.*
 c. *Aaron wiped the counter (right) up.*
 d. *Hilary packed the suitcase (right) up.*

This means roughly 'V NP completely', i.e. *up* is not directional as it is in *toss the ball up*.⁵ Nor does *up* satisfy an argument position of the verb: it can be freely omitted. It is often even redundant, as in *close up the suitcase*. And it does not form an idiomatic combination with the verb: a huge number of verbs can cooccur with it, for instance *eat, drink, guzzle, close, finish, clean, wash, boil, fry, bake, fill, cover, pack*, and the meaning is fully predictable. Thus this aspectual *up* should be listed as an independent lexical item, free to combine with verbs that meet its selectional restrictions.

Despite its different semantic and argument structure properties, aspectual *up* is syntactically indistinguishable from other particles. It can occur in left-hand as well as right-hand position, but only without a specifier:

- (19) a. *Elena drank (*completely) up the milk.*
 b. *Ben glued (*right) up the chair.*
 c. *Aaron wiped (*right) up the counter.*
 d. *Hilary packed (*right) up the suitcase.*

An unstressed pronoun can occur only to the left of *up* (20a); a PP complement must follow *up* (20b).

- (20) a. *Elena drank it up/*drank up it.*
 b. *You dissolve the protein up in water/*in water up.*

Two more such aspectual particles are *away* (21a) and *on* (21b).

- (21) a. *Bill slept/waltzed/drank/talked/read/sneezed away.*
 b. *Bill ran/sang/talked/worked/thought/wrote on.*

These mean roughly *Bill kept on V-ing*; i.e. *away* is not directional as in *run away*, and *on* is definitely not locational. And again these are not arguments of the verb, since they can be omitted; and they are not idiomatic combinations with the verb, since any verb of a large semantic class can co-occur with them, and the meaning is fully compositional.

Away and *on* have the curious syntactic property of forbidding the verb from licensing a direct object.

- (22) **Dave drank scotch away/on.*
 **Dave danced waltzes away/on.*
 **Dave read newspapers away/on.*

Hence we cannot fully test their membership in the normal set of particles as we could with aspectual *up*. Moreover, aspectual *away* does not admit specifiers: **Bill slept/waltzed completely away* is bad, and *Bill slept/waltzed right away* is good only on the unrelated reading of *right away* as 'immediately'. On the other hand, aspectual *on* does admit *right* as a specifier: *Dave danced right on*.

Aspectual *away* is like particles in that it allows some prepositional complements of the verb to follow it (23a-c), though not all of them (23d). In particular, all "conative" *at*-PPs such as (23e) seem eminently acceptable. In fact some verbs such as *carve* are happy in the conative frame only if *away* is present (23f), a fact not noted in Levin's (1993) otherwise exhaustive compilation.

- (23) a. *Hilary talked away about her latest project.*
 b. *Miriam worked away on her manuscript.*
 c. *Sally was screaming away at me.*
 d. *Judah jumped away (*off the roof).⁶*
 e. *Billy bashed away at the piano.*
 f. *Simmy was carving *(away) at the roast.*

Aspectual *on* seems to admit a different subclass of PP complements. I see no pattern among the differences.

- (24) a. *Hilary talked on about her latest project.*
 b. *?Miriam worked on on her manuscript.*
 c. *?Sally was screaming on at me.*
 d. *Judah jumped on off the roof.*
 e. *?Billy bashed on at the piano.*
 f. **Simmy was carving on at the roast.*

Also like particles, aspectual *away* and *on* cannot come after a PP complement. This contrasts with *right away* ('immediately'), which is not a particle at all.

- (25) a. **Hilary talked about her latest project away/on.*
**Miriam worked on her manuscript away/on.*
 b. *Hilary talked about her latest project right away.*
Miriam worked on her manuscript right away.

Two more candidates for aspectual particles are *through* and *over*, though their behavior is somewhat more marginal.

