The Lexical Syntax and Lexical Semantics of the Verb-Particle Construction

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1. Introduction

Whether despite the amount of ink spilled over the verb-particle construction or because of it, there is still a dramatic lack of consensus regarding its syntactic structure. The construction is intriguing because the verb and particle function autonomously in some respects (for example, both (1) and (2) allow the verb-particle combination to be separated, as in (1b) and (2b)), but in other respects have the linguistic properties of a single predicational domain (for example, (2) has an idiomatic meaning not predictable on the basis of its parts).

(1) a. They marched off the hangover.
    b. They marched the hangover off.

(2) a. They let up the pressure.
    b. They let the pressure up.

The syntactic properties of compositional examples like (1) and idiomatic ones like (2) are so similar that a unified syntactic representation is called for (see e.g. McIntyre 2002 contra e.g. Wurmbrand 1998, 2000; McIntyre argues persuasively that putative differences come from such factors as the possibility of contrasting the particle, rather than from independently motivated syntactic differences). Unified accounts fall into two main camps—the 'complex predicate' analysis and the 'small clause' analysis.

The complex predicate (CP) analysis takes (2a) as the paradigmatic example: the verb and the particle are adjacent, and the meaning is idiosyncratic, clearly stored in the lexicon. Such accounts typically envisage a lexical entry with two parts, inserted together into a syntactic tree, but

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with the possibility of separation by syntactic processes (to account for (2b)) (see e.g. Chomsky 1955; Johnson 1991; Neeleman 1994; Stiebels and Wunderlich 1994, Zeller 2001). In (2), then, *the pressure* is the direct object of the complex verb *let up*, and by extension, in (1), *the hangover* must be the direct object of a complex verb *march off*. Because such constructions are productive and allow novel combinations, the CP analysis is forced to assume that complex verbs can be constructed, either in the syntax or in the lexicon.

Small clause (SC) accounts, on the other hand, take examples like (1b) as essential. Here, the relationship of the noun phrase to the verb preceding it is not that of direct object; instead, *the hangover off* is a predicational structure, a small clause. This captures the absence of any selectional relation between the verb and the noun phrase, and easily handles productive and compositional cases. The alternation between (1a) and (1b) is the result of movement (cf. Kayne 1985; Guéron 1987; Hoekstra 1988; den Dikken 1995).[1] An SC analysis generally treats examples of the sort (2) more or less as idioms—it is not unexpected that idiomatic expressions should be subject to the same constraints as compositional syntactic structures, when issues of referentiality and so on do not interfere. But the SC analysis is often felt to be unsatisfactory for examples like (2), for example it leaves unexplained what the denotation of the putative small clause *the pressure up* would be.

Our own proposal exploits recent developments in *l*-syntax (in the sense of Hale and Keyser 1993) to capture the positive aspects of both the SC and the CP accounts. As on the SC account, the argument is merged with the particle before that substructure is merged with the verb, with no recourse being made to structured items in the lexicon, and no specifically lexical rules of structure building being posited.

However, unlike the usual SC account, we do not assume that the argument-plus-particle structure is truly clausal (contra Svenonius 1996a); instead, we assume that the verbal structure itself is complex, and that part of the verbal structure (which we call R, after Ramchand 2002 inter alia) is crucially involved in the interpretation of the verb-particle construction.

In the next section, we discuss the details of two prominent analyses of the construction in the literature (one from the SC camp and one from the CP), and use our critique of those analyses to underline the main challenges for any ultimately successful account. We then lay out the details of our own proposal showing how it avoids many of the problems of the other two types of account and how it captures the unusual properties of the construction without construction-specific rules. Finally, we examine the

1. Guéron and den Dikken assume the order in (1a) to be basic, deriving the small clause by leftward movement of the noun phrase; see below.

implications of our proposal for other languages and for a maximally general theory of *l*-syntax.

