

Particle verbs and argument structure

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Abstract

The article describes the data and literature pertaining to the argument-structural behaviour of verb-particle combinations in Germanic languages. This topic is of interest for theories of complex verb formation and of verbal and prepositional argument structure. While serving as an introductory text for readers unfamiliar with particle verbs, the article should also interest particle specialists because it highlights problems with existing theories and provides a broader taxonomy of the argument-structural effects of particles and their interactions with other arguments than has hitherto been offered.

1 Introduction

All Germanic languages have particle verbs, structures with verbs and complementless prepositions ('particles') such as the capitalised items in (1)¹. Particle verbs are an important testing ground for assumptions about the syntax of VP, and thus frequently gate-crash discussions of other phenomena (e.g. Johnson 1991, Koenenman 2006). Another reason to study particles is their challenge to standard assumptions about (morphologically) complex heads. For instance, (1e) shows that particles, unlike other items, can invert with verbs around subjects in English quotative inversion, (cf. Toivonen 2003:175f), perhaps suggesting that *shout out* is a complex head. Unless workable alternatives emerge, this invites us to rethink the popular Right-Hand Head Rule, and to ask whether the complex heads begin life as such (in which case (1c) supports the unpopular excorporation device), or are formed by incorporation/reanalysis from a phrasal configuration (making us ask why modifiers and complements of P cannot be stranded: **put in_i books [pp (back) t_i boxes]*).

- (1) a. Agnes chatted *(UP) Magnus
b. Vladimir played (*the piano) ON
c. Nelly tipped {the water/the bucket} OUT
d. Marion fixed UP the bike
e. 'Get lost!', shouted {OUT/*loudly/*at him} Marmaduke

Particle verbs also display interesting argument-structural phenomena, including objects not selected by the verb, cf. (1a), incompatibility with arguments otherwise selected by the verb, cf. (1b), and realisation of either logical argument of the prepositional relation as object, cf. (1c). An important question is whether direct objects are arguments of particles, verbs or both. Answers to this question can influence syntactic and semantic assumptions, as we can see from the following sample of possible assumptions regarding (1d) and inferences based on them:

ASSUMPTION A: *the bike* is an argument of the particle, not the verb.

Semantic inference: The particle predicates over an entity or otherwise refers to an entity in its semantic representation.

¹ Equating 'particle' with 'complementless preposition' admittedly oversimplifies because some intransitive prepositions pattern with certain non-prepositions and differently from other intransitive prepositions according to certain tests like pre-object positioning in English, cf. (i). (For relevant discussions, see Cappelle (2005) on English, Toivonen (2003:246) on Swedish, and Stiebels & Wunderlich (1994) and Zeller (2001b) on German.) Despite these complications, my definition of 'particle' is expedient here, since I ignore (unsystematic) cases like (ib) and since tests like (i) exclude certain items (*around*, *through*, *over*) which pattern with normal particles argument-structurally.

- (i) a. push {in/up/*inside/*through} the box {in/up/inside/through}
b. let slip_v a chance, let go_v the rope, cut short_A the meeting

Syntactic inference: One of the following analyses is possible:

- (i) *the bike* enters the syntax in an (extended) projection of *up*, e.g. a small clause.
- (ii) *fix up* is a complex predicate inheriting the argument of *up*.

ASSUMPTION B: *the bike* is an argument of the verb, not the particle.

Possible semantic inference: *up* is a pure aspectual operator whose semantics makes no (direct) mention of an entity.

Syntactic inference: *the bike* has no business in *up*'s (extended) projection.

Reasoning in the opposite direction (i.e. letting semantic or syntactic assumptions guide argument-structural assumptions) is common and legitimate. However, deriving syntactic or semantic assumptions from argument-structural assumptions it is not necessarily putting the horse after the cart. Researchers seeing no decisive evidence for a particular semantic or syntactic analysis of (1d) might for instance ask whether the ability of *up* to license unselected objects in (1a) and the inability of *play* to project its normal object in (1b) might tip the scales in favour of Assumption A, thus supporting the semantic and syntactic inferences compatible with it. My mission with this example is not to recommend Assumption A, but to suggest that purely argument-structural observations may (dis)confirm syntactic or semantic assumptions, and that theories of the argument structure of particle verbs (and by implication of their syntax and semantics) are guesswork unless informed by a representative typology of the argument-structural classes of particle verbs.

This overview of (research on) particles and argument structure aims to help researchers (including those already versed in particle lore) to eliminate such guesswork by describing a near-exhaustive taxonomy of relevant phenomena and approaches to them. No single study in the copious particle literature offers this, relevant discussions being scattered throughout various sources, and sometimes guilty of the guesswork problem just mentioned. The lack of thorough, systematic treatments of argument structure in the particle literature forces this study to be mainly organised by empirical phenomena rather than by theories.

Various matters arguably relevant here fall outside the compass of this study, including neighbouring constructions (e.g. adjectival resultatives, prepositional verbs, prefix verbs), particle verbs with denominal stems arguably realising a verbal argument (*fence in*; see Stiebels 1997), and argument inheritance in nominalised particle verbs (say *the stuffer-upper of the concert* vs. *the stuffup* (**of the concert*)); see Miller (2006). Argument-structurally irrelevant aspects of particle verbs are not reviewed here. See e.g. Dehé et al. (2002) or Haiden 2006 for overviews of (approaches to) the syntax of particle verbs, and on their semantics, see Blom (2005), Cappelle (2005), Dehé et al. (2002), Stiebels (1996), Zeller (2001b). Another consequence of space limitations is that phenomena assumed to be present in all Germanic languages are represented mainly with English examples.

