Language Value July 2012, Volume 4, Number 1 pp. 1-32
http://www.e-revistes.uji.es/languagevalue

Transitive phrasal verbs in acquisition and use: A view from construction grammar[1]

Beate Hampe
beate.hampe@uni-erfurt.de
Erfurt University, Germany

ABSTRACT

This paper surveys a number of aspects involved in viewing transitive phrasal verbs as *verb-particle constructions* in the construction-grammar sense of the term. The two word-order templates *Verb-Object-Particle* and *Verb-Particle-Object*, as fully schematic and semantically and pragmatically distinct constructions (Gries 2003), are discussed as members of different *construction networks*, viz. transitive vs. caused-motion constructions, with a focus on the latter. Moreover, the word-order constructions are distinguished from specific phrasal verbs as "formal idioms". It is argued that the notion of "allostruction" (Cappelle 2006) can be fruitfully applied only at the intermediate level of the latter.
The first results of a corpus study using data from CHILDES (parts of Manchester, Fletcher), the ICE-GB and parts of the BNC are reported to support the claim that early instances of transitive phrasal verbs exhibiting the word-order *Verb-Object-Particle* function as *precursors* (Diessel 2004) to full-blown, lexically and syntactically more complex realisations of the caused-motion construction. In a more explorative and thus also preliminary way, three *hierarchical configurational frequency analyses* are employed to trace the constellations of selected features of transitive phrasal verbs across different age groups.

Keywords: *verb-particle construction, particle placement, caused-motion construction, particle placement, allostruction, precursor construction, hierarchical configurational frequency analysis*

I. INTRODUCTION

Because of their complex morphosyntactic, semantic and discourse-pragmatic properties, transitive phrasal verbs have equally fascinated and challenged linguists of all kinds of theoretical persuasions for nearly a century (van Dongen 1919). Among the issues most intensely debated are (i) the placement of the particle before or after the direct-object NP as well as (ii) the degree of idiomaticity or, vice versa, the motivation of the meaning of the combination by its parts, especially the spatial meaning of the particle:

[1] The author gratefully acknowledges the use of HCFA 3.2, an interactive script in R, kindly provided by Stefan Th. Gries.

DOI: http://dx.doi.org/10.6035/LanguageV.2012.4.2

(1.a) *Take off* your shoes.

(1.b) You can *leave* your hat *on*.

As has been emphasized before (cf. Bolinger 1971, Lindner 1983, Morgan 1997, Hampe 1997, 2000), the latter is an intricate issue, as a verb-particle construction can be non-literal in a number of ways. Concerning metaphorical shifts, it could be the case that only the particle (or only the verb, for that matter) is used figuratively. This is the case with the particles in (2.a). This "semi-idiomatic" use is what Bolinger (1971: 112-131) traced back to the presence of "first-level metaphor" (cf. Lindner 1983, for a very detailed analysis of phrasal verbs with *out* and *off*). Apart from that – and irrespective of whether the particle is used literally or not – the entire construction can be used figuratively (ex (2.b)), thus exhibiting Bolinger's "second-level metaphor". A third kind of shift that may contribute to a construction's degree of idiomaticity is presented by "second-level stereotyping" (ex (2.c)), i.e. the close association of a phrasal verb with a very specific context of use, such that aspects of this context are incorporated in the meaning of the verb-particle construction:

(2.a) He *rubbed out* the first sentence. He *switched out* the lights.

(2.b) This perspective *brings out* a completely new dimension of the problem.

(2.c) He *brought in* ('served') dinner like an expert.

Beyond these structural and semantic aspects, various discourse properties of phrasal verbs have attracted attention, as they open up a potential for expressing meanings at several levels of discourse other than that of the ideational content, e.g. the level of information structure or the level of participant interaction (Schiffrin 2006). The possibility of spreading out the verbal meaning across the entire verb phrase, and thus put the particle in the final, most rhematic position, for instance, allows speakers to manipulate the information structure so as to focus on (aspects of) the meaning of the verbal predicate itself. In addition, the presence of a stylistic connotation for informality allows speakers to index attitudes and emotions (Powell 1992), with the effect becoming more pronounced the more (referentially) redundant the particle is, i.e. the more the (imagistic meaning of the) particle emphasizes and repeats dimensions of meaning already coded by the verb itself. In this way, a particular conceptual construal of the scenario referred to is made explicit (Hampe 2002). What makes the study of

phrasal verbs so complex is that all of these factors interact in highly intricate ways, with discourse-pragmatic aspects being strongly motivated by the morphosyntactic properties of the entire verb-phrase and the semantic characteristics of the verb-particle combination itself.

The most comprehensive study of the multi-dimensional problem of particle placement to date (Gries 2003) investigates the effect of a large (though probably still not exhaustive) range of semantic, syntactic and discourse-pragmatic determinants of speakers' positioning choices – both in isolation and in conjunction – on the basis of a carefully chosen sample of typical alternating transitive phrasal verbs from the British National Corpus (BNC).[2] Gries's work presents both mono-factorial analyses for each factor as well as a multi-factorial analysis, which assigns factor weights in view of the simultaneous presence of all factors.[3] Overall, the study shows particle positioning to be determined by factors from all of the linguistic levels listed above, such that (i) literal (i.e. spatial) particles, (ii) pronominal, simple, short (< 3 words) and definite realisations of the direct-object NP and (iii) concrete as well as discourse-old referents work towards a preference for the post-object position of the particle.[4] In contrast, (i) idiomatic (but not necessarily transparently metaphorical), (ii) lexical, long and complex realisations of the direct-object NP and (iii) non-concrete as well as discourse-new referents contribute to a preference for the post-verbal position of the particle. The author stresses that many of these factors are tightly correlated (cf. ibid.: 49-61): literal particles, for example, will co-occur with concrete object-NP referents. Along the same lines, discourse-new referents are usually indefinite, require a lexical realisation and are thus – at least if the head of the NP needs to be complemented or modified – usually not just relatively longer, but also syntactically more complex. Their processing is, in other words, relatively more costly. The results are thus explained with reference to an overarching processing-related hypothesis which assumes that speakers unconsciously decide for one of the placement options because they strive to minimize production

[2] The study included only the most frequent verbs, taking VPCs that allow for both positioning options: *put, bring, take, turn, throw, pull, call, get, keep, kick* as well as the most frequent particles: *up, out, off, down, in, away, back, over, on, around* in syntactic contexts where the direct object appears in post-verbal position.

[3] Specifically, the author employs a General Linear Model in the form of a *discrimination analysis*.

[4] The latter is defined via (i) large amounts of previous mentions (> threshold value 6) and (ii) short distance to last mention (2.03 clauses on average, SD 3.56, as opposed to 6.07 clauses for verb-adjacent particles, SD 4.37).

effort and maximize ease of comprehension. These empirical findings are chosen as the point of departure here because they are informative, not just about particle positioning itself, but also about the nature of transitive phrasal verbs – and even of the probabilistic nature of (many, if not most) grammatical choices more generally. At the very least, it follows from these results that the study of single factors in isolation allows only partial insights into the multi-dimensional phenomenon at hand.

This paper will bring up a number of aspects involved in viewing transitive phrasal verbs as *verb-particle constructions* (henceforth also VPCs) in the construction-grammar sense of the term. It will discuss in how far the two word-order templates *Verb-Object-Particle* (henceforth V-O-Prt) and *Verb-Particle-Object* (henceforth V-Prt-O), as candidates for two highly schematic, semantically and pragmatically distinct constructions (Gries 2003), must be distinguished from lexically more specific constructions, i.e. particular phrasal verbs as partially schematic/formal idioms which can be more or less strongly attracted to either of the former. In this context, it will also examine the role "allostructions". Special emphasis will be put on the fact that V-O-Prt and V-Prt-O belong to different *construction networks* (Fillmore et al. 1988), thus playing different roles in, for instance, the acquisition of these networks. While an exhaustive characterization of the issues involved in this is far beyond the scope of this paper, the role of transitive phrasal verbs exhibiting V-O-Prt as *precursors* (Diessel 2004) to full-blown, prototypical realisations of the caused-motion construction, which are lexically and syntactically more complex than (literal) transitive phrasal verbs, will be explored in some detail.

To this end, this paper will first report the results of two previous, multifactorial studies of particle placement in early child language (Diessel and Tomasello 2005, Gries 2011) and then present the first results of a pilot study by the author that investigates data from English-speaking children in their 3rd, 6th and 8th year of life. Rather than focussing on particle placement as such again, this study attempts to trace the changing configurations of certain key features of the constructions children produce and compare them to adult usage. Among the features presently included in the analysis are (i) the number and kinds of particles, (ii) particle placement and (iii) selected semantic characteristics of the constructions.