- (26) a. *read/scan/skim the book through*
 b. *sing/play the aria through*
 c. *work/talk/think the problem through*
- (27) a. *cook the food over*
 b. *sing/play the aria over*
 c. *write/type the paper over*
 d. *do the problem over*

Like aspectual *up*, *away*, and *on*, the particles *through* and *over* in (26)-(27) do not satisfy an argument position of the verb; rather they too contribute an aspectual sense, often paraphrased by some sort of adjunct PP. *Read/scan the book through* means 'read/scan the book from beginning to end'; *cook the food over* means 'cook the food again' or 're-cook the food'.

Aspectual *through* and *over* have the opposite restriction from aspectual *away*: they require the VP to be transitive.

- (28) **Bill read/scanned through.⁷*
**Let's cook/sing over.*

These particles are a good deal less comfortable in left-hand position than is *up*.

- (29) a. *read/skim through the book*
 b. *sing/play through the aria*
 c. *talk/work through the problem*
- (30) a. **cook over the food*
 b. **sing/play over the aria*
 c. **write/type over the paper*
 d. *do over the problem*

In (29a) and (29b) we have a strong sense that *through NP* is a phrase. The tests for phrasehood such as *Through which book did she read?* confirm this sense. I can find no evidence that *through* also exists separately as a particle here. (29c) on the other hand yields the opposite result: *??Through which problem did she work?* So *through* seems to be a genuine particle here. Similarly, (30a-c) show no possibility for the particle; but **Over which problem did she do?* is terrible, so (30d) does seem to contain the particle.

In the two cases where left-hand position is acceptable, *through* and *over* exclude a specifier and a pronoun object, just like other particles.

- (31) a. *talk the problem completely through*
 b. **talk completely through the problem*
 c. **talk through it [* on this reading]*
 d. *do the problem completely over*
 e. **do completely over the problem*
 f. **do over it*

Next consider the range of verbs possible with aspectual particles. As observed above, *up*, *away*, and *on* seem altogether productive within the selectional restrictions of each particular particle.⁸ This means that the possible combinations should not be listed in the lexicon: *polka on*, *epoxy NP up*, and many examples above are hardly memorized fixed expressions. They should be able to arise in syntax from a process of free combination parallel to the licensing of free aspectual adjuncts such as *from one end to the other*, *some more*, and *again*.

However, examples with *through* and *over* seem more limited, and some combinations such as *see NP [e.g. the process] through* are idiomatic. This suggests that combinations with aspectual *through* and *over* may be semiproductive, along the lines of the examples with *out* in (13), hence lexically listed. Moreover, some semantically transparent combinations, for instance *finish up*, might be listed anyway in the lexicon as relatively high-frequency fixed expressions, sort of like *happy birthday*.

What we find in the aspectual particles, then, is a complex mix of productive and semiproductive combinations, and in some cases further constraints on the structure of the VP. These particles differ from the idiomatic and directional particles in that they function semantically like aspectual modifiers, rather than like arguments of the verb. Nevertheless, their syntax is otherwise indistinguishable from that of the other particles.

6. The time-away construction

A fourth use of English particles occurs in a construction exemplified in (32), which Jackendoff (1997a) calls the "time-away construction".

- (32) a. *Bill slept the afternoon away.*
 b. *We're twistin' the night away.*
 c. *Pat programmed three whole weeks away.*

These examples contain an intransitive verb, followed by an apparently unlicensed NP expressing a period of time, plus the particle *away*. As seen from (32), a wide range of verbs is possible in the construction – provided they have an intransitive subcategorization. No postverbal NP may be present other than the time phrase (33), nor may the verb be one that requires a direct object (34).

- (33) a. *Frank drank the night away.*
**Frank drank scotch the night away.*
 b. *Ann read the morning away.*
**Ann read the newspaper the morning away.*
- (34) a. **Frank devoured the night away. (*Frank devoured)*
 b. **Ann perused the morning away. (*Ann perused)*

The particle *away* behaves just like those in other verb-particle constructions, in that it can occur to the left of the NP, especially if the NP is a little longer (35a),(35b), and it must occur to the right of a definite pronoun (35c).