2 Argument-structural classes of particle verbs

Since particles are (modulo footnote 1) prepositional, it is convenient to use labels for the thematic roles of the arguments of prepositions. Like e.g. Svenonius (2003), I will refer to the argument whose location is indicated as the **Figure** (other terms being *theme*, *trajector*, *locatum*, *located object*) and to the argument with reference to which the Figure is located (and typically surfacing as complement of transitive prepositions) as the **Ground** (=reference object, landmark, location, *relatum*, *source/goal*). (2) illustrates.

- (2) I put the cat_{Figure} on the table_{Ground}; We_{Figure} went into the house_{Ground}

2.1 Resultative particles

It is uncontroversial that certain particles are **resultative**, being result predicates on the **direct argument** (=direct object, unaccusative subject²). Clear instances of this include spatial constructions like (3). Here the direct argument is a Figure, and there is no overt Ground. (3a-c) have an implicit Ground (indicated in brackets) in their semantic representation (or their syntax, Svenonius 1996). (3d) has either the implicit Ground indicated or arguably no Ground.

- | | | |
|-----|----------------------------------|---------------------------------------|
| (3) | a. Basil put his false teeth in. | [in his mouth] |
| | b. We voted the government out. | [out of office/power/parliament etc.] |
| | c. A button tore off. | [off a garment] |
| | d. They pushed the lever up. | [to a high(er) position] |

As the possibility of replacing the particles in (3) with the bracketed PPs suggests, spatial particles and directional PPs appear in similar argument-structural configurations, notably configurations like (3b,c) involving **unselected** direct arguments, i.e. direct arguments which the verb cannot select in contexts without particles/PPs: **we voted the government*, **the button tore*³. This argument-structural behaviour is found with various species of resultative constructions, and is a hallmark of a parameterised phenomenon often called **lexical subordination** or **conflation**, in which a structure expressing (causation of) a change of state/position contains a single lexical verb indicating a means or manner; see e.g. Spencer/Zaretskaya (1998), McIntyre (2004), Zubizarreta and Oh (to appear) and the references they cite.

Resultative particles need not involve literal motion. Most authors would treat *turn on the radio* and *put out the fire* as resultative, a sufficient (if not necessary, see section 3) condition for which is copula predication: *the radio is on*, *the fire is out*. Various writers (e.g. Cappelle 2005, Lindner 1983, McIntyre 2002, 2003, Stiebels 1996, Svenonius 1994:ch. 3) posit resultative meanings for non-spatial particle verbs whose resultative character is not immediately obvious. Extreme cases are the claims in Lindner (1983: 80-87, 125-138) that *out/up* in (4) are metaphorically motivated result predicates expressing cognitive availability, or McIntyre (2002, 2003) that *up* in (5) is a bleached result predicate expressing a maximal effect on an entity. (The modifiers in (5) arguably suggest that *up* is not meaningless or an aspectual operator.) Such resultative analyses are one way of making sense of the unselected objects in (4) (e.g. *work/point *(out) the answer*).

- | | |
|-----|--|
| (4) | {search/seek/point/pick/find/work/tease} out the answer, the truth came out; |
| | {dream/think/bring/summon/call/play/look} up the argument |
| (5) | {roll/fold/fill/load/pump} it {right/back} up, it {curled/cleared} right up |

2.2 Ground promotion

(6a) is a normal resultative particle structure, but (6b) illustrates **Ground promotion**: suppression of the Figure and promotion of the Ground to direct argument, reminding us of P-incorporation with prefixes (*overlay/inlay it with gold*; e.g. Miller 1993:ch. 5, Stiebels 1996: sect. 6.2) and passives or anticausative unaccusatives in the verbal kingdom. Further Ground-promoting particles appear in (7). (The applicability of Ground promotion to a particle use is not always clear. It is for instance applicable to (7d) only if my back is conceptualised as having sun cream rubbed *into* it.) See Blom (2005:189-192), Cappelle (2005: sect. 7.6), McIntyre (2003, 2004:537-539) and Svenonius (2003) for more data.

² Readers objecting to the Unaccusative Hypothesis can understand ‘direct argument’ as shorthand for ‘direct object or Figure NP in an intransitive context’.

³ The existence of unselected subjects in unaccusative constructions like (3c) is not common knowledge; see McIntyre (2004:544) for more examples.

- (6) a. I poured/tipped/emptied the water out.
 b. I poured/tipped/emptied the bucket out.
- (7) a. squeeze the rag out; fill in the form (with the info); run someone through (with a sword); strike a word through; strip the bed off, wipe/rinse the plate off
 b. Er hat den Tee (mit heißem Wasser) aufgegossen. [German]
 he has the tea (with hot water) on-poured
 'He poured hot water on the tea.'
 c. Der Behälter ist ausgelaufen. [German]
 the container^{Nom.} is out.run
 'The container leaked.'
 d. Sie schmierte meinen Rücken (mit Sonnencreme) ein. [German]
 she smeared my back_{Acc} with sun cream in
 'She smeared sunscreen into my back.'

The direct arguments receive structural case in the verbal or clausal domain, not from P, witness the nominative case of the Ground of *aus* in the unaccusative structure in (7c) (despite the normal dative-assigning behaviour of *aus*), and the fact that the accusative in (7d) would become nominative if the clause were passivised.

Some examples in (7) allow the optional realisation of the Figure in a PP with *with/mit*, reminding us of realisation of suppressed arguments in *by* or *with* PPs in verbal passives or locative alternations (*the truck got loaded WITH books BY Fred*). Rarely, Figure *s* are realised in *of* phrases, cf. Cappelle's (2005:337) web-attested *It will clean the body out of estrogen* and the lexicalised *my pen ran out of ink*.