II. PARTICLE PLACEMENT IN EARLY CHILD LANGUAGE

Diessel and Tomasello (2005) replicated Gries (2003) for early child language on the basis of data from two children aged 1;6 to 2;3, viz. Peter, recorded in the Bloom files of the CHILDES database, and Eve, recorded in its Brown files. They investigated 450 tokens of transitive phrasal verbs, including phrasal verbs with multiple particles or particles plus directional adverbials. Their main findings did not only confirm earlier results about what has become known in the generative literature as the "stranded particle stage", i.e. about the overwhelming predominance of the word order option V-O-Prt (V-O-Prt: 421, V-Prt-O: 29). They also found that expressions exhibiting V-Prt-O occur only with a rather restricted range of particles, viz. *up, on, off, out*, and only after the children's second birthday. In order to tease apart confounded factors in the multi-factorial analysis, the authors employed a *logistic regression analysis*. Their major findings are that, like adult particle positioning, the children's word-order decisions are also governed by a set of interrelated factors, but this set is a subset of the adult criteria for particle placement and only includes (i) the NP type of the direct object (lexical vs. pronominal), which was most pronounced and correlated with both the length and the complexity of the NP, and (ii) the meaning of the particle (spatial vs. non-spatial). To this, it should be added that the children's constructions closely mirrored those of their mothers.

Gries (2011) in turn presents a replication and extension of the study by Diessel and Tomasello (2005).[5] Gries investigates data from 3 children aged 1; 6 to 5 years (CHILDES: Kuczay: Abe, Brown: Adam, Suppes: Nina), thus including later stages of acquisition. By and large, this study confirmed the previous results about the predominance of the ordering V-O-Prt (here 95%) and about the factors determining particle placement: while particles marking a (spatially defined) end-state made all children prefer V-O-Prt, this ordering was generally dispreferred when the particle served as a (grammaticalized) completive.[6] In contrast to the previous study, Gries (2011) takes into account individual differences between the children, observing for instance that Nina seemed to have formed a generalization missing from those of the

[5] Gries also included an additional phonological determinant of positioning choice (CV alternation).
[6] In which way this category is related to figurative uses of either the particle or the entire combination or both is left open.

other two children when she dispreferred V-O-Prt with the NP type "proper noun". Of the greatest interest/relevance to the construction grammarian, however, are probably those findings which suggest that, in contrast to previous claims by Diessel and Tomasello, "rote learning" may have a role in particle placement. Only about a tenth of all verb types used by the children allowed for both particle positions (Abe: 13.3%, Adam: 10.5%, Nina: 13.7%), with some verbs occurring in VPO more frequently than chance would predict (ex (3.a)), and other verbs, especially those with a high frequency of occurrence in the children's speech, strongly preferring VOP (ex (3.b)). From a cursory look at (3.a), it appears that these verbs might well be associated with very specific scenarios in the children's world, such as putting on and taking off clothes, or picking things up off the floor after a play session, and thus present instances of second-level stereotyping.

(3.a) Abe: *put on, pick up*; Adam: *put on, take off, get out*; Nina: *take off, pick up*

(3.b) Abe: *put in, get off, take off, take out, throw away*; Adam: *eat up, knock down, put up, punch out*; Nina: *put in, want on, have on, wear on*

III. TRANSITIVE PHRASAL VERBS AS "CONSTRUCTIONS" IN CONSTRUCTION GRAMMAR

Treating transitive phrasal verbs as constructions in the construction-grammar sense of the term is not as trivial a task as a cursory look at the issue might suggest, for two reasons. Firstly, in formalist/transformational approaches to syntax, particle positioning presents an instance of a syntactic "alternation" – a concept that standard CG-approaches have avoided for a number of reasons (Cappelle 2006). Apart from this, a few additional considerations are required for models that deserve the label *usage-based*. These models define units as cognitive routines, whose degree of entrenchment correlates with their frequency of occurrence in usage. Through the recognition of similarities between multiple instances, units of a similar structure (i.e. of a similar part-whole composition in the horizontal plane) are connected via relations of instantiation/elaboration and schematization. From a usage-based perspective, (seemingly) redundant instantiations of one and the same schema at various levels of specificity are thus not only possible, but also plausible. For an informal illustration of

this, consider the following, progressively more schematic non-literal examples of verb phrases in the caused-motion construction:

(4.a) *put emphasis* [$_{PP}$ *on* [NP]], *put pressure* [$_{PP}$ *on* [NP]], *put responsibility* [$_{PP}$ *on* [NP]]

(4.b) *put* [$NP_{abstract\ mass\ noun}$] [$_{PP}$ *on* [NP]]

(4.c) $VERB_{caused\text{-}motion}$ [$NP_{abstract\ mass\ noun}$] [$PP_{metaphorical\ source/goal}$]

An adequate treatment of verb-particle constructions as "constructions" must therefore, secondly, incur verb phrase generalizations at various levels of schematicity simultaneously, not all of which are equally unproblematic. To take up the most straightforward aspects first, any specific transitive phrasal verb (as a lexeme) clearly needs to be defined at an intermediate level of schematicity, i.e. it presents a so-called *formal idiom*, where both the verb and the particle, but not the direct-object NP, are lexically specific (ex (5.a)). Apart from these, there are also a considerable number of entirely lexically fixed idiomatic verb phrases with phrasal verbs (ex (5.b), taken from Capelle, 2006: 13), all of which can in turn be seen as conventionalized elaborations of the mid-level schema.

(5.a) *put out* [$NP_{dir\ o}$] / *put* [$NP_{dir\ o}$] *out*; *roll up* [$NP_{dir\ o}$] / *roll* [$NP_{dir\ o}$] *up*; *take away* [$NP_{dir\ o}$] / *take* [$NP_{dir\ o}$] *away*; *throw in* [$NP_{dir\ o}$] / *throw* [$NP_{dir\ o}$] *in*; *turn back* [$NP_{dir\ o}$] / *turn* [$NP_{dir\ o}$] *back* ...

(5.b) *put out feelers / put feelers out*; *roll up one's sleeves / roll one's sleeves up*; *take away so.'s breath / take someone's breath away*; *throw in one's hand / through one's hand in*; *turn back the clock / turn the clock back* ...

The interesting/problematic issues concern (i) the completely schematic level comprising the two positioning options of the particle, i.e. the word-order templates V-O-Prt and V-Prt-O, and (ii) the integration of particle placement in the model. So far, two divergent suggestions have been made by Gries (2003) and Capelle (2006).

Gries (2003: 132-143) treats the word-order templates V-O-Prt and V-Prt-O as two different, entirely schematic verb-phrase constructions, each with the semantic and discourse-pragmatic characteristics summarized above. To recapitulate: V-O-Prt is preferred in spoken language (as well as children's talk) for the expression of caused-motion meanings, i.e. of scenarios which involve the movement of concrete and

accessible objects to or from a spatially defined goal (hence relatively short phrases of low complexity taking up discourse-old referents as most typical referents of the direct-object NP). V-Prt-O, on the other hand, is preferred with discourse-new referents of the direct-object NP as well as with idiomatic meanings of the verb-particle combination, i.e. with non-spatial transitive scenarios, where the direct-object NP typically expresses referents that are non-concrete and/or inaccessible (hence relatively long phrases of a higher complexity). What is certainly special about these categorisations as the semantic poles of the two verb-phrase constructions V-O-Prt and V-Prt-O is the dominance of discourse-pragmatic over strictly semantic information, especially with V-Prt-O. Given that construction grammars assume a continuum uniting semantic and discourse-pragmatic aspects of the conceptual content expressed, such a constellation should not be disallowed in principle, though it raises questions about the ways in which information from a more generic/schematic construction can be inherited by its more specific instantiations, i.e. about whether Goldberg-style inheritance links are the only kinds of relations between a schema and its instantiation. In this case, the discourse-related information associated with each word-order template strongly motivates certain kinds of expressions, but violations do not automatically create unacceptable expressions.