- (35) a. *Stan drank away the entire afternoon of his 50th birthday.*
 b. *Stan fished away all of Tuesday morning.*
 c. *What happened to the morning? I must have slept it away/*I must have slept away it.*

The particle can also have a specifier, but only in right-hand position:

- (36) a. *Dan slept the long afternoon entirely away.*
 b. **Dan slept entirely away the long afternoon.*

Away is the only particle possible in this construction. On general semantic grounds, one might perhaps expect something like **sleep the afternoon up*, parallel to *drink the milk up*, but it is impossible.

To show that this construction has the syntax of ordinary transitive verb-particle combinations, it is important to establish that even though the time NP is not licensed by the verb, it is nonetheless in direct object position. In particular, it must be distinguished from NP time adjuncts such as those in (37).

- (37) *Fred hasn't slept this year.*
Kate is leaving Monday.

To that end, notice that the time NP in the time-away construction can undergo passive, given the right contextualization (though I have no account of why such contextualization is necessary) – even with the intransitive verb *sleep* (38). Parallel passives are of course impossible with NP time adjuncts (39).

- (38) a. *In the course of the summer, many happy evenings were drunk away by the students before they finally realized there was serious work to be done.*
 b. *The evening had been nearly slept away, when I suddenly awoke with a start.*
- (39) a. **This year hasn't been slept by Kate.*
 b. **Monday is being left by Bill.*

Similarly, time NPs in the time-away construction can undergo tough-movement (40a), whereas NP time adjuncts cannot (40b).

- (40) a. *A morning like this is hard for even me to sleep away.*
 b. **A morning like this is hard for even me to sleep.*

Conversely, contrasted time adjuncts can be stranded by VP-ellipsis (41a), but, as is typical of VP complements, time NPs in the time-away construction cannot (41b).

- (41) a. *Bill read all of Monday afternoon, and Sally did so most of Tuesday morning.*

- b. **Bill (blissfully) read away all of Monday afternoon, and Sally did so most of Tuesday morning.*

The time phrases in the time-away construction can be followed but not preceded by manner adverbs (42a) – just like ordinary direct objects (42b) and unlike NP time adjuncts (42c).

- (42) a. *Sue drank Tuesday night calmly away.*
**Sue drank calmly Tuesday night away.*
 b. *Sue read the paper calmly.*
**Sue read calmly the paper.*
 c. *Sue drank all Tuesday night calmly.*
Sue drank calmly all Tuesday night.

Finally, the time-away construction excludes the verb having other NP complements (33), but the time adjuncts do not (43).

- (43) a. *Frank drank (scotch) all night.*
 b. *Ann read (the newspaper) Tuesday morning.*

All this evidence points to the time expression in the time-away construction being in direct object position; as it were, it usurps this position so that the verb itself cannot license an NP there. Moreover, *away* is a particle, indistinguishable in syntax from an ordinary verb particle.

Turning to the semantics of this construction, it can be paraphrased to a first approximation by a sentence in which the time expression is within a delimiting *for*-phrase.

- (44) *Bill slept the afternoon away ≈ Bill slept for the (whole) afternoon.*

A more subtle semantic aspect of the construction is that the subject is in some sense understood as using the time, or even better, heedlessly using the time up. Some of this flavor appears in the second-approximation paraphrases in (45). The verbs in (45b) and (45c) even duplicate the syntax of the construction: the verbs *fritter*, *while*, and

the relevant sense of *piss* require the particle *away*. These three combinations are of course idiomatic, and therefore must be lexically listed. In fact *fritter* and *while* appear only in combination with *away*, so have a status similar to the cranberry morphs *zonk*, *veg*, and *crump* in (13).

- (45) a. *Bill spent/wasted the afternoon sleeping.*
 b. *Bill frittered/pissed the evening away sleeping.*
 c. *I could while away the hours conferring with the flowers.*

Further semantic subtleties of the construction are discussed in Jackendoff (1997a). In brief, the construction has a complex and rich semantics, approached but not exactly captured by any paraphrase.

Again we can ask what is listed in the lexicon. Given that the choices of verb and time NP are completely free within the construction's selectional restrictions, Jackendoff (1997a) proposes that this construction is a lexically listed transitive VP with an open verb and object but a specified particle, as in (46a); the semantic structure of this construction is roughly (46b).