Promoted Grounds are often interpreted 'holistically', as substantially affected. Thus, *squeeze an orange out* (unlike *squeeze juice out of the orange*) is usable only if much of the juice leaves the orange. This effect is arguably the diachronic (or even synchronic) source for the interpretation of certain particles commonly viewed as 'completive' or 'pefective' aspectual operators. McIntyre (2004:537-539) contends that the holistic effect, in concert with the assumption that events can metaphorically move 'through' themes, is enough to derive the semantics of the particle in *read it through*. German *aus* raises different problems. *Gläser austrinken* 'drink glasses empty (lit. 'out')' could pretheoretically involve either a primitively aspectual interpretation or Ground promotion plus holistic semantics. The choice between the analyses is hard, since *aus* also boasts uses involving the holistic effect without Ground promotion (*den Wein austrinken* 'drink up the wine') and Ground promotion without any completive/holistic effect (cf. (7c), which need not entail that the container became empty).

Svenonius (2003) offers the only elaborated analysis of Ground promotion. He assumes the extended projection of P in (8). Little *p* introduces the Figure argument and assigns case to the Ground, i.e. has case-assigning, argument-introducing properties like those of little *v*. With Ground promotion, *p* is missing or defective, so the Ground must move into the verbal domain for Case, and the Figure is either not realised or, in cases like (7d), appears as an adjunct, resembling *by*-phrases in verbal passives.

- (8) [_{PP} [_{DP} the hay] [_p p [_{PP} P [_{DP} the wagon]]]]

Svenonius does not discuss the fact that Ground-promoting particles are oblivious to the normal constraints on preposition stranding observed in Dutch and German. This is perhaps reconcilable with Svenonius' account if one assumes that omitting *p* allows or forces abstract P-to-V reanalysis or incorporation.

Svenonius takes the lower frequency of Ground promotion in English and Scandinavian vis-à-vis other languages to indicate that the former cannot omit *p* and thus lack *bona fide* Ground promotion. To explain *wipe the table off*, he assumes (p. 442) that the object is really a Figure, 'but that the flexible meaning of *off* in the context of cleaning allows the Figure to be interpreted as an affected surface'. These assumptions raise problems. Svenonius' reasoning

about *wipe off* would apply to parallel constructions in languages he assumes to have genuine Ground promotion, casting doubt on the need for his structural account of Ground promotion in those languages. Moreover, Svenonius' real-vs.-fake Ground promotion parameter is based on a tendency, not a qualitative difference. While, say, German allows Ground promotion more freely than English, we should be mindful of two qualitative similarities between the languages: (i) the vast bulk of particle verbs disallow Ground promotion, and (ii) Ground promotion is not fully productive. This is easy to demonstrate with German. Consider the fact that *auf* 'on' allows Ground promotion with very few verbs beyond those in (7b), that German cannot translate (9a) literally, and that the Ground-promoting use of *abreißen* in (9b) is impossible (although *abziehen* 'pull off' allows both types of object). Scores of similar productivity gaps could be mentioned.⁴

- (9) a. Ix hob ayn-geschtoxen dos ferd mit a dorn.
 I have in.stuck the horse with a thorn.
 'I stuck a thorn in the horse.' [Yiddish; Svenonius 2003]
- b. Ich habe {die Bettwäsche/*das Bett} abgerissen
 I have {the bedsheets/the bed} off.ripped
 'I ripped the sheets off the bed.' [German]

Despite these reservations, something like Svenonius' analysis of *wipe the table off* may be valid in some cases. Blom (2005:191) draws attention to superficially Ground-promoting particles lacking alternants with the putative Ground as complement of transitive prepositions. Alongside Blom's Dutch examples, we could cite *fill in the gap* vs. **fill cement in(to the gap)* and (10). That (10a) is possible despite the impossibility of (10b) leaves room for doubt about whether the object in (7d) is really a promoted Ground.

- (10) a. Sie schmierte das Kind mit Sonnencreme ein. [German]
 she smeared the child with sun cream in
 'She smeared the child with sun cream.'
- b. *Sie schmierte Sonnencreme in das Kind (ein)
 she smeared sun cream in the child in
 'She smeared sun cream into the child.'

Such data move Blom (2005:187-192) to propose that there is no genuine Ground promotion. This would demand Svenonius' above-mentioned analysis for *wipe the table off*, or some other analysis of *off* as a result predicate meaning 'clean/clear' (say that in Stiebels 1996:159). But how could *off* come to mean 'clean/clear'? The obvious answer is that, at some earlier stage, *wipe the table off* meant 'cause something to go off the table by wiping', i.e. involved genuine Ground promotion, and that the implicit 'something' became specialised to contextually inferable impurities such as dust, so that *wiping off tables* became tantamount to cleaning them, allowing a reanalysis of *off* as a result predicate meaning 'clean'. An earlier stage involving Ground promotion seems necessary to explain why Ground-promoting *off* occurs only with surfaces and Ground-promoting *out* only with containers (*wipe the table off/*out*; *clear the room out/*off*), which is similar to the selection restrictions imposed on Grounds by transitive *off/out of*. It thus appears that distinguishing between real and fake cases of Ground promotion belongs on the list of tasks for future research.

⁴ Differences between logically possible and acceptable cases of Ground promotion fit into a larger generalisation. Various studies (e.g. Cappelle 2005, McIntyre 2002, Stiebels 1996, Stiebels & Wunderlich 1994, Zeller 2001b) indicate that most particle uses are either not fully productive, requiring lexical listing of acceptable tokens, or are productive only with certain (often arbitrary) classes of verbs.