Despite these open issues, it must be stressed that the postulation of the two schematic verb-particle constructions is highly plausible within a strictly usage-based framework and in view of the results obtained from the quantitative analysis presented in Gries (2003), as the different, very complex usage-properties of the two word-order options arise as statistical tendencies from the analysis (or from any given speaker's experience) of a large number of specific expressions. In other words, at the most schematic level (i.e. irrespective of any specific lexical realisation), the properties of V-O-Prt are decidedly distinct from those of V-Prt-O, and both are in sync with the diverging demands arising from their respective discourse environments. This is not necessarily the case at the level of the specific instantiation, or even at the intermediate level of the particular phrasal verb. Any given realisation could in principle go against the broader usage tendency without becoming ungrammatical, because decisions about particle placement are generally probabilistic and not categorical – with the exception of (i)

those verbs that are restricted to one ordering, and (ii) the well-known limiting case of unstressed, pronominal object NPs requiring V-O-Prt with any transitive phrasal verb.

Criticizing this postulation as "extreme constructivism", Capelle (2006: 18-25) argues that the two word-order generalisations should not be treated as categories that are completely distinct in the minds of speakers, as it is plausible to assume that speakers are aware that two expressions with the same phrasal verb, but different particle positions are semantically (i.e. truth-conditionally) identical. To account for this, he introduces the notion of "allostruction" and presents the two orderings as bi-directionally associated variants of one and the same schematic phrasal construction, which is formally underspecified, viz. with respect to the positioning of the particle (ex (6), cf. ibid.: 18, Fig. 1). In analogy to inheritance links in Goldberg's model, the link between the two allostructions is assumed to constitute a syntactic object in its own right.

(6.a) $[_{VP}$ trans V Prt $NP_{direct\ Obj}]$ ⇔ $[_{VP}$, trans V $NP_{direct\ Obj}$ Prt]

(6.b) $[_{VP}$ trans V {Prt} $NP_{direct\ Obj}$ {Prt}]

Notwithstanding the obvious need for – or the psychological plausibility of – a link between closely related expressions, i.e. expressions with identical phrasal verbs, but differing positioning realisations of the particle, I suggest that this issue cannot be resolved without making explicit the precise level of specificity at which each single generalization can be justified. From a usage-based perspective, "allostructions" at the most generic level are highly implausible and could in a way also be labelled "extreme". Firstly, as expounded above, the usage tendencies that transcend the specifics of the use of any particular phrasal verb will be maximally distinct, as schematizations over all usage events bundle the most frequent usage configurations into prototypes that are quite far apart from one another. Secondly, the formally underspecified, overarching super-construction (ex (6.b)) that is required to unite the two allostructions at the most generic level is unmotivated, as it remains unclear what the semantic pole of this construction should consist of – presenting, as it were, a generalization over the discourse properties and already extremely generic semantic specifications of the two word-order templates.

Clearly connected in the minds of speakers, however, are the two different uses of each specific phrasal verb that allows for both ordering options – if only for the obvious reasons of the shared lexical material and the similar truth-conditional semantics of all expressions that only differ with respect to particle placement. It is thus at the intermediate and the lowest level of generality, i.e. the levels of the phrasal verb as either a formal or a substantial idiom, where particle placement must be incorporated in the model and where the notion of "allostruction" can be most fruitfully implemented. The associative link arising from the existence of pairs of expressions making similar contributions to the (truth-conditional) semantics of the clauses they appear in creates formally underspecified constructions with two options for particle placement and either a lexically schematic or a lexically substantial NP slot:[7]

(7.a) [$_{VP}$ *put out feelers*] ⇔ [$_{VP}$ *put feelers out*], [$_{VP}$ *put out* [NP]] ⇔ [$_{VP}$ *put* [NP] *out*]

(7.b) [$_{VP}$ *put* {*out*} *feelers* {*out*}], [$_{VP}$ *put* {*out*} [NP] {*out*}]

The relation between the two schematic word-order constructions V-O-Prt and V-Prt-O and the lexically bound/lower-level constructions with positioning variants (allostructions) is one of elaboration, with any given phrasal verb or even phrasal-verb idiom being attracted with a particular strength to one (or both) of the word-order options provided by the most schematic constructions. Empirically, this can be measured by means of a *simple collexeme analysis*, a method from the framework provided by *collostruction analysis* (Stefanowitsch and Gries 2003), which measures the degree of mutual attraction (or repulsion) between a construction and the lexical instantiations of one of its slots.[8]

One further aspect that has largely remained implicit in the literature relates to the fact that the two generic word-order constructions V-O-Prt and V-Prt-O participate in different construction networks and are influenced by different sets of motivating relations and networks of choices. Gries (2003: 142) points out that (early, prototypical) elaborations of V-O-Prt refer to the manipulation of the spatial positions of concrete objects and thus constitute a subset of the *Caused-Motion Construction* (henceforth also CMC, cf. Goldberg 1995). To this it should be added that expressions realising V-Prt-O

[7] Although Cappelle (2006) stresses that his postulation does not entail the assumption of a complementary distribution (which can be seen as the limiting case of contrasting usage patterns), I find the term *allostruction* misleading for precisely this association.

[8] For experimental evidence in support of the method, see Gries et al. (2005, 2010).

typically constitute informal alternatives to semantically highly specific mono-lexemic verbs. Although they express transitive scenarios that are certainly not restricted to motion and that often involve abstract object referents, they differ from their mono-lexemic alternatives because they exhibit an imagistic dimension, viz. the properties of the spatial relation depicted by the particle, serving as a source domain of figurative shifts. As phrasal verbs with transparent motivations of verb and particle preserve this contribution of the particle (with the exception perhaps of the strongly grammaticalized uses of completive *up* and durative *on*), the question arises as to whether and in which way transitive phrasal verbs precede their mono-lexemic alternatives in acquisition and thus pave the way towards the mastery of more abstract meanings. While this big question goes beyond the confines of this paper, the role of V-O-Prt in the resultative family or network (Goldberg and Jackendoff 2004, Hampe 2011) will be explored, both as regards its role as one of the precursors to full-blown instances of the caused-motion construction and with respect to its relatedness to the latter in adult usage.

Usage provides another aspect connecting caused-motion constructions and phrasal verbs, which may be easily overlooked in analyses that disregard the lexical characteristics of actual usage. Strong paradigmatic restrictions on seemingly open slots can lead to partial chunking within the lexical realisations of a given construction, which may to some extent blur the boundaries between neighbouring constructions. Seemingly complex structures thus come to resemble simpler ones. Lexically stereotyped instantiations of the resultative phrase in the CMC, for example, might turn it into an unanalysed whole that is much like a simple adverb and thus bring the entire construction closer to transitive phrasal verbs.

(8) put X *at risk,* leave X *in abeyance,* take X *on board*, etc.

A final issue concerns the role in later/adult usage played by strategies that are employed in early child language. In two classic articles on syntax and discourse from 1979 (Givon 1979, Ochs 1979), genre and acquisition perspectives are brought together. It is emphasized that early usage strategies – which together define what Givon calls the "pragmatic mode" – may be retained in some forms of adult usage, rather than entirely replaced by the later, more elaborate strategies which define a more "syntactic mode" and enable the language user to express more precise meanings in a relatively context-

independent way. They are generally found in (predominantly written) adult genres which do not put as extreme a planning/ production pressure on the speaker as does real-time conversation. In other words, what appears in acquisition as a movement towards a more syntactic mode re-surfaces in adult usage as genre variation.

The use of particular constructions may be a part of these different strategies or repertoires, such that early constructions, like V-O-Prt, might still dominate adult usage in spontaneous informal talk.[9] In contrast, later constructions, such as V-Prt-O, may be overused for stylistic reasons in formal written registers – and even appear in linguistic contexts (for instance with spatial meanings or object-NPs of a very low complexity) that do not strictly require or strongly prefer them. Such genre effects might remain partially or entirely veiled in corpus studies that contrast data from the spoken mode with data from the written mode, irrespective of the properties of the genres that the data are sampled from.

IV. TRANSITIVE PHRASAL VERBS AS PRECURSOR CONSTRUCTIONS

Transitive phrasal verbs leave the reference point of the spatial relation expressed by the particle implicit. They are thus semantically and syntactically simpler than full-blown instantiations of the Caused-Motion Construction. It is therefore well worth asking to what extent transitive phrasal verbs serve as precursors in the acquisition of the resultative network, especially the CMC itself. In this capacity, they might be related to other constructions with similar properties that are not usually considered proper instances of transitive verb-particle constructions. Obvious candidates are provided by expressions of a similar form where a deictic or non-deictic adverb, rather than a spatial particle, realises the resultative phrase after the direct-object NP:

(9.a) put that *there*, bring it *here*

(9.b) take that *home*, put that one *outside*

It can be assumed that these partially strictly situation-bound ways of describing a spatial relation are at least as undemanding as an expression with a spatial particle. For a

[9] This does not hold if a precursor is ungrammatical from an adult perspective: the 'presentational amalgam construction' as a precursor of an adult relative clause, for instance, disappears in adult (standard) British and American usage (Diessel 2004: 134-135).

young child with no command over V-Prt-O, expressions like those in (9) and transitive phrasal verbs with spatial meaning in V-O-Prt must appear as instantiations of the same pattern, viz. an early, simple caused-motion construction.