2. Previous Accounts

2.1. A Small Clause Analysis (den Dikken 1995)

In this account, the object DP is base generated as the complement of the particle (Prt) within the small clause (SC) complement to V. Den Dikken (1995) proposes that the Prt is 'ergative,' and hence cannot assign Case, forcing the DP to move to the 'subject' position of the small clause where it receives accusative case from the higher V.

(3) Base Order: [V [$_{SC}$ [Prt DP]]]

(4) Shifted Order: [V [$_{SC}$ DP$_i$ [Prt t$_i$]]]

The first obvious problem with this account is that it loses the robust generalisations concerning the mapping between syntactic position within the PP and the Figure-Ground distinction.[2] Consider the following examples.

(5) Take off the hat
V [$_{SC}$ [Prt DP-figure]]

(6) Take the hat off
V [$_{SC}$ DP-figure [Prt t]]

(7) Take the hat off his head
V [$_{SC}$ DP-figure [Prt DP-ground]]

Allowing the Figure DP in (5) to be base generated as the complement of the particle runs counter to the fact that complements of P are uniformly interpreted as Ground elements in the sense of Talmy 1978, and loses the obvious parallelism between the Prt and the corresponding preposition in (7).

A second problem with the account lies in the fact that den Dikken must assume a different Case-assigning mechanism for the DP in base position (Case assigned by the particle) than for the DP in shifted position

2. The Figure is sometimes called the 'locatum,' the Ground the 'location.' See Svenonius 1996b for discussion of den Dikken's account, Svenonius 2002 for recent discussion of the Figure–Ground distinction in the context of verb-particle constructions.

(Case assigned by the V). This is not empirically well-founded. In a rich case-marking language with particle shift, such as Icelandic, it can be readily shown that the case marking on the DP in a V-particle construction does not depend on whether particle shift has occurred or not. The example below from Icelandic shows a verb which assigns dative Case to its object (8a), and where dative also shows up on the object in a verb-particle construction with this verb, regardless of the position of the DP (compare the (b) and (c) examples).

(8) a. Hann fylgdi mér á stoppistöðina. (Icelandic)
he followed me.DAT to the.bus.stop
'He accompanied me to the bus stop.'

b. Hann fylgdi málinu fram.
he followed the.goal.DAT forth
'He pursued the goal.'

c. Hann fylgdi fram málinu.
he followed forth the.goal.DAT
'He pursued the goal.'

This pattern can be replicated for many verbs in the language. Even in cases where the Case assigned by the verb-particle combination is different from that of the verb alone[3], what is unattested is a difference in Case according to whether there is particle shift, although that is exactly what would be expected on den Dikken's account.

In Scottish Gaelic too, a language which also shows particle shift, the Case on the DP object does not vary, even though the Case assigned by prepositions (dative) is morphologically distinct from that assigned by verbs (accusative in this construction). In this language however, the Case we find is always the V-associated Case.

(9) a. Thug e an còta/*a'chòta dheth. (Scottish Gaelic)
gave he the coat.ACC/*DAT off
'He took the coat off.'

b. Thug e dheth an còta/*a'chòta
gave he off the coat.ACC/*DAT
'He took the coat off.'

3 . See Svenonius 2001 for an account of this kind of case alternation in Icelandic.

All of these considerations militate against the idea that the DP in these constructions is base-generated in the complement position of the Prt. Den Dikken's account predicts neither the correct semantics nor the correct Case-marking possibilities for the DP.

2.2. A Complex Predicate Analysis (Johnson 1991)

In the analysis of Johnson 1991, the verb and particle are combined in a complex morphological word, which then raises to a functional head μ above VP.

The first problem is that the morphological word postulated by Johnson (and on any CP account) so formed clearly violates the Righthand Head Rule (RHR) for both English and Scandinavian. A particularly telling contrast comes from Swedish, where the verb and particle are always found linearly adjacent in active constructions (10a), but give rise to a true incorporated form in the passive (10b) [4]

(10) a. Det blev hugget {ned} många träd {*ned} (Swedish)
it became chopped down many trees down
'Many trees got chopped down.'

b. Det blev många träd nedhuggna.
it became many trees down.chopped
'Many trees got chopped down.'