2.3 ‘Aspectual’ particles

Many Germanic particles have uses often termed ‘aspectual’. They do not form an argument-structural natural class, but common assumptions about aspect/Aktionsart make it expedient to treat them in a single section. ‘Aspectual’ particles come in two types, **atransitive** particle uses, which disallow direct objects even with (potentially) transitive verbs, cf. (11),⁵ and **non-atransitive** particle uses, which allow (or force) direct objects, including unselected objects, cf. (12).

- (11) a. hammer (*the metal) around/away (in sense ‘hammer around/away on the metal)
 b. fight (*battles/*enemies) on⁶
 c. sing (*the song) along
 d. sie hat (*ein Lied) losgesungen [German]
 she has (a song) off/away-sung
 ‘She started singing (a song).’
- (12) a. eat the chicken up; think the matter *(through/over)
 b. Gabi will {das Buch anlesen/das Problem *(an)denken}.
 Gabi wants {the book ‘at’.read/the problem ‘at’.think}
 ‘Gabi wants to start {reading the book/thinking about the problem}.

Atransitivity seems too systematic to be due to mere stipulations in the particle’s lexical entry restricting the argument-structural classes of verbs it may combine with (as in Müller 2002:345). Attributing the (11)-(12) contrast to Tenny’s (1994) correlation between direct arguments and telicity is probably ill-advised. Thus, Stiebels’ (1996:64f) ascription of atransitivity to a clash between the durative or ingressive semantics of the particle uses and the telicising effects of incremental themes runs aground in (13), where the direct object is outlawed although it is not an incremental theme. Moreover, certain ‘aspectual’ particles fail telicity tests in transitive structures, cf. (14) and Cappelle (2005:422f).⁷

- (13) a. She played (*her guitar) {on/around/away/along}
 b. She played her guitar for twenty minutes
- (14) a. He {stared/shouted/scrubbed} them down for a minute.
 b. Fran {chatted/beat} up Stan for ten minutes.

Atransitivity is not solely the prerogative of ‘aspectual’ particles like (11). It also occurs with non-aspectual particle/PP structures like (15) and others in McIntyre (2004).

- (15) a. I rang (*the secretary) through.
 b. Grandma shot ([#]a bird) into a tree. [good only if bird is Figure]
 c. Grandma could see (*someone) into the window.
 d. Verbs govern (*NPs) into PPs after P-incorporation.

⁵ Most particles in (11) also have transitive uses whose similarity to the ‘aspectual’ uses is only superficial (McIntyre 2004:529-532; Toivonen 2006). Thus, *einen Brief losschicken* means ‘send off a letter’, not ‘start sending a letter’, and *push the cart on* means ‘cause (by pushing) the cart to move onwards’ rather than ‘continue pushing the cart’, as is clear from analogy with *send the cart on*, which cannot mean ‘continue sending the cart’.

⁶ Dutch *door* and Swedish *på* have uses whose meaning and argument-structural properties parallel *on* in (11b).

⁷ Treating ‘aspectual’ particles as aspectual heads which license accusative in (12) or are in complementary distribution to such heads in (11) (e.g. Miller 2006) is challenged by modification data like *talk right on* and (5). Modified particles are phrases, not heads, witness their rendering particles ineligible for pre-object positioning in English and verb raising in Dutch (Zeller 2001b:281f), phenomena standardly taken to involve either head movement or complex heads.

Do (11) and (15) have anything in common beyond atransitivity? A common feature is what I will call the **deviant predication intuition**: the fact that, if the objects are included, the particles/PPs are obligatorily interpreted as predicates on the objects, even though this is conflicts with the speaker's intention or world knowledge. Thus, *#bash the piano about* entails causing the piano to move about and lacks a reading parallel to *bash about on the piano*. Similarly, including the objects in (15b,c) forces them to be interpreted as going into the tree/window as a result of the shooting/seeing, rather than as stationary shot/seen entities.

McIntyre (2004) proposes another common feature of the particles/PPs in (11) and (15). Both express a path with a silent Figure. With the atransitive 'aspectual' particles in (11), this path is a metaphorical trajectory followed by the verbal event. Thus, the fact that *on* in (16a) characterises an event as unbounded is derived by assuming that *on* expresses an unbounded path with the event as Figure (unlike (17), where the Figure is the object DP). (16a) means "Luke smoked, and this smoking 'went on', in the sense that it continued". Similarly, the connotations of planlessness or ineffectuality in *hammer (*nails) around* arise because *around* expresses a path lacking a determinate goal (which can also be predicated of entities, cf. *push the cart around*). Related ideas are extended to several other atransitive particles and PPs. Possibly problematic for these semantic assumptions is the incompatibility of apparently eventive cognate objects with atransitive particles: *she danced a mazurka (*on)*. See also Cappelle's (2005:357-361) criticism of localistic approaches to 'aspectual' particles.

(16) a. Luke smoked on.

b. *Luke smoked a cigar on.

(17) I pushed/prodded/encouraged the people on.

McIntyre (2004) maintains that structures like (11) and (15) arise through 'conflation' (= 'lexical subordination', the phenomenon also responsible for resultatives, cf. section 2.1), and that lexical verbs cannot link arguments in conflation configurations; direct objects that do occur are always arguments of particles or result predicates, which captures the deviant predication intuition mentioned above. Zeller (2001a) makes related claims. Since the relevance of these claims transcends 'aspectual' particles, discussion of their motivation and implementation is postponed to section 3.