V. GOALS AND METHODS OF THIS STUDY

For an illustration of some of the points discussed above, the pilot study presented here investigates (a part of) the caused-motion network in British English across 3 age groups in order to study the relation between VPCs, other precursor constructions and the CMC, as well as the occurrence of the order V-Prt-O in conjunction with non-spatial uses of transitive phrasal verbs. In addition, it will also examine to which extent the early pattern provided by V-O-Prt remains the prevalent option in spontaneously spoken adult language, though it is superseded by V-Prt-O in more formal written genres and known to be generally more frequent in adult usage.

The child data are gathered from the British part of the CHILDES database. The two age groups are chosen to coincide with the lower and the upper end of the time span investigated in the previous studies introduced in section 2. The data for the first age group, roughly encompassing the 3rd year of life (22-36 months), come from 5 of the 12 files of the MANCHESTER corpus (Anne, Aran, Becky, Gail, Domin).[10] For the second group, data from 5- and 7-year-old children are taken from two of the three files of the FLETCHER corpus, in total comprising data from 72 children.[11] The third age group comprises adult data from the spoken part of the ICE-GB. In order to keep apart the effects of mode and genre in adult usage, the results obtained from the spoken part of the ICE-GB are compared to those from its written part as well as to the results of an additional study, employing genre-specific BNC data that were extracted from files containing only spontaneously spoken language and texts from broadsheet newspapers, respectively.

In order to trace the relation in acquisition between transitive VPCs and more elaborate instances of the CMC, all tokens of those caused-motion verbs that constitute the most

[10] The Manchester Corpus of CHILDES was compiled by Elena V. M. Lieven, Julian Pine, Caroline Rowland and Anna Theakston (cf. Theakston et al. 2001, Johnson 1986).
[11] The Fletcher Corpus of CHILDES was compiled by Paul Fletcher, Michael Garman, Michael Johnson, Christina Schelleter and Louisette Stodel (cf. Fletcher and Garman 1988).

typical dynamic collexemes of the CMC in the ICE-GB (ex (10), cf. Hampe 2011) were also retrieved from the child data. These verbs present a subset of the verbs investigated in Gries (2003, see note 2). Moreover, as components of verb-particle constructions, these verbs are semantically "light" in that the information coded by the verbs does not add much to the meaning of the construction, which is precisely instantiated by *put*. In other words, in all of these combinations, the particle will be more informative than the verb and carry the brunt of the meaning of the combination (cf. also Geld and Krevelj, 2010).[12]

(10) *put, bring, get, set, take, leave, turn*

Though by far not all of the children's phrasal verbs are thus included in the study, those that are contain verbs that have long been claimed to be *path-breaking* in the acquisition of the CMC (most notably *put*, the strongest collexeme of the CMC) and thus ensure the greatest possible comparability with full-blown instances of the CMC. This way, it will be possible to investigate how far this path-breaking function is initially bound to a simple realisation of the resultative phrase as a spatial particle or (deictic) adverb rather than a prepositional phrase.

From the child corpora, the data were retrieved with maximal recall by inspecting *all* occurrences of the respective verbs manually. The relevant instances from the ICE-GB were taken from an earlier study (Hampe 2011) that had analysed the environments of all verbs parsed as *complex-transitive* (cxtr.). This initial data set was then completed by retrieving all occurrences of the verbs listed in (10) which are not parsed as *cxtr.* and which are followed by either of the tags <adv(phras)> or <prep(phras)> within a span of up to ten words (not containing another verb). This was done by means of the REGEX option in ANTCONC, whereby the search string was applied to a txt version of the corpus, which all tags had been removed from prior to the query, except for the two tags given above, all verb tags and all corpus-file tags.[13]

All instances of the seven verbs with a spatial particle before the direct-object NP or with a spatial particle, deictic adverb, prepositional phrase (or even a sequence of any of these) after the direct-object NP were included in the investigation, i.e. coded as true

[12] It is presently unclear to what extent such a combination presents an additional factor supporting V-O-Prt.
[13] I wish to thank Katja Fleming for preparing the corpora with the help of R.

hits. In contrast to the route taken by Gries (2003) and others, who studied particle placement per se, I did not exclude cases in which the direct-object NP does not appear in its original position due to passivization or occurrence in object-interrogative/-relative clauses, but kept track of these by the coding employed so that they appear as a third word-order option.

To complement this data set with more genre-specific data from the BNC that are not pre-determined by the semantic and lexical characteristics of the verbs chosen for the developmental part of the study, all BNC files containing either spontaneously spoken language or material from broadsheet newspapers were investigated for sequences of any main verb followed by the tag <w AVP> within a span of up to ten intervening words that are not verbs. This was again done with the help of the REGEX option in ANTCONC. The search string retrieved transitive phrasal verbs and their closest relatives, e.g. expressions with multiple particles or phrasal-prepositional verbs (ex (11a.b)). Of the approximately 17,000 hits that this procedure yielded per genre, the first 1,000 true hits of the randomized output were coded in the same way as the data from the other corpora.

(11.a) And in ten minutes if they ain't down here, I'm going *back up there*! (KCN)

(11.b) … the match against Hampshire at Basingstoke which petered *out into a draw* yesterday… (K4T)

The results of all studies were evaluated mono-factorially by comparing the frequencies of single feature values across age groups or genres. In addition, the data from the CHILDES files as well as the data from the spoken part of the ICE-GB were evaluated in a more explorative way by means of a *hierarchical configurational frequency analysis* (HCFA). This method is designed to detect all combinations of feature levels that occur with a frequency significantly above chance. It was carried out by means of an interactive script in R (HCFA 3.2) written and kindly provided by Stefan Th. Gries. Included in the analysis were the following four features:

(12)
- CONSTRUCTION (NUMBER OF ELEMENTS IN RP): single particle vs. sequence
- PARTICLE POSITION:[14] V-O-Prt, V-Prt-O, V-Prt
- DEICTICS: presence or absence of a deictic adverb
- SEMANTICS OF THE COMBINATION: spatial/literal; specialized; figurative

[14] In cases of sequences of elements, the position of the first element was taken into account.

VI. HYPOTHESES

In accordance with the findings of previous studies as well as the preceding considerations, the following assumptions are made:

(i) Spatial particles will present the earliest, typical realisation form of the resultative phrase (RP) in the caused-motion construction. In the child data, transitive phrasal verbs exhibiting V-O-Prt will thus outnumber full-blown CMCs, whose RPs are semantically and syntactically more complex. This effect will decrease with age, though it might not disappear entirely in spoken adult language.

(ii) V-O-Prt will be the most frequent order in the child data and probably also in spontaneously spoken adult language. The latter trend might be veiled in the ICE-GB data.

(iii) Expressions with deictic adverbs like *here*, *there* or other adverbs (like *home*) will likewise serve as precursors to the CMC, as they also code caused-motion meanings and are close to (if not even simpler than) transitive phrasal verbs exhibiting V-O-Prt. Though of initial importance, their frequency will decrease with age, as they do not usually occur in V-Prt-O and do not contribute to the expression of non-spatial meanings.

(iv) Although the frequency of V-Prt-O is known to increase both with age and with the shift towards formal written genres, this order will remain marginal in all of the child data: firstly, because other deictic and non-deictic adverbs are excluded from it and, secondly, because "figurative/metaphorical competence" only starts to develop around the age of 7 (Liu 2008: 94-97). Of the few expressions with non-spatial meanings, however, most will be attracted to V-Prt-O (where this is not ruled out by object pronominalization). Those that are not are expected to be highly transparent or to exhibit only instances of "first-level" metaphor.

(v) As particle combinations (with or without a deictic adverb: *back in*, *down there*, etc.) make the description of the endpoint of a path more precise in that the second element adds to the information provided by the first, it can be expected that they help children express spatial scenarios. There might also be a role for such sequences in adult usage, especially if the combination takes on the more complex

form of one or more particles preceding one or more prepositional phrases (*up on the shelf, down here in the box*, etc.).

(vi) As constructions become more diversified in the course of development, with the number of available options multiplying, the amount of variation in the spoken adult data from the ICE-GB will be very large (also because these are not genre-specific). In the younger age groups, however, it is expected that a smaller number of feature constellations – excluding the feature-level "figurative" – will characterize a bigger portion of the entire material.