The passive participles conform to the RHR, and cannot be separated by movement. This contrasts with the V–Prt combination, which is separated by V-raising in V-to-I and V2 contexts (11).[5]

(11) a. Kari sparka heldigvis ut hunden. (Norwegian)
Kari kicked fortunately out the.dog
'Kari fortunately kicked the dog out.'

b. * Kari sparka ut heldigvis hunden.
Kari kicked out fortunately the.dog

Thus, the second major problem of the incorporation analysis is that it must assume obligatory excorporation for V-I and V-C movements, but optional excorporation for V-μ.

4. On the incorporation of particles in Swedish passives, see Svenonius 1996a.
5. As pointed out by Åfarli 1984, whence the examples here.

To summarise the results of this section, the successful analysis of the verb-particle construction must (i) account for the fact that the particle and the verb together thematically license the DP argument and (ii) allow for the two different word orders attested, without positing RHR-violating words or unmotivated case-licensing mechanisms.

3. The Analysis

In the framework of Hale and Keyser 1993 (henceforth H&K), lexical semantics is directly reflected in a structure subject to syntactic principles of combination. H&K postulate null heads in English verb phrases, e.g. unaccusative *clear* has a null inchoative head, and transitive *clear* has in addition a null causative head; thus a VP headed by *clear* has for H&K three heads, two of which are null. We follow this line of thinking, and argue that a particle may lexicalise one of the heads in the expanded VP. The two overt elements, the verb and the particle, instantiate pieces of one larger articulated structure which forms a single complex event and thus has a single argument structure.

To implement the idea, we use the slightly expanded version of the *l*-syntactic structure argued for in Ramchand 2002, Butt and Ramchand 2001, and Folli and Ramchand 2002. In this version, the maximal *l*-syntactic decomposition consists of three related subevents in a particular hierarchical relation as shown in (12).

(12) (causing subevent) → [process subevent → (result state)]
*v*P VP RP

Each subevent is associated with a particular XP in the *l*-syntax. We keep close to the tradition within work of this kind and associate the causing subevent with *v*P and the process subevent with VP; we use RP for the optional result state projection.

Within this system, the DPs in the specifier positions of the different syntactic heads get a uniform event-related interpretation: the specifier of *v*P is interpreted as the initiator or 'subject of cause'; the specifier of VP is the undergoer or 'subject of process'; and the specifier of RP is holder of result state or 'subject of result'.[6]

In our view, *l*-syntax is the level at which the event is built up, and also the level at which the traditional notion of θ-role is composed. In other words, DPs can get 'composite' thematic interpretations due to MOVE (Remerge), i.e. by occupying more than one specifier position, as in Borer

6. See Ramchand 2002 for the details of the compositional semantics associated with each of these heads in the *l*-syntax.

1998 inter alia. The entailments associated with the different specifiers in VP are not mutually exclusive, so that a single argument may be both the undergoer and the subject of result; the θ-Criterion, which denies the possibility of a single argument holding two θ-roles, is stated over a notion of θ-role more coarse-grained than what we have in mind.

Consider now a simple case of the V-particle construction in English shown below.

(13)

Throw	the dead rat	out
V	Undergoer/Holder of Result	Prt.

The direct object in the sentence is both the undergoer of the throwing process and the holder of the abstract result state.[7] In addition, the direct object is also thematically the Figure with respect to the semantics of the particle. If we assume the *l*-syntax described above, and if we further assume that the particle-headed predicational phrase is the complement of the R(esult) head, we get the following preliminary representation (ignoring verb movement, and assuming the verb to be inserted under V).