By contrast, Toivonen's (2006) account for atransitivity accepts that verbs can project arguments in particle constructions. In her approach, *on* predicates over direct objects in cases like (17) (as in McIntyre 2004), but over the subject in cases like (16a): What goes on/continues (16a) is not strictly speaking the smoking, but Luke. (16b) is disallowed because the particle is forced into a semantically nonsensical predication over the object. This is because *on* is constrained to predicate over the 'lowest core grammatical function'. Though not derived independently, the constraint is arguably needed for other phenomena, such as the Direct Object Restriction on resultatives discussed by Toivonen, and the interpretation of *of*-nominalisations (*the dining/eating of guests*). Toivonen's account stands and falls with the claim that *on* predicates over the subject in (16a), but the semantics for the subject predication (the subject 'continues movement through space or time' p.188) is not clarified and supported in detail. Toivonen (p.188, fn. 8) defends subject predication in *it rained on* by noting evidence that weather-*it* is not a real expletive, but it is hard to tell whether such referentially defective items can 'continue movement through space or time'. Another possible problem is that atransitive particle structures fail unaccusativity tests (McIntyre 2004:530), which contrasts with uncontroversial cases where directional particles/PPs predicate over unique NPs. Finally, Toivonen (2006) only attempts to capture atransitive *on* and Swedish *på*. The subject predication idea apparently cannot explain e.g. (15b,c), where Grandma does not go into the tree/window.

We will see in section 3 that Zeller's (2001a) and McIntyre's (2004) accounts for atransitivity are not hassle-free either, so atransitivity remains an important challenge.

2.4 Other particle constructions

We have thus far only discussed monotransitive and intransitive structures. To complete the empirical survey, we must discuss constructions involving non-direct internal arguments.⁸

2.4.1 Complex particle constructions

In **complex particle constructions**, a particle and direct object co-occur with some other item, cf. (18-20).⁹

- (18) I painted the barn up red
(19) They made John out a liar
(20) I handed John down the spanner

These data raise several perplexing questions. (18) defies the otherwise observable ban on co-occurrence of particles and result predicates (**beat them up unconscious*; **knock him over dead*). A natural hypothesis is that *red* in (18) is an adjunct interpreted resultatively or adverbially¹⁰, but it is unclear what allows this behaviour. The notorious question of word order in complex particle constructions has been discussed (e.g. den Dikken 1995, Farrell 2005, Miller 2006 on English and Collins and Thrainsson 1996 on Icelandic), but without reference to the syntax-semantics interface. For instance, den Dikken (1995) shows that an elegant account of the serialisation facts can be derived by positing a small clause complement for the particle, but there is no discussion of the semantic questions raised by this argument-structural claim, such as how it expresses the intuition that the semantic argument of *down* in (20) is the spanner, not a possession relation between John and the spanner.

2.4.2 Oblique case assignment to stranded Grounds

German has many constructions of the type in (21) in which a Ground receives dative. Since the verbs do not assign dative, and the particles double as dative-assigning prepositions, the dative DP presumably gets Case from the particle, despite being stranded from it. Zeller (2001b:218-25) offers more data and an account using percolation of the particle's dative feature. Miller (1993:118f, 121-126) discusses similar phenomena with Greek and Latin

⁸ The survey ignores interactions between particles and *external* arguments because there apparently are none. Potential exceptions are structures with causer arguments impossible without the particle, e.g. *they swore him in*, *they packed him off to school* and (i). Given the rareness of these examples and the seeming lack of semantic sense in treating the particles as licensers of causation or CAUSERS, I regard these as idiomatic causative constructions and beyond the remit of a theory of particles and argument structure.

(i) a. Sie funktionierten das Gebäude um [German]
 They functioned the building around
 'They gave the building a new function.'

b. Sie arbeiteten Fritz ein
 they worked Fritz in
 'They trained Fritz for his work.'

⁹ One could add cases of ‘particle iteration’ like *take it on up*, though these seem better discussed in theories of complex PP formation, witness the apparent lack of cases where the choice of verb affects the acceptability of the combination. See also den Dikken (2003) on iteration involving non-spatial particles and prefixes.

¹⁰ Cf. Keyser & Roeper's (1992:98) treatment of *repaint it red* vs. **redrive him crazy*, and Kratzer's (2005) analysis of some apparent result predicates as adverbials. Rok Zaucer (p.c.) observed that Slovenian lacks adjectival resultatives of the Germanic type but allows (*po*)-*barvati hlev rdece* 'paint barn (up) red', where the *rdece* 'red' behaves like an adverb in not agreeing with the object and in being questioned with an adverbial, non-adjectival *wh*-expression.

prefixes. Blom (2005:135-139) notes possible Dutch analogues, though these may involve Ground promotion, with structural case assignment to the object.¹¹

- (21) Ich lief dem Auto nicht nach
 I ran the car^{dat} not after
 ‘I didn’t run after the car.’

2.4.3 Particles and PP complements

The V+particle+PP combinations in (22) are at least partially idiomatic. The PP is obligatory in some cases. In cases like *get up to chapter six*, one could argue that the particle is part of a complex PP, cf. *up to chapter six he wasn’t*, but there are cases where the PP appears to be an argument of the whole verb+particle combination rather than of the verb or the particle (Neeleman 1994:61), a claim requiring further attention given that it may favour complex predicate views of particle verbs. Cases like (22b) are particularly interesting because the PP-internal DP is arguably a Figure, and the subject’s interpretation recalls ‘possessor raising’ configurations. See Cappelle (2005:183-188) for more discussion of particle+PP structures.

- (22) a. put up with it; face up to it; come up with answers; get on/off with someone
 b. break out in spots; come out with a comment

2.4.4 Particles with adjunct-like functions

The capitalised items in (23) are not resultative and have no (obvious) semantic relations to the objects. Their interpretations are adjunct-like (e.g. because P is not directional), and the blockage on pre-object position in (23b) suggests an adjunct analysis comparable to PP modifiers like *at home/with me*. However, the constructions show productivity restrictions (**drink beer in*) and prosody typical of particles. See Blom (2005:132-135, 148-152, 168-173) for Dutch examples, and McIntyre (2001:158-163) for more German data.