- (46) a. [_{VP} V NP [_{PRT} *away*]]
 b. 'waste [_{TIME} NP] *heedlessly V-ing*'

What is unusual about this structure-to-meaning pairing is that the verb, although the syntactic head of the VP, is not the semantic head of the meaning. Rather it is embedded as a manner modifier. Moreover, the NP is licensed by the construction rather than by the verb; that is, it is the direct object of the VP but not of the verb. Such a solution is unusual in standard generative grammar, but it is quite natural within a framework such as Construction Grammar (Goldberg 1995; see also Jackendoff 1990b: Chapter 11).

The main point for our purposes, though, is that despite the differences in the way the particle combines into the meaning of the VP as a whole, and despite the unusual argument structure licensing conditions, this construction has syntactic properties virtually identical to other verb+particle constructions in English.

7. Idioms consisting of particles plus something other than the verb

(13) illustrated a semiproductive family of verb-particle idioms with *out*, much of it of recent provenance. Another apparently recent class involving *out* is totally productive. For example, if I have been knitting or programming for the last six hours straight, I may say (47a). I may conceivably also say (47b), an idiomatic use of the resultative with a so-called *fake reflexive*.

- (47) a. *I'm (all) knitted/programmed out.*
 b. *I('ve) knitted/programmed myself out.*

But this odd combination is not confined to verbs. If I've drunk 14 cups of coffee in the course of a morning I might utter (48a), and if I've watched 14 Edward G. Robinson movies in a row I might even utter (48b).

- (48) a. *I'm (all) coffeed out.*
 b. *I'm Edward G. Robinsoned out.*

I don't think the counterparts of (47b) are acceptable. Thus the productive extension of this use of *out* to nouns is confined to past participles.

What would seem to be stored in the lexicon for this case is again an idiomatic construction, roughly of syntactic form (49a) and meaning (49b).

- (49) a. [_{AP} V/N + -d [_{PRT} *out*]]
 b. 'worn out from too much V-ing/too much N'

The model for this construction is rather clear: it is an extension of *tired out*, *worn out*, *burned out*, and so forth. What I find most striking about it is its productivity: one does not need to learn which verbs and nouns can be substituted into it. So the question is: how does the language learner distinguish between this case and the altogether similar class in (13), which remains only semiproductive? The

parallel to Pinker's (1999) word/rule dichotomy ought to be obvious; I leave the resolution for future research.

A final type of idiomatic particle combination is illustrated in (50).

- (50) a. *Harold sang/whistled/dreamt/jogged his heart out.*
 b. *Richard ran/programmed/cooked/yelled his head/butt off.*
 c. *Kelly wrote/slept/drew/edited up a storm.*

Here the construction is strictly fixed in form, so we cannot do any of the usual syntactic tests for particles. In particular, the order of particle and NP cannot be reversed:

- (51) a. **Harold sang out his heart.*
 b. **Richard cooked off his head.* [ok only with radically different meaning]
 c. **Kelly edited a storm up.*

Like the aspectual particles *away* and *on* and the time-*away* construction, these constructions exclude normal NP objects:

- (52) a. **Harold sang arias his heart out.*
 b. **Richard cooked lentils his head off.*
 c. **Kelly wrote letters up a storm.*

And manner adverbs cannot occur before the NP:

- (53) a. **Harold sang happily his heart out.*
 b. **Richard cooked busily his butt off.*
 c. **Kelly slept peacefully up a storm.*
 **Kelly slept up peacefully a storm.*

Thus the NPs in (50), like those in previous constructions, seem to occupy direct object position.

Aside from the intransitivity restriction, the choice of verb seems totally open, whereas by contrast, the choice of NP is totally fixed. This suggests that we are dealing with idioms of the structure (54):

- (54) a. [VP V [NP pro's heart] [Prt out]]
 b. [VP V [NP pro's head] [Prt off]]
 c. [VP V [Prt up] [NP a storm]]

All of these constructions have an adverbial sort of meaning, approximately paraphrased by 'to excess', though each of them has additional overtones.