VII. RESULTS AND DISCUSSION

In the early child data from the Manchester corpus – both the pooled data and the individual data for each child – transitive phrasal verbs (i.e. expressions with particles as resultative phrases) clearly outnumber full-blown CMCs (i.e. expressions with PPs as resultative phrases) containing the same verbs (cf. Appendix: Figure 1.1). At the same time, the number of full-blown instances of the CMC are steadily increasing with age, even already within the time span documented in the Manchester corpus, i.e. the third year of life (cf. Appendix: Figure 1.2), though the overall effect size here is small (Cramer's V = 0.145), due to the fact that the observed frequencies for CMCs are higher than expected only from month 31 onwards, with again relatively small residuals (2.63, 1.58 and 2.22, in months 31, 32 and 33, respectively). In addition, there is considerable variation in the data for each individual child (cf. Appendix: Figures 1.3a, b).

The comparison across age groups requires the exclusion of all expressions in the increasingly frequent word order V-Prt-O, which is *not* associated with caused-motion scenarios.[15] The results show that the frequencies of full-blown instances of the CMC steadily increase with age: while these are already roughly on a par with VPCs in the Fletcher data, they outnumber VPCs in the ICE-GB (cf. Appendix: Figure 1.3). The differences between the age groups are highly significant, with the CMC exhibiting the highest residuals in the ICE-GB (+9.4) and the lowest in Manchester (-7.4). Vice versa, VPCs exhibit the highest residuals in Manchester (+5.9) and the lowest in the ICE-GB

[15] To make sure there are no examples with doubtful word orders left in the Manchester data either, incomplete or otherwise doubtful tokens were excluded from this count. The overall number of VPCs in Figure 1.4 is thus slightly lower than in Figure 1.1.

(-7.4). The residuals in Fletcher point in the same direction as those in the spoken adult data, but are a lot smaller (VPC: -2.8, CMC: +3.5). The overall effect size is moderate (Cramer's V = 0.29). There is no significant difference between the two language modes in the ICE-GB.[16]

The inclusion of other expressions with adverbs in post-object position completes this picture in that it brings out the preference in early child language for simple as well as deictic realisations of the resultative phrase in caused-motion expressions. As concerns deictics, more than 80% of all expressions with adverbs as RPs in the data from both CHILDES corpora contain one of the deictic adverbs *here, there,* and *over there*, which are practically absent from the adult data.[17] Apart from that, expressions with particles or adverbs outnumber those with prepositional phrases only in the two child corpora (74.02% in Manchester and still 66.79% in Fletcher), while the situation in the spoken part of the ICE-GB is nearly reversed, with 59.39% of all expressions exhibiting RPs in the form of prepositional phrases (cf. Appendix: Figure 1.5). The highest positive residuals are thus to be found with full-blown CMCs in the ICE-GB (+11.65) and constructions with simple RPs in Manchester (+4.85), while the lowest provide the mirror image: -6.7 for full-blown CMCs in Manchester and -8.4 for constructions with simple RPs in the ICE-GB. The residuals for the frequencies in Fletcher point in the same direction as those in Manchester, but are smaller than 1 and thus near the chance distribution. The overall effect size is again moderate (Cramer's V = 0.28). In sum, the early preference for simple and frequently also deictic constructions, as well as the trend towards more complex constructions with increasing age strongly support the assumption of a precursor-role of transitive phrasal verbs of the word order V-O-Prt in the acquisition of the CMC.

To take a closer look at particle positioning itself, the word order V-Prt-O is excessively rare in the early child-language corpora, but increases with age, as expected. The same goes for V-Prt (cf. Appendix: Figure 2.1). Counting out the latter (cf. Appendix: Figure 2.2), the distribution of the word-order frequencies changes significantly across age

[16] Spoken part of the ICE-GB: VPC: 295, CMC: 449; written part of the ICE-GB: VPC: 129, CMC: 225 (chi-squared = 1.043, df = 1, p-value = 0.307, n.s.).

[17] In the Manchester corpus 142 of the 174 adverbs are deictic (81.61%). In the Fletcher corpus, 162 of 188 adverbs are deictic (86.17%). The latter frequency, esp. of the deictic expressions, is probably an artefact of the experimental situation: the children were required to take figures from a board and stick them back on after play.

groups with a very strong effect (Cramer's V = 0.599). The highest positive residual is found with V-Prt-O in the spoken adult data from the ICE-GB (+22.66), the highest negative residuals are found with V-Prt-O in the Manchester data (-10.73) and with V-O-Prt in the ICE (-6.87) –although the 193 expressions exhibiting V-O-Prt still account for 56.1% of all cases.

As concerns adult word-order variation due to language mode and genre (cf. Appendix: Figure 2.3), it turns out that V-Prt-O is not just more frequent in the written than in the spoken part of the ICE-GB, but also more frequent than V-O-Prt in the written data, occurring in 69.63% of all instances. Though these differences are highly significant, the effect is small (Cramer's V = 0.23). In the genre-specific BNC data, which come from spontaneously spoken language and broadsheet newspapers, respectively, and thus contrast sharply with respect to formality and spontaneity, these tendencies appear enlarged to a surprising degree (Cramer's V = 0.81). On the one hand, the formal and/or elaborated style of the broadsheet newspapers favours the word-order construction V-Prt-O, which is close to mono-lexemic transitive verbs, to the practical exclusion of V-O-Prt. On the other hand, the frequency of V-O-Prt in spontaneously spoken language remains very high (80.55%).

Indeed, and as hypothesized, the frequency of V-O-Prt is significantly higher in spontaneously spoken language than in genre-unspecific spoken data, though the effect is moderate (Cramer's V = 0.26). It was not expected, however, that the analogous difference between the frequency of V-Prt-O in the written genre of broadsheet newspapers and just any written data should be so much more pronounced (Cramer's V = 0.47).

Extreme data sparsity makes it impossible to assess the children's use of figurative phrasal verbs. The two figurative examples from the 5-year-olds in Fletcher show V-O-Prt, but only contain first-level metaphors (ex (13.a)), which still make it possible to refer to the resultant state of the lights or the fire as being *off* or *out*. They are thus not too far removed from a spatial use of these particles. All of the five examples from the 7-year-olds in Fletcher are highly transparent and involve a shift of meaning at the second level (ex (13.b)). They exhibit both V-Prt-O and V-O-Prt (ex (13b)), obviously due to the influence of factors other than their meaning.

(13.a) turn the light *off*, get the fire *out*

(13.b) *took* them a few centuries *back*, *get* one *up* to 1000, *put in* another story (2x), *take away* 10

The results of the three HCFAs (Appendix, Tables 1-3), carried out with the data retrieved from the two CHILDES corpora and the spoken part of the ICE-GB, confirm and extend the results of the mono-factorial analyses. Although they yield some insights into frequent complex configurations of specific feature-values, these results are to be taken with great care, as the effect sizes for all feature-level combinations are extremely small, indicating that a great amount of variation in the data is unaccounted for by the features chosen.

The results for single feature values, however, are robust and confirm that V-O-Prt is the single feature value occurring significantly above chance and with the highest effect size (above 0.9) in the data of both 2- and 3-year-olds documented in the Manchester corpus and the 5-/7-year-olds recorded in the Fletcher corpus (cf. Appendix, Tables 1 and 2). Apart from this, constructions with the following two single feature values occur significantly above chance in both age groups: constructions with only one particle and with literal (i.e. spatial) meanings.[18] The effects of both of these are still strong (Q between 0.6 and 0.9). While non-deictic constructions are likewise significantly frequent with a strong effect in the Manchester corpus (with deictic ones being significantly less frequent than expected by chance), this is not the case in Fletcher, where the feature "deictic" is more frequent and does not significantly diverge from a chance distribution (see note 17). Finally, the feature level "figurative", which is entirely absent from the Manchester corpus, does occur in the data from Fletcher, albeit with a frequency significantly below chance (Q = 0.48). The most conspicuous result in the spoken adult data from the ICE-GB (cf. Appendix, Table 3) thus relates to the frequency of the feature level "figurative", which now occurs significantly above chance with the third-largest effect size in this data set (Q = 0.37). Otherwise, non-deictic elements again outnumber deictic ones to such an extent that deictic constructions occur below chance with an effect size above 0.9. The word-order feature V-O-Prt remains significantly above chance, though the effect size is now small (Q =

[18] In the table, the feature relating to "number of particles" is called "construction" and this value is given as "VPC". Constructions with more than one particle are labelled "VPC_seq".