- (23) a. den Ofen VORheizen; ein Bier MITtrinken [German]
 the oven pre.heat a beer with.drink (i.e. with other people)
 b. I ate {*IN} my dinner {IN}; %I brought {*WITH} the books {WITH}; I slept IN
 (24) Sie arbeiteten die Skulptur^{Acc} *(NACH)
 They worked the sculpture after
 ‘They reproduced/did more work on the sculpture’

Particles like those in (23a) are sometimes accompanied by valency shifts. Thus, *mitmachen* ‘participate, lit. with-do’ has an intransitive use impossible with *machen* ‘do’, and (24) arguably shows an unselected object (‘arguably’ since *arbeiten* in (24) may be a truncation of transitive *bearbeiten* ‘work on’; truncation with particles has precedents in *sum(*marise) up*, *(*con)fess up*, *(con)glom(erate) together*). Further research is needed to determine whether such data are sufficiently systematic to merit serious attention.

3 Are direct arguments arguments of verbs or particles?

I now discuss the question mentioned in sections 1 and 2.3 as to what direct arguments are arguments of. Let us recall and rephrase the problems. Is *the car* (25a) an argument of *in*,

¹¹ German productively forms structures like (i), where the datives are not Grounds but affectees/beneficiaries/possessors, witness their potential occurrence with full PPs (*auf den Kopf* ‘on the head’ can replace *auf* in (i)). Affected datives are often assumed to require a possessed entity lower in the structure. In (i) this would have to be the particle’s silent Ground. See McIntyre (2006: section 8) for more data and discussion.

- (i) Sie setzten ihm einen Hut auf
 she set him^{dat} a hat^{acc} on
 ‘She put a hat on his head.’

push or both? The answer does not surrender itself to superficial inspection, since in other contexts *the car* can be an argument of either (cf. *I pushed the car*; *The car is in*). To complicate matters, if one sees the object in (25a) as an argument of the verb, then presumably a different analysis is required for cases like (25b) sporting unselected objects (**vote the party*).

(25) a. I pushed the car in.

b. They voted the party in.

There are two main trends in the particle literature regarding these issues. One I will call **VERB DEPENDENCY**, the claim that verbs can project direct arguments in particle constructions, and sometimes share direct arguments with particles (Neeleman 1994, Neeleman and Weerman 1993, Toivonen 2006; cf. similar proposals on resultatives in Carrier and Randall 1992, Haider 1997, Winkler 1997). The other trend is **ANTI-VERB-DEPENDENCY**, which says that direct arguments in particle constructions are arguments of particles, never of verbs (Zeller 2001a, McIntyre 2004). Writers merging direct arguments in small clauses or other extended projections of particles (den Dikken 1995, Hoekstra 1988, Svenonius 1994, 1996, 2003) arguably commit themselves to this view, though they do not discuss enough argument-structural classes for this to be certain.¹²

The possibility of verbs and particles sharing arguments is typically part of VERB DEPENDENCY theories, and advisedly so. The apparently uncontroversial assumption that the unselected object in (25b) is an argument of the particle suggests that the object in (25a) is also an argument of the particle. Disagreeing would involve arguing (past the simple testimony of the observation that both objects in (25) end up *in* something) that the two *ins* in (25) have radically different argument structures, incurring a previously unshouldered burden of proof. The surviving question attending (25a) is whether or not the verb shares the particle's argument. VERB DEPENDENCY theory says that it can, and ANTI-VERB-DEPENDENCY that it cannot. In other cases like *fix up the bike*, where the particle's semantic, and therefore argument-structural, properties are less obvious, a VERB DEPENDENCY theory might view the object as an argument of the verb and not of the particle, while ANTI-VERB-DEPENDENCY insists that it is uniquely an argument of the particle.

I now compare the merits of VERB DEPENDENCY and ANTI-VERB-DEPENDENCY. The honours turn out to be approximately even once we dismiss some inconclusive arguments which lend VERB DEPENDENCY an ill-gotten street credibility. One such argument is that the object in *push the car out* must be an argument of *push* because car-pushing is entailed. However, rather than being of argument-structural provenance, this intuition could equally well be an implicature based on direct causation (on which see Kratzer 2005). Notice that *I got the car out by pushing* evinces the same intuition although the object is not an argument of *push* (cf. Hoekstra 1988:117f; Kayne 1985:122).

A second, seriously flawed type of argument frequently levelled against small clause approaches to particles, and equally applicable to ANTI-VERB-DEPENDENCY, is that the object in *bash me up* is not an argument of the particle because the structure does not entail *I am up*. The problem with this is that copula+particle structures are constrained by non-argument-structural factors (Cappelle 2005:351-352, McIntyre 2004:546f and, less critically, Blom 2005:92-96). Many particle uses are not fully productive or productive only with certain verb

¹² Some studies straddle the boundary between VERB DEPENDENCY and ANTI-VERB-DEPENDENCY. In Ramchand & Svenonius (2002), objects start life in the particle's projection but acquire an interpretation as being affected by the verbal event in a higher specifier position. The linking system in Lexical Decomposition Grammar (Stiebels 1996; Wunderlich 1997) predicts that particles are the projectors of the internal arguments in resultative particle verbs, but this need not hold for other particles.

classes (recall note 4). The copula shares too few characteristics with other verbs to be likely to be a member of these classes. Attested copula+particle structures are idiosyncratic. *He's down* can express the result of *drag him down* in the sense 'depress him' but not in the sense 'drag him downstairs', and *they're off* cannot describe the result of *jump off (a cliff)* but can be used to assert that horses are obediently running a race and have precisely NOT *gone/run off*. Finally, the copula predication diagnostic often contradicts the evidence from unselected objects, cf. *chat me *(up)* vs. **I am up*. Thus, constraints on particle-copula configurations do not speak for VERB DEPENDENCY.