These cases thus are a mixture of the phenomena we have observed previously. Like aspectual particles, they are not arguments of the verb, and they have a sort of adverbial meaning. But like the time-*away* construction, they are syntactically complex, being a VP with a specified complement but a free choice of V. In particular, they are not syntactic adjuncts.

8. The syntactic autonomy of the particle construction

To summarize: we have enumerated the following classes of verb-particle constructions.

- (55) a. Verb-particle idioms:
 V and Prt listed, potentially discontinuously
 Includes semiproductive subclasses, such as *zone out* type, where *verb* may be of any category, even a cranberry morph
- b. Directional particles:
 Prt is an independent lexical item that combines productively with directional verbs, in alternation with directional PPs
- c. Aspectual particles:
 i. *up*, *away*, and *on* are independent lexical items that combine productively with verbs; meaning parallels aspectual adverbials
 ii. *V over* and *V through* are possibly semiproductive combinations listed individually
- d. Time-*away* construction:
 Prt is part of a lexically listed VP that takes a free verb and

a free time expression as arguments

Includes subclass of idioms with cranberry morphs such as *fritter* and *while*

e. V/N-d out construction:

Prt is part of a lexically listed A(?)P that takes a free verb or noun as argument

f. *his heart out* family of constructions:

NP and Prt listed together as a lexical VP that takes a free choice of verb as argument; meaning parallels degree adverbials

In each case except some of the aspectual particles and the *his heart out* family, the particle can occur on either side of an object NP, but must occur before any full PP. An object pronoun is possible only with the particle in right-hand position. When a specifier is possible, it occurs only in right-hand position. Finally, these varieties of particles are in complementary distribution; a single VP cannot have more than one of them.

Thus insofar as the syntactic tests permit us to tell, the particles in all of these constructions have identical syntax. This constitutes the classical sort of evidence for the autonomy of syntax: English assigns particular syntactic positions and syntactic properties to particles, no matter how their presence is licensed.

Let us consider the consequences for the structure of English VPs that contain particles. (56) lists the relevant questions.

- (56) a. Do the verb and the particle together form a lexical item?
 b. Do the verb and the particle form a constituent that excludes the direct object?
 c. Do Prt and NP form a constituent that excludes the verb?

Beginning with (56a): The verb and the particle together form a lexical item only in verb-particle idioms and other semiproductive combinations such as (55c.ii). In the *his heart out* family, the combination of the particle and the NP is lexically listed. Otherwise, the particle is a lexical item on its own, in some cases carrying some extra syntactic structure with it.

Turning to (56b): When the particle is in left-hand position, it is sometimes taken to be “incorporated” into the verb in a structure [v V Prt] (e.g. Toivonen, this volume). The main argument for such a structure is that in this position the particle cannot project specifiers and complements; this is what would be expected if it were a quasi-morphological affix.

However, such a structure also usually carries the expectation that the verb and particle form a semantic unit. This expectation is confirmed for idiomatic verb-particle combinations, but not for aspectual particles and especially the time-*away* and *up a storm* constructions. Thus, although [v V Prt] may be the correct structure on syntactic grounds, it requires one to abandon the semantic implications traditionally associated with it.

When the particle is in right-hand position, it obviously does not form a constituent with the verb on the surface. Do they form a constituent at some more underlying level? In the case of idiomatic verb-particle combinations there might be some reason to start with the particle at the left and move it around the NP (or move the NP around it), since the verb and particle together form a lexically listed semantic unit. In no other case is there any reason for ever needing them adjacent. But even in the case of idiomatic combinations there is little argument for underlying contiguity: as pointed out in Section 3, movement seems totally unmotivated for the similar case of discontinuous V+PP idioms. A better solution is to work out a way for lexical insertion to countenance discontinuous idioms (Jackendoff 1997b: Chapter 7).

One might propose to make the verb and right-hand particle a constituent by putting them in an underlying Larsonian shell, as in (57); the verb would then move to the left of the object by head movement. This proposal would of course generalize to V-PP idioms.