0.22) and thus dramatically lower than in the data from both child corpora.[19] In contrast, V-Prt-O, which occurred in the child corpora with a frequency significantly below chance (Q = 0.5 and 0.47, respectively), does not diverge significantly from chance. The feature level V-Prt remains below chance in all age groups, but is a lot smaller in the spoken adult data from the ICE-GB (Q = 0.18) than in the child data (Q = 0.49 and 0.48, respectively).

As regards feature combinations, in the data from the Manchester corpus (cf. Appendix, Table 1), three different kinds of feature-level constellations can be discerned. Firstly, the feature-value combination with the highest p-value and effect size (of all combinations involving more than two features) involves three features and relates to expressions that exhibit only one particle, which is non-deictic and occurs in post-object position (Q = 0.14). The most complex constellation involving all of these features-values plus the one for constructional meaning (*literal*), however, is weaker (Q = 0.095) than the second pattern. Rather interestingly, this second pattern, which constitutes the most complex feature-value constellation with the lowest p-value and highest (though still very small) effect size in this data set (Q = 0.10), points to the increased frequency of constructions with literal/spatial meanings that contain more than one particle in post-object position, one of which is deictic. The third pattern is also maximally complex, but so weak (Q = 0.04) that it is only reported here, because it goes against one of the hypotheses: it unites expressions with "specialized" meanings that exhibit one non-deictic particle in post-object position.

In the Fletcher data (cf. Appendix, Table 2), pattern 2, pertaining to expressions with literal/spatial meanings that exhibit several particles, including a deictic one, in post-object position, re-occurs as the feature constellation with the lowest p-value and highest effect size after the values of the single features. With Q = 0.07, the effect is tiny, however. All other significant feature combinations are so weak that they remain under an effect size of 0.01. One of these is identical to the third pattern found in the Manchester data, i.e. it unites expressions with specialized meanings, which – again unexpectedly – do not seem to motivate V-Prt-O. The other captures (the two) non-deictic figurative expressions in the word order V-Prt-O.

[19] Note that V-Prt is counted in here as a third feature-level.

Due to the increased number of options in the spoken adult data from the ICE-GB, all of the effect sizes of the significant feature-level combinations remain under 0.1. Interestingly, though, the new feature constellations pertain to figurative constructions where the verb and one non-deictic particle are immediately adjacent. This may occur with both of the orders V-Prt (highly significant, Q = 0.07) and V-Prt-O (very significant, Q = 0.08). Only a very weak reflection of the early child data is provided by literal/spatial combinations with several particles in post-object position, which may or may not be deictic (Q = 0.02 and 0.03, respectively).

This discussion should close on a note of caution. Much further work with this method of data evaluation is urgently required. Firstly, a lot depends on the specific feature selection employed. In the present analysis, some features (such as syntactic form or newsworthiness of the direct object), which previous studies have determined to be highly influential, have not been included in the analysis. It goes without saying that factors like these contribute to the large amount of unexplained variation in the data, reflected by the very small effect sizes of the feature-value combinations. Secondly, depending on the number of features and feature levels chosen, the corpora employed may have to be relatively big for certain patterns to surface with a frequency above chance in the first place.

VIII. CONCLUDING REMARKS

The realisation and choice of constructions is determined by a large range of (partially highly correlated) factors from all strata of the language system, as well as by dimensions of their users. In the case of transitive verb-particle constructions, preceding work suggests that choosing a particular construction over another, such as V-Prt-O over V-O-Prt (or vice versa), may entail choosing certain discourse-pragmatic values besides or even above choosing a particular constructional semantics. Though this possibility is clearly entailed by the assumption of a semantics-pragmatics cline in many construction-based grammars, it still raises principled issues for further research pertaining to what kinds of conceptualisations must be regarded as constituting the semantic pole of constructions and what kinds of relations can hold between a schema and its instantiations.

Beyond that, the present study has shown that a construction-based analysis can benefit from the consideration of a construction's location in its surrounding construction networks. The word-order construction V-O-Prt, for example, was shown to be an early member of the caused-motion network, serving as a precursor in the acquisition of full-blown instances of the CMC. In doing so, it parallels other early expressions with simple realisations of the resultative phrase, viz. as mono-lexemic adverbs, especially deictic ones.

The data on particle placement across adult language modes and genres, finally, have demonstrated that the linguistic differences between unplanned, spontaneous adult talk and more planned, elaborate forms of adult language use are indeed not entirely unlike those between the early and late stages of the developmental trajectory. In particular, early constructions (such as V-O-Prt with transitive phrasal verbs) may well be retained and continue to be dominant in certain (spontaneous, unplanned) genres of adult usage, while later ones (such as V-Prt-O) will generally complement, rather than fully replace them. The near-exclusive occurrence of V-Prt-O in the BNC data sampled from broadsheet newspapers presents an extreme case that may be stylistically motivated. Clearly, these results call for more research on the influence of highly specific genre-requirements.

Finally, the results have also shown that further research is needed on the usage of phrasal verbs by older children and teenagers. The huge differences in the frequencies of the word order V-Prt-O and of the feature-value "figurative" between the data from Fletcher and the adult data from the ICE-GB suggest that V-Prt-O really develops after the age of 7, very likely in conjunction with the emergence of "figurative competence". The latter remains an important issue for future research, not just because of current data sparsity, but also because the consistent coding of non-literal examples for the number and kinds of metaphorical shifts is extremely difficult and requires reliable coding by several trained investigators.

REFERENCES

Bolinger, D. 1971. *The Phrasal Verb in English*. Cambridge, MA: Harvard University Press

Cappelle, B. 2006. "Particle placement and the case for "allostructions"". *Constructions* 1, 28 pgs. <http://elanguage.net/journals/constructions/article/view/22/27>

Diessel, H. 2004. *The Acquisition of Complex Sentences*. Cambridge: Cambridge University Press.

Diessel, H. and Tomasello, M. 2005. "Particle placement in early child language: A multifactorial analysis". *Corpus Linguistics and Linguistic Theory* 1 (1), 89-111.

Fillmore, C.J., Kay, P. and O'Connor, C.M. 1988. "Regularity and idiomaticity in grammatical constructions: The case of *Let alone*". *Language* 64 (3), 501-538.

Fletcher, P. and Garman, M. 1988. "Normal language development and language impairment: Syntax and beyond". *Clinical Linguistics and Phonetics* 2, 97–114.

Givon, T. 1979. "From discourse to syntax: Grammar as a processing strategy". In Givon, T. (Ed.) *Syntax and Semantics* (Vol. 1). New York: Academic Press, 81-112.

Geld, R. and Krevelj, S.L. 2010. "Centrality of space in the strategic construal of up in English particle verbs". In Brdar, M., M. Omazic, V. Pavicic Takac, T. Gradecak-Erdeljic and G. Buljan (Eds.) *Space and Time in Language*. Frankfurt am Main: Peter Lang, 145-166.

Goldberg, A.E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure.* Chicago: The University of Chicago Press.

Goldberg, A.E. and Jackendoff, R. 2004. "The English resultative as a family of constructions". *Language* 80 (3), 532-568.

Gries, S.T. 2003. *Multifactorial Analysis in Corpus Linguistics. A Study of Particle Placement.* London/New York: Continuum.

Gries, S.T. 2011. "Acquiring particle placement in English: A corpus-based perspective". In Medina, P.G. (Ed.) *Morphosyntactic Alternations in English: Functional and Cognitive Perspectives*. London/Oakville, CT: Equinox, 235-263.

Gries, S.T., Hampe, B. and Schönefeld, D. 2005. "Converging evidence: Bringing together experimental and corpus data on the associations of verbs and constructions". *Cognitive Linguistics* 16 (4), 635-676.

Gries, S.T., Hampe, B. and Schönefeld, D. 2010. "Converging evidence II: More on the association between verbs and constructions". In Rice, S. and J. Newman (Eds.) *Empirical and Experimental Methods in Cognitive/Functional Research*. Stanford, CA: CSLI Publications, 59-72.

Hampe, B. 1997. "Towards a solution of the phrasal-verb puzzle: Considerations on some scattered pieces". *Lexicology* 3 (2), 203-243.

Hampe, B. 2002. *Superlative Verbs. A Corpus-based Study of Semantic Redundancy in English Verb-particle Constructions*. Tübingen: Gunter Narr Verlag.

Hampe, B. 2011. "Discovering constructions by means of collostruction analysis: The English denominative construction". *Cognitive Linguistics* 22 (2), 211-245.

Johnson, M. 1986. *A Computer-based Approach to the Analysis of Child Language Data.* unpubl . Ph. D. dissertation, Reading, UK: University of Reading.