Another type of argument for VERB DEPENDENCY (originally applied to resultatives in Carrier and Randall 1992, Neeleman and Weerman 1993) runs as follows. (26) shows that *rip* is obligatorily transitive and that particles co-occur with objects obeying *rip*'s selection restrictions but not unselected objects. Since (obligatory) transitivity entails (inviolable) s-selection, it appears that obligatory transitivity is enforced in particle constructions. VERB DEPENDENCY predicts this, as well as the expectation that unselected objects occur only with intransitive (uses of) verbs.

- (26) a. I ripped *(the bag). b. *I ripped the water.
 c. I ripped the bag up. d. *I got the water bag and ripped the water out.

However, this argument backfires in view of counterexamples like (27), and others in McIntyre (2004: section 4.1). The failure of obligatorily transitive verbs to police their s-selection requirements in these particle constructions favours ANTI-VERB-DEPENDENCY. Other cases where particles ride roughshod over obligatory verbal argument selection include optionally transitive particle constructions based on obligatorily transitive verbs, as in (28) (see Cappelle 2005:305-315) and unaccusative structures like (3c).

- (27) a. I locked him in. [*I locked (him)]
 b. I got an old shirt and tore the buttons off. [*I tore (the buttons)]
 c. I got the bucket and tipped the water out. [*I tipped (the water)]
 (28) a. She {lit/rolled} up (a joint). vs. *She {lit/rolled}.
 b. She {locked/tidied} up (the house). vs. *She {locked/tidied}.

The literature to my knowledge offers no further arguments for VERB DEPENDENCY. The flimsiness of existing arguments earns it a 'not (yet) proven' verdict. Whether ANTI-VERB-DEPENDENCY fares much better is unclear. One of its drawbacks is its ability to explain atransitivity simply (Zeller 2001a, McIntyre 2004), though of course this argument would lose force should satisfactory alternative accounts of atransitivity materialise. A second argument for ANTI-VERB-DEPENDENCY involves violation of obligatory argument selection in particle constructions (see the previous paragraph). However, this argument needs to be supplemented with an explanation for data like (26d), which has not so far been forthcoming. A related challenge is that, beyond isolated examples like *I hit (*the golfball) off* (cf. **I hit*), atransitive particle uses rarely occur with obligatorily transitive verbs.

Another challenge for ANTI-VERB-DEPENDENCY comes from the adjunct-like particles in section 2.4.4. One could save ANTI-VERB-DEPENDENCY by confining its scope to resultative and 'aspectual' particles and claiming that the particles in (23) are fundamentally different creatures. However, unselected objects like (24) lead to a quandary, at least if the data are regarded as systematic. Since the object is not plausibly an argument of the particle, and since *arbeiten* cannot select patient NPs if no particle is present, it becomes conceivable that either (i) unselected objects can somehow be introduced though they are arguments of neither the verb nor the particle or (ii) the object in (24) *is* a patient argument of *arbeiten* which for some (case-related?) reason cannot surface except with certain particles or PP-internally (*an der*

Skulptur arbeiten ‘work on the sculpture’)¹³. If either option proved viable, unselected objects would lose their teeth as an argument for ANTI-VERB-DEPENDENCY.

Another question is whether there are convincing ways of enforcing ANTI-VERB-DEPENDENCY. Zeller (2001a) does so by having the particle projection and the verb’s internal DP argument compete for the verbal complement position. Spec,VP is reserved for AGENTS, and cannot accommodate internal arguments. It is unclear what this follows from, and hence whether **songs sang on* can be blocked without stipulation. The theory also seems unable to handle complex particle constructions and datives of the type in note 11, which are not arguments of particles. Perhaps for these reasons, Zeller abandoned his (2001a) proposal in (2001b).

McIntyre (2004) enforces ANTI-VERB-DEPENDENCY by assuming that the relevant particle verbs involve conflation (=lexical subordination, see section 2.1) and that conflation involves the formation of a compound/serial verb-like structure consisting of a lexical verb and a silent light verb such as GO in (29). Here lexical verbs are nonheads of compounds and accordingly cannot project arguments. Embick (2004) and Zubizarreta and Oh (to appear) propose similar structures for independent reasons, notably overt counterparts in other languages. However, such analyses forfeit the possibility of a local (e.g. head-complement, complex head) relation between the lexical verb and particle which is arguably necessary for the treatment of idiomaticity and semiproductivity facts like those in footnote 4 (e.g. Zeller 2001b). Capturing such facts seems to require either modifications to the proposal or a non-standard theory of idiomatic licensing.

(29) The button tore off

[_{VP} [_{DP} the button] [_V [_V tear+GO] [_{PP} off]]]

‘the button moved off and this event was a tearing event’

To conclude, there appear to be problems with the empirical basis and/or the theoretical implementation of both VERB DEPENDENCY and ANTI-VERB-DEPENDENCY. If this study encourages further attempts (of whatever theoretical orientation) at solving these problems in an empirically informed fashion, it will have served one of its main purposes.

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References

- Blom, Corrien. 2005. Complex predicates in Dutch. Utrecht: LOT.
Cappelle, Bert. 2005. Particle Patterns in English. Dissertation: Leuven.
Carrier, Jill, and Janet Randall. 1992. The argument structure and syntactic structure of resultatives. *Linguistic Inquiry* 23. 173-234.
Collins, Chris and Hoskuldur Thrainsson. 1996. VP-internal structure and Object Shift in Icelandic. *Linguistic Inquiry* 27. 391-444.
Dehé, Nicole, Ray Jackendoff, Andrew McIntyre and Silke Urban (eds.). 2002. *Verb particle explorations*. Berlin: Mouton de Gruyter.
den Dikken, Marcel. 1995. *Particles*. Oxford: Oxford University Press.