(14) $[_{vP}$ AGT *v* $[_{VP}$ UNDR throw $[_{RP}$ HOLDR R $[_{PrtP}$ $[_{Prt}$ out]]]]]

The argument must occupy SpecVP and SpecRP during the course of the derivation. If objects of non-resultative structures overtly occupy SpecVP (marked UNDR, for *Undergoer*), then since English is VO, this implies that the verb moves at least to *v*, as is commonly assumed.

(15) $[_{vP}$ AGT throw-*v* $[_{VP}$ UNDR t_V $[_{RP}$ HOLDR R $[_{PrtP}$ $[_{Prt}$ out]]]]]

Furthermore, given that movement is exclusively upwards, the internal argument must be merged no lower than SpecRP. But there is in fact evidence that it can be merged even lower down, in SpecPrtP.

Svenonius (1994, 1996c) argues that particle shift involves the movement of the particle from Prt to a functional head between V and Prt. This gives the structure in (16).

(16) $[_{vP}$ AGT throw-*v* $[_{VP}$ UNDR t_V $[_{RP}$ HOLDR out-R $[_{PrtP}$ $[_{Prt}$ t_{Prt}]]]]]

7. In general the overwhelming majority of V-particle combinations that exhibit variable word order have resultative semantics. We will be concentrating on these cases here, but see the final section of this paper for a discussion of possible extensions.

The particle cannot move higher, given this structure, without incorporating into the verb (assuming adjunction to trace to be impossible). Thus, if the argument were base-generated in SpecRP, it could never follow the particle. This implies that the base position of the argument is no higher than SpecPrtP, and that the subsequent movements to SpecRP and SpecVP (necessary for thematic purposes) may be covert.

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

Following Svenonius 1994, 1996c, the alternative order occurs when the argument moves overtly to one of the higher positions. Svenonius argues that the optionality of this movement is crucially linked to the fact that it is an alternative to particle movement. Thus, the order DP-Prt has the structure in (18), where the particle has not moved.

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

Svenonius implements the obligatory movement of either the DP or the particle into the R-domain in terms of an EPP feature (cf. also Alexiadou and Anagnostopoulou 1998). Alternatively, this movement can be thought of in terms of a requirement that a projection be lexicalised (cf. Koopman 1996). Ramchand 2002 proposes a constraint on *l*-syntactic representations whereby overt lexical content is required to semantically identify subevents (see also van Hout 2000 for a similar idea).

An *l*-syntactic analysis captures the intuition of the CP-family of analyses concerning the unity of the verb and particle, since they together construct the core event of the predication. From the point of the view of the more external syntactic processes such as Case marking, we expect the fact that the direct object gets Case just like any other object within a verbal domain. The proposal also accounts for the syntactic and semantic autonomy of the V and Prt, in that they are separate heads in the syntax and participate in separate semantic relationships with the direct object which can then be unified via Move. Move, and the checking of EPP features within the *l*-syntactic domain also allows us to account for the unusual linear disruption of V and the direct object by the particle in many languages, without resorting to empirically problematic assumptions of lexical integrity or incorporation.

3.1. Evidence for Head Movement

Further evidence that it is head movement to a higher functional head that is responsible for the V-Prt-DO order can be found in the data from *right* modification.

(19) a. We threw the rat right out.
b. * We threw out the rat right.
c. * We threw right out the rat.

On the assumption that *right* heads a projection that modifies the PrtP (cf. Abney's 1987 DegP), we can see that the existence of this head blocks the head movement from Prt to R, as expected (as in (19b)), and that the modifier and particle cannot move together (as in (19c)).