Lindner, S. J. 1983. *A Lexico-Semantic Analysis of English Verb-Particle Constructions with "out" and "up"*. (LAUT Paper, no. 101). Trier, Germany: Linguistic Agency of the University of Trier.

Liu, D. 2008. *Idioms. Description, Comprehension, Acquisition and Pedagogy*. London: Routledge.

Morgan, P. 1997. "Figuring out 'figure out'. Metaphor and the semantics of the English verb-particle construction". *Cognitive Linguistics* 14 (2), 15-28.

Ochs, E. 1979. "Planned and unplanned discourse". In Givon, T. (Ed.) *Syntax and Semantics* (Vol. 1). New York: Academic Press, 51-80.

Powell, M.J. (1992). Semantic/Pragmatic regularities in informal lexis. *Text* 12 (1), 19-58.

Schiffrin, D. 2006. "Discourse". In Fasold, R. and J. Connor-Linton (Eds.) *An Introduction to Language and Linguistics*. Cambridge: Cambridge University Press, 169-203.

Stefanowitsch, A. and Gries, S.T. 2003. "Collostructions: Investigating the interaction of words and constructions". *International Journal of Corpus Linguistics* 8 (2), 209-243.

Theakston, A.L., Lieven, E.V.M., Pine, J.M. and Rowland, C.F. 2001. "The role of performance limitations in the acquisition of verb-argument structure: An alternative account". *Journal of Child Language* 28, 127-152.

van Dongen, W.A. 1919. "He puts on his hat and He puts his hat on". *Neophilologicus* 4, 322-353.

Received: 18 July 2011

Accepted: 19 March 2012

Cite this article as:

Hampe, B. 2012. "Transitive phrasal verbs in acquisition and use: A view from construction grammar". *Language Value* 4 (1), 1-32. Jaume I University ePress: Castelló, Spain. http://www.e-revistes.uji.es/languagevalue. DOI**:** http://dx.doi.org/10.6035/LanguageV.2012.4.2

ISSN 1989-7103

APPENDIX

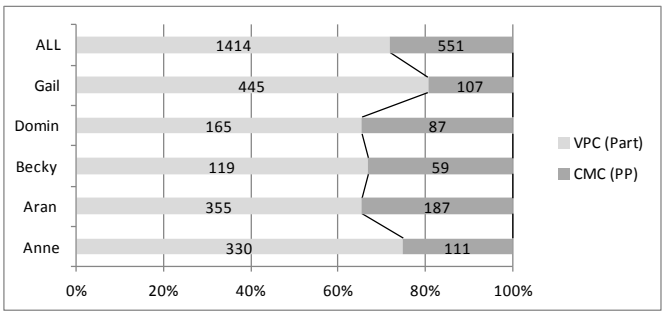


Figure 1.1. Proportions of VPC and CMCs in the 5 files from the Manchester corpus (CHILDES); Statistics for line ALL: chi-squared = 379.017, df = 1, $p_{(chi\ 2)}$ = 1.147E-83***.

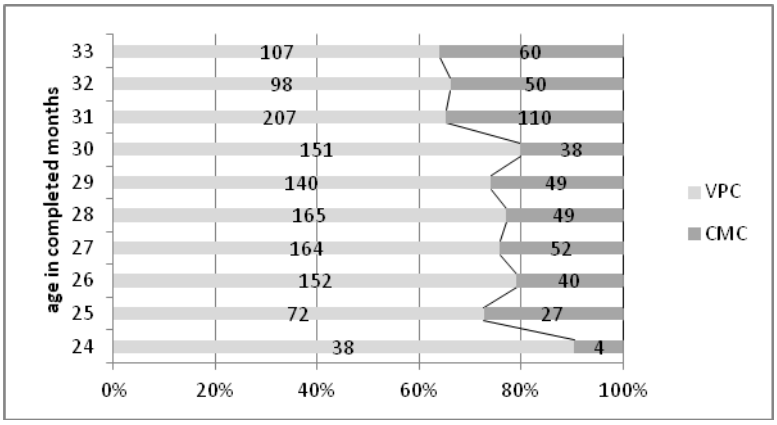


Figure 1.2. Average proportions of VPC and CMCs across months in 5 files from the Manchester corpus (CHILDES): months with tokens from all 5 children only; chi-squared = 37.382, df = 9, p = 2.249E-05***, Cramer's V = 0.145.

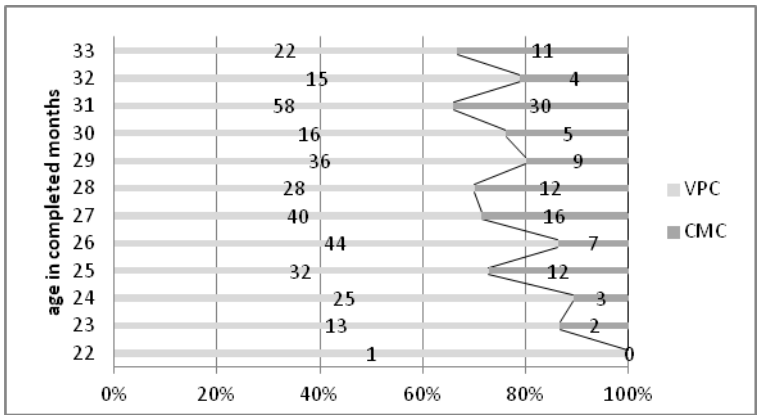


Figure 1.3a. Proportions of VPC and CMCs across months: Manchester corpus (CHILDES): Anne.

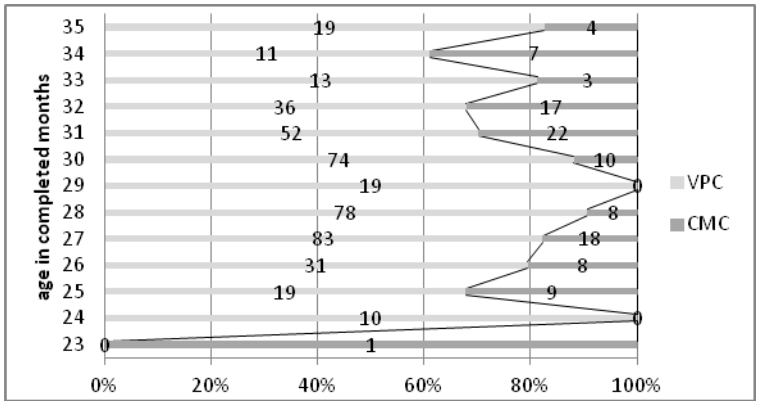


Figure 1.3b. Proportions of VPC and CMCs across months: Manchester corpus (CHILDES): Gail.

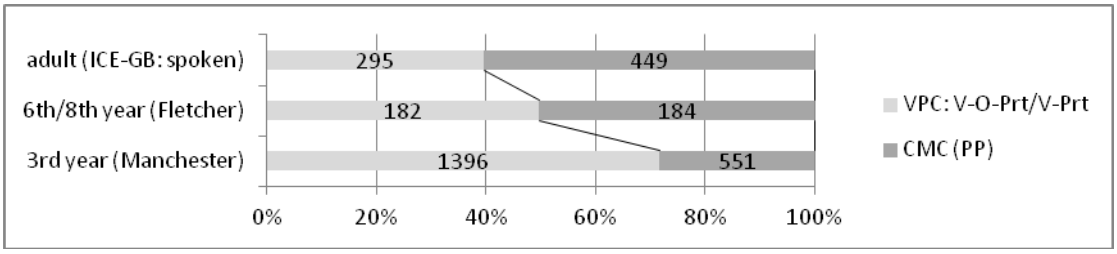


Figure 1.4. CMC vs. VPC (only V-O-Prt/V-Prt) across age groups;
chi-squared = 256.35, df = 2, $p_{(chi2)}$ = 2.15879E-56***, Cramer's V = 0.290

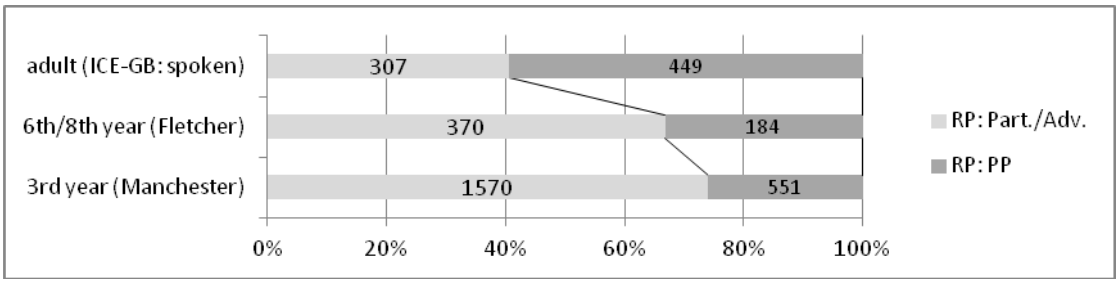


Figure 1.5. CMC vs. simpler precursors (constructions with particles and deictic/non-deictic adverbials) across age groups; chi-squared = 275.861, df = 2, $p_{(chi2)}$ = 1.28E-60***, Cramer's V = 0.283