- (57) [v e [v_P NP [v V Prt/PP]]]

But then consider another kind of VP idiom, for instance *take [unfair advantage] [of NP]*, *make [much] [of NP]*, *make [a play] for NP*, where the indicated constituency can be tested by the passive: *unfair advantage was taken of NP* vs. **unfair advantage of NP was taken*.

If the verb of these idioms started in a Larsonian shell with the PP, it would not form a constituent with the other component of the idiom in underlying structure. In addition, the idiomatic particle construction *his heart out* would then start its life discontinuous. So overall this solution confers no advantage.

Finally, consider question (56c), the possible constituency of the particle and the NP. If a particle in *left-hand* position formed a constituent with the object, it would be essentially indistinguishable from a PP, making the facts of Section 2 difficult to account for. What about a particle in *right-hand* position? A view championed by den Dikken (1995), and adopted in several papers in this volume, is that a particle in right-hand position is the predicate of a small clause (SC) whose "subject" is the NP, as in (58).

(58) [_{VP} *push* [_{SC} *Fred down*]]

The argument is that (a) SCs are the canonical expression of predication, (b) *down* is predicated of *Fred* (i.e. the consequence of (58) is that *Fred is down*), so therefore (c) they must form a SC. While this reasoning is plausible in the case of (58), it is less so in the following examples, where the relation between the NP and the particle is not predication:

- (59) a. Idiom: *You're putting me on.* [**I'm on.*]
 b. Directional particle: *He pushed the truck around/along.* [**The truck was around/along.*]
 c. Aspectual particle: *She fixed the sink up.* [**The sink is up.*]
 d. Time-away: *He knitted three hours away.* [**Three hours were away.*]
 e. *His heart out.* *They sang their butts off.* [Nothing is (literally) predicated of their butts.]

Moreover, most combinations of NP plus particle never occur anywhere but after a verb; they don't move around. Thus there is no independent evidence for their constituency, of the sort we have with NPs, PPs, and CPs. By contrast, there exists a genuine small clause construction in English that does occur in a variety of positions:

- (60) a. Subject position:
 [*Bill in the hospital*] *would be a terrible thing.*
 [*Everyone drunk at once*] *would be amazing.*
 b. Object position:
I can't imagine [*Bill in the hospital/everyone drunk at once*]. (Note anaphora: Can you imagine it?)
 c. Object of absolutive *without*:
Without [*Bill in the hospital/everyone drunk at once*], *we'll never escape suspicion.*

A few particles can be shoehorned into this construction, for instance *Fred down*, *Bill out*, *everyone away*. But, unlike the particles in (59), these are particles that can occur independently with *be*, and hence function semantically as genuine predicates. Thus in general there is no argument based on predication for NP + Prt being a small clause.

One overarching reason for wanting the particle to form a constituent with either the verb or the NP is the hypothesis - now nearly a dogma in some circles - that syntactic trees are exclusively binary branching (Kayne 1994). This hypothesis would preclude a triply-branching VP [_{VP} V NP Prt]. However, there are two reasons to doubt this hypothesis, which I can only sketch here.

It has not been demonstrated that requiring binary branching genuinely makes the grammar any simpler. To be sure, it eliminates linear order from c-command, allegedly simplifying the theory of anaphora. But this doesn't enable us to eliminate linear order altogether from UG or even from the theory of anaphora: linear order is required in any event to state conditions for discourse (intersentential) anaphora. Furthermore, linear order is obviously available in the primary linguistic input, so it is not clear in the long run that eliminating it from UG confers much advantage for the learner.

Culicover (2000) examines all extant arguments for branching structure in VP based on anaphora, ellipsis, gapping, and the like. He shows that they all ultimately lead to contradictory claims of constituency; the phenomena in question are really to be accounted for in terms of conceptual structure, not syntax. Thus there is no need for exclusively binary branching in the VP, and in fact it leads to unnecessary complications.

The upshot is that the alleged need for binary branching vanishes, and hence cannot motivate a search for internal structure in VPs containing particles.