New evidence from Scottish Gaelic lends significant credence to the extremely low position that we postulate for the head to which the particle moves. Scottish Gaelic has two classes of periphrastic construction where tense, aspect and the nonfinite verbal form combine productively to produce different aspectual constructions. In one class of construction, the direct object occurs in a post-verbal position and in the genitive case (20a). In the other, object shift occurs and the direct object appears in accusative case in a position in between the aspectual marker and the verb (20b).[8]

(20) a. Tha e ag iarraidh cupa tì. (Scottish Gaelic)
be.PRES he ASP want.NONFIN cup tea.GEN
'He wants a cup of tea.'

b. Tha e air cupa tì iarraidh.
be.PRES he ASP cup tea.ACC want.NONFIN
'He has got a cup of tea.'

The crucial fact is that when the particle raises in this language, it appears in a position lower than the object shifted position (21c), and higher than the non-shifted position (21b).

(21) a. Tha e a'toirt a'chòta dheth. (Scottish Gaelic)
be.PRES he ASP give.NONFIN the coat.GEN off
'He is taking his coat off.'

b. Tha e a'toirt dheth a'chòta.
be.PRES he ASP give.NONFIN off the coat.GEN
'He is taking off the coat.'

c. Tha e air an còta a thoirt dheth.
be.PRES he ASP the coat.ACC give.NONFIN off
'He has taken off the coat.'

8. See Ramchand 1997 for a detailed account of the aspectual properties of the Scottish Gaelic verb phrase.

The highly articulated nature of the Scottish Gaelic periphrastic *v*P allows us to argue that the syntactic head to which the particle moves must be lower than the lowest V node in the structure.

3.2. Further Restrictions

Although particles shift, prepositions do not; that is, although (22a) undergoes shift to become (22b), (23a) cannot shift to (23b).

(22) a. We tossed the rat in.
b. We tossed in the rat.

(23) a. We tossed the rat in the sewer.
b.* We tossed in the rat the sewer.

This restriction is built into the labelling of the phenomenon as 'particle' shift (since particles by definition have no complements), but is not definitional in an account such as ours which properly builds up the verb-particle construction from the normal syntactic entities V and P. Under the view we are proposing, it is perfectly possible for a full PP to appear in the complement position of an R head in the *l*-syntax. Indeed, the semantics of resultative constructions warrants such a representation as in (24).

(24) [$_{vP}$ toss$_i$ [$_{VP}$ t$_i$ [$_{RP}$ [$_{PP}$ [the rat] [$_{P'}$ in the sewer]]]]]

However, in these situations, head movement of the P to R , stranding the complement, is impossible, as demonstrated in (23b).

Our account of this restriction proceeds from the fact noted in Svenonius 1996a that particles are not semantically bare heads, but incorporate some notion of generalised abstract 'ground element' in their semantics. It is this ground element that specifies the nature of the result state and allows the P to successfully identify the R head by raising. Svenonius 1996a argues that the incorporation of the ground element into P endows it with a D feature which then makes it possible for it to check the EPP feature of R.

This idea is corroborated by the evidence from Scottish Gaelic, where the particle actually shows overt morphological agreement with the abstract or contextually specified ground obligatorily, as illustrated in (25).

(25) Thug e dheth/*de an còta (Scottish Gaelic)
gave he off.him/off the coat.ACC
'He took off the coat.'

The restriction against shifting adjectives in adjectival resultatives also follows from our account under plausible assumptions about the structure of AP predication. Specifically, we assume that unlike PPs, the subject positions of APs are generated externally (cf. Hale and Keyser 1993), in our case in the specifier of RP.

(26) We hammered the metal flat.
[$_{vP}$ hammered$_i$ [$_{VP}$ t$_i$ [$_{RP}$ [the metal] [$_{AP}$ [$_{A'}$ flat]]]]]

Since the DP is generated in SpecRP, head movement is unnecessary (and therefore disallowed) for checking R's EPP feature.

(27) *We hammered flat the metal.

4. Conclusions and Speculations

We have shown that an account of the verb-particle construction that exploits the technology of *l*-syntax has considerable advantages over its competitors in that it can capture the most important intuitions that underlie both the complex predicate analysis and the small clause analysis. We have shown that the two different word orders, and the restriction to bare P heads can be derived from an understanding of syntactic processes of feature checking that operate with some generality.