¹³ These options might explain *think the matter over*, where *over*’s repetitive semantics does not relate to the object in an obvious fashion. Option (ii) in the main text is tempting because unselected objects corresponding to prepositional objects of intransitive verbs are noticeably common: *think it up/over*, *rethink it* (cf. *think about it*), *work it over/up*, *rework it* (cf. *work on it*), *vote them in* (cf. *vote for them*). However, option (ii) is unconvincing in other cases (*work off excess weight*, *sleep off a hangover*).

- . 2003. When particles won't part. Ms. CUNY.
- Embick, David. 2004. On the structure of resultative participles in English. *Linguistic Inquiry* 35. 355-392.
- Farrell, Patrick. 2005. English verb-preposition constructions. *Language* 81. 96-137.
- Haiden, Martin. 2006. Verb particle constructions. *The Blackwell companion to syntax*, Vol. 5, ed. by Martin Everaert and Henk van Riemsdijk, 344-375. Malden/Oxford: Blackwell.
- Haider, Hubert. 1997. Precedence among predicates. *Journal of Comparative Germanic Linguistics* 1. 3-41.
- Hoekstra, Teun 1988. Small clause results. *Lingua* 74. 101-39.
- Johnson, Kyle. 1991. Object positions. *Natural Language and Linguistic Theory* 9. 577-636.
- Kayne, Richard 1985. Principles of Particle Constructions. *Grammatical Representations*, ed. by Jacqueline Guéron, Hans-Georg Obenauer and Jean-Yves Pollock, 101-140. Dordrecht: Foris.
- Keyser, Samuel and Thomas Roeper. 1992. Re: The abstract clitic hypothesis. *Linguistic Inquiry* 23. 89-125.
- Koenenman, Olaf 2006. Shape conservation, Holmberg's generalization and predication. *Comparative Studies in Germanic Syntax*, ed. by Jutta Hartmann and Laszlo Molnárfi, 51-87. Amsterdam: Benjamins.
- Kratzer, Angelika. 2005. Building Resultatives. *Event Arguments*, ed. by Claudia Maienborn and Angelika Wöllenstein, 177-212. Tübingen: Niemeyer.
- Lindner, Susan. 1983. *A Lexico-Semantic Analysis of English Verb Particle Constructions*. Bloomington: Indiana University Linguistics Club.
- McIntyre, Andrew. 2001. Argument blockages induced by verb particles. *Structural Aspects of Semantically Complex Verbs*, ed. by Nicole Dehé and Anja Wanner, 131-164. Berlin: Peter Lang.
- . 2002. Idiosyncrasy in Particle Verbs. *Verb-particle explorations*, ed. by Nicole Dehé, Ray Jackendoff, Andrew McIntyre and Silke Urban, 97-118. Berlin: Mouton de Gruyter.
- . 2003. Preverbs, argument linking and verb semantics. *Yearbook of Morphology* 2003. 119-144.
- . 2004. Event Paths, Conflation, Argument Structure and VP Shells. *Linguistics* 42. 523-571.
- . 2006. The Interpretation of German datives and English have. *Datives and Other Cases*, ed. by In Daniel Hole, André Meinunger and Werner Abraham. 185-211. Amsterdam: Benjamins.
- Miller, D. Gary. 1993. *Complex Verb Formation*. Amsterdam: Benjamins.
- . 2006. On the Syntax of Morphology. Ms. Florida.
- Müller, Stefan. 2002. *Complex Predicates*. Stanford: CSLI.
- Neeleman, Ad. 1994. *Complex Predicates*. Utrecht: OTS Dissertation Series.
- . and Fred Weerman. 1993. The balance between syntax and morphology. *Natural Language and Linguistic Theory* 11. 433-475.
- Ramchand, Gillian and Peter Svenonius. 2002. The lexical syntax and lexical semantics of the verb-particle construction. *WCCFL* 21. 387-400.
- Spencer, Andrew and Marina Zaretskaya. 1998. Verb prefixation in Russian as lexical subordination. *Linguistics* 36. 1-39.
- Stiebels, Barbara. 1996. *Lexikalische Argumente und Adjunkte*. Berlin: Akademie.
- . 1997. Complex denominal verbs in German. *Yearbook of Morphology* 1997. 265-302.
- . and Dieter Wunderlich. 1994. Morphology feeds syntax: the case of particle verbs. *Linguistics* 32. 913-968.
- Svenonius, Peter. 1994. *Dependent Nexus*. Dissertation: University of California at Santa Cruz.
- . 1996. The verb-particle alternation in the Scandinavian languages, Ms. Tromsø.
- . 2003. Limits on P. *Nordlyd* 31. 431-445.
- Tenny, Carol. 1994. *Aspectual roles and the syntax-semantics interface*. Dordrecht: Kluwer.
- Toivonen, Ida. 2003. *Non-Projecting Words*. Dordrecht: Kluwer.
- . 2006. On continuative on. *Studia Linguistica* 60. 181-219.
- Winkler, Susanne 1997. *Focus and Secondary Predication*. Berlin: de Gruyter.
- Wunderlich, Dieter. 1997. Argument extension by lexical adjunction. *Journal of Semantics* 14. 95-142.
- Zeller, Jochen. 2001a. How syntax restricts the lexicon: Particles as thematic predicates. *Linguistische Berichte* 188. 461-494.
- . 2001b. *Particle Verbs and Local Domains*. Amsterdam: John Benjamins.
- Zubizarreta, M.L. and Oh, E. (to appear) *On the Syntactic Composition of Manner and Motion*. Cambridge: MIT Press.