The arguments of this section have been exceedingly brief, and I have certainly not exhausted all the evidence in the literature concerning constituency in particle constructions.⁹ My goal here has been primarily to pose a challenge: careful description reveals a wide range of English particle constructions that are syntactically uniform, despite vast differences in semantics, argument structure, and lexical status. Any proposal concerning syntactic structure must apply equally to them all. The null hypothesis is the lowest common denominator: a flat VP.

Notes

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1. We can see that the PPs in question are complements rather than adjuncts by applying the standard *do-so* test. Adjuncts can be stranded by *do so* (ia), but complements cannot (ib).

- (i) a. *John ate his lunch on Thursday, and Fred did so on Friday.*
 b. **John put a banana on the table, and Fred did so on the chair.*

The examples in (10) follow the pattern of complements:

- (ii) a. **Jill grew up into a strong woman, and Jerry did so into a tall man.*
 b. *??I looked out for Harry, and you did so for Sam.*
 c. **Sam ran away to the city, and Aaron did so to the country.*
 d. **The secretary sent a schedule out to the stockholders, and the boss did so to the administration.*

2. See Section 8 for discussion of the possibility that *take* and *to task* do form a constituent in underlying structure, in a Larsonian shell

3. *Veg* and *chill* have still more recently become possible without *out*, in my children's dialect but not mine.

4. Directional particles can be followed by a PP in the locative inversion and *with-exclamative* constructions, indicating that the particle forms a constituent with the PP.

- (i) a. *Back to Hollywood comes that star of stage and screen, Groucho Marx!*
Up to the soldiers marched the sergeant.
Out from the darkness crept a lizard.
 b. *Off to the police station with these miscreants!*
Up against the wall with those guys!
Down into the hole with the jewels!

In such larger constructions, the P might be head and the particle its specifier, or the particle might be the head and the PP its complement or adjunct. There is evidence that both these structures occur.

First consider ordinary preposed locatives with stative verbs. A number of particles occur along with locative expressions in this construction (ii). But they cannot occur alone here, as they can in (15a) and (16a).

- (ii) *Off/over *(in that room), John usually sits for lunch.*
*Down/back *(under the ocean), the temperature is pretty constant.*
*Up/out *(on Newbury Street), there are lots of great stores.*
*Back *(in 1982), we didn't know a lot about HIV.*
*Off *(in the future), we'll be able to understand these problems.*

This suggests that selection is based on the prepositions in (ii), hence that the particles are specifiers.

Other cases seem to force a different structure. For instance, the directional prepositions *from* and *to* are somewhat uncomfortable in the locative inversion construction, unless preceded by a particle.

- (iii) *Back!/?Ø from Hollywood comes that star of stage and screen, Groucho!*
Up!/?Ø to the soldiers marched the sergeant.
Down/out!/?Ø from/to the darkness crept the lizard.

This suggests that the particles rather than the prepositions in (iii) are doing the work of licensing locative inversion; hence on standard assumptions the particle is the head.

5. Note that (18c) is different from *Aaron wiped the food up*, where *up* alternates with a directional PP as in *Aaron wiped the food off the window*. *Up* in (18c) does not alternate with a PP, and *up* is just a gratuitous insertion. For discussion of this alternation with *wipe*, see Levin (1993: Section 2.3.3).
6. Without *off the roof*, this has, in addition to the desired iterative reading, an inceptive reading along the lines of 'gather up one's nerve and V', as in *Jump away!*. I haven't looked at this reading of *away*.
7. This is possibly good on another reading, an ellipsis from *Bill scanned [through the book]*.
8. Peter Culicover has pointed out (p.c.) that the productivity of aspectual particles seems however to be constrained by a phonological condition: the verb must be

(approximately) monosyllabic. For example, we get *read the paper through/over* and *read on* but not **peruse the paper through/over* and **peruse on*, we get *fix my lawnmower up* but not **repair my lawnmower up*. This restriction appears to be related to the better-known restriction on “dative-shift” verbs that permits *give Bill the money* but not **donate the library some books*; it is also found in idiomatic verb-particle combinations. However, it does not seem to apply to the constructions to be discussed in the next section: see (32c) for instance.

9. In particular, various papers in the present volume offer interesting arguments for constituency based on phenomena such as Gapping and extraction. There is no room to address them here.