4.1. Why (Just) Result Phrase?

The specific proposal we make involving an *l*-syntax with an R(esult)P in the lowest position also makes sense of some otherwise mysterious facts. It has long been appreciated that causation (or something like it) is an important primitive in the composition of verbal meanings, and that causative heads give rise to clause union behaviour crosslinguistically. But it is also true that within English, and crosslinguistically, semantically resultative phrases give rise to 'clause union' behaviour (object sharing) with suspicious regularity. Consider the case of complex predicate formation in South Asian languages. These complex predicates are strikingly similar to the verb-particle construction in the important respect that the main verb and the 'light' verb behave as if they were part of a single predicational domain from the point of view of the external syntax, but where the syntactic and semantic contributions of the two verbal components are physically separable. Completive or resultative complex predicates form a substantial subclass of light verb constructions in these languages (the others not suprisingly, having a causative semantics). Butt and Ramchand 2001 argue for an analysis of Hindi/Urdu where the different verbal forms are the overt instantiation of the different heads

within an *l*-syntax like the one proposed here. For us, the V-Prt construction is the same as 'light verb' constructions in many languages, except for a difference in which member of the pair bears the greater burden of specific encyclopaedic information.

We seem to have come a long way from the original conception of a lexical syntax that provides an abstract decomposition of a single lexically integral element. The point we wish to make is that *l*-syntax is not the decomposition of lexical items so much as a kind of 'first phase' syntax where the compositional properties of event structure and event participant-hood are built up. English does not characteristically make this decomposition overt because it does not possess the necessary more fine-grained lexical items, but a comparison with other languages shows that this is a contingent fact. In our opinion, the verb-particle construction is another clear instance where we are forced to deconstruct our notion of what constitutes a lexical item.

We also wish to reiterate the point made by Hoekstra 1988 that there is no independent reason for the prepositional small clause in complement to V to be interpreted as a 'result' as opposed to some other kind of modifier (indicating for example, causality or cotemporaneity). This is an interesting fact, and one that needs to be stipulated either in the semantic interpretation rules or in the syntax. Having an RP in the syntax is a way of expressing this relationship, one which we are claiming has some sort of linguistic generality within the ontology of event building.

4.2. Is there a Non-telic L-syntactic Projection below V?

So far our account has dealt with instances of particle shift which involve some kind of resultative semantics (the vast majority). However, there are a few cases known to us where the interpretation is clearly not resultative. Consider (28) below.

(28) a. John moved the rat poison around (for hours).
b. John moved around the rat poison (for hours).

It would be consistent with our account so far for us to propose the existence of a nontelic *l*-syntactic projection (call it SP) in complementary distribution with RP. This SP would be a path-descriptor in contrast to RP which is a telos-locator. The S head would then be available for particle shift as shown by the word order change above. However, such a move has some undesirable consequences. Firstly, it constitutes an expansion of our current ontology of event-building primitives, which in principle should be quite limited. Secondly, it saddles us with the task of discovering why verb-particle constructions of this type are so much rarer than the resultative type, crosslinguistically.

We also note that there are some indications in the data from English that the nontelic *around* has rather different properties from the resultative particles proper. Specifically, if we look at the cases where the direct object is introduced (licensed by) the presence of the particle itself and not independently licensed by the verb, we get an interesting pattern.

(29) a.?? We ran Mary.
b. We ran Mary around (in our car) (for hours).
c. * We ran around Mary. [OK with *Mary* as Ground]

While the atelic *around* can indeed license the addition of an object in (29b), it does not allow particle shift, as seen in (29c), in contrast to the resultative particle in (30).

(30) a. We ran Mary down. [i.e. we caught her, or ran over her]
b. We ran down Mary.

We leave a proper treatment of these cases to further research.

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