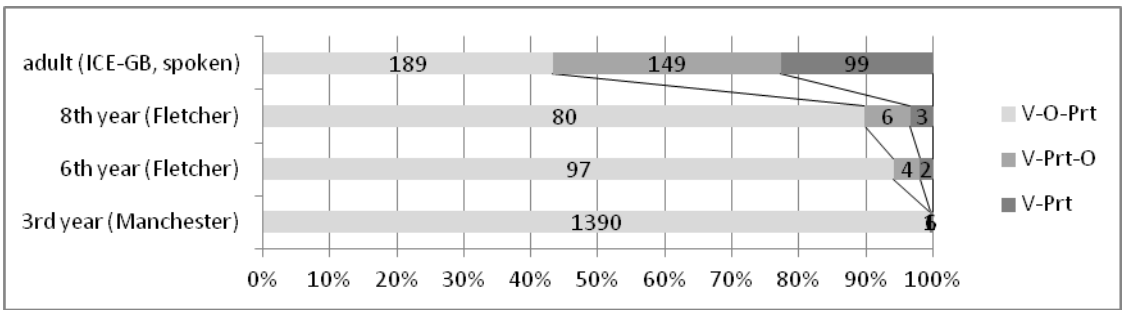


Figure 2.1. Proportions of the word orders V-O-Prt, V-Prt-O and V-Prt across age groups

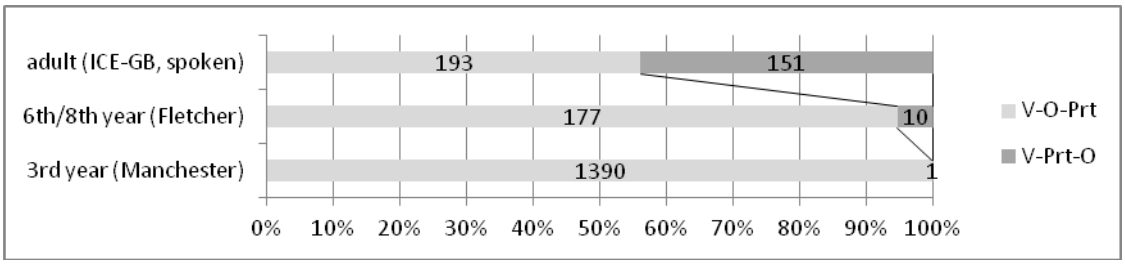
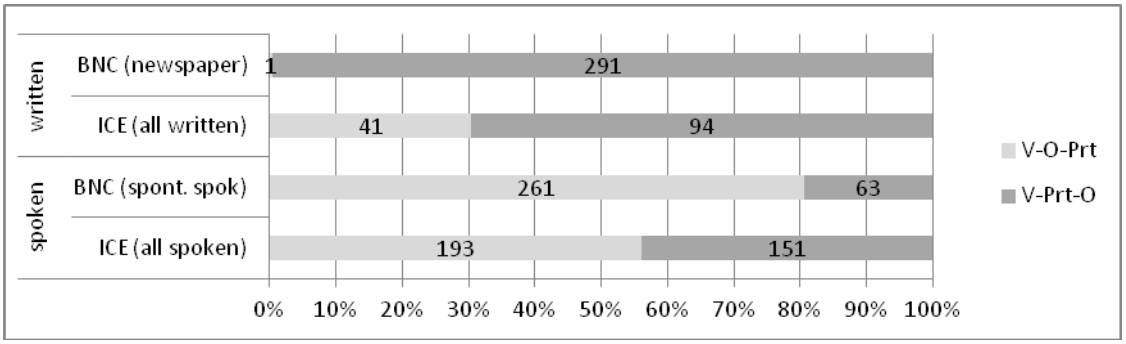


Figure 2.2. Proportions of V-O-Prt and V-Prt-O across the age groups;
chi-squared = 688.792, df = 2, $p_{(chi2)}$ = 2.696E-150***, Cramer's V = 0.599



- differences between language modes in ICE: chi-squared = 25.696, df = 1, $p_{(chi2)}$ = 3.996E-07***, Cramer's V = 0.23
- differences between genres in the BNC: chi-squared = 404.291, df = 1, $p_{(chi2)}$ < 2.2E-16***, Cramer's V = 0.81
- differences between the spoken data from the ICE-GB and the spontaneously spoken sample from the BNC: chi-squared = 45.814, df = 1, $p_{(chi2)}$ = 1.300E-11***, Cramer's V = 0.262
- differences between the written data from the ICE-GB and the newspaper sample from the BNC: chi-squared = 93.861, df = 1, $p_{(chi2)}$ < 2.2E-16***, Cramer's V = 0.469

Figure 2.3. Proportions of V-O-Prt and V-Prt-O in the adult data: language mode (ICE-GB: spoken vs. written) vs. genre (BNC: spontaneous spoken vs. broadsheet newspaper samples):

Table 1. Significant results of the HCFA (exact binomial test with Bonferroni correction): Manchester corpus

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
.	.	VOP	.	1604	537.00	2120.091	>	0.00E+00	***	0.993
.	VPC	.	.	1402	805.50	441.728	>	7.28E-217	***	0.741
.	.	.	literal	1393	805.50	428.499	>	1.59E-209	***	0.729
0	.	.	.	1323	805.50	332.472	>	2.31E-158	***	0.642
0	VPC	.	.	1310	1151.36	21.857	>	1.90E-19	***	0.138
0	VPC	VOP	.	1303	1146.36	21.403	>	2.39E-18	***	0.137
1	VPC_seq	.	literal	196	32.31	829.392	>	1.85E-87	***	0.104
1	VPC_seq	VOP	literal	196	32.17	834.442	>	2.67E-87	***	0.104
1	VPC_seq	.	.	196	37.36	673.543	>	2.41E-77	***	0.101
1	VPC_seq	VOP	.	196	37.20	677.867	>	3.56E-77	***	0.101
0	VPC	.	literal	1092	995.56	9.342	>	2.63E-06	***	0.097
0	VPC	VOP	literal	1085	991.24	8.870	>	1.67E-05	***	0.095
0	VPC	.	special	218	155.80	24.830	>	3.00E-06	***	0.043
0	VPC	VOP	special	218	155.13	25.484	>	6.59E-06	***	0.043
0	.	.	special	218	179.03	8.484	>	5.92E-03	**	0.027
1	.	.	literal	288	249.03	6.099	>	1.83E-02	*	0.029
1	.	VOP	literal	288	247.95	6.471	>	4.38E-02	*	0.029
0	.	VOP	special	218	178.25	8.864	>	1.44E-02	*	0.028

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
.	VPC_seq	.	.	209	805.50	441.728	<	7.28E-217	***	0.741
.	.	.	special	218	805.50	428.499	<	1.59E-209	***	0.729
1	.	.	.	288	805.50	332.472	<	2.31E-158	***	0.642
.	.	VPO	.	1	537.00	535.002	<	5.02E-281	***	0.499
.	.	VP	.	6	537.00	525.067	<	2.36E-269	***	0.494
1	VPC	.	.	92	250.64	100.407	<	4.83E-34	***	0.117
1	VPC	VOP	.	92	249.55	99.465	<	3.28E-33	***	0.116
0	VPC_seq	.	.	13	171.64	146.622	<	4.84E-59	***	0.11
0	VPC_seq	VOP	.	13	170.89	145.880	<	3.14E-58	***	0.11
0	VPC_seq	.	literal	13	148.41	123.550	<	1.90E-48	***	0.093
0	VPC_seq	VOP	literal	13	147.77	122.910	<	1.09E-47	***	0.092
1	VPC	.	literal	92	216.72	71.776	<	2.90E-23	***	0.089
1	VPC	VOP	literal	92	215.78	71.004	<	1.63E-22	***	0.089
1	.	.	special	0	38.97	38.972	<	2.94E-17	***	0.025
1	.	VOP	special	0	38.80	38.803	<	1.05E-16	***	0.025
1	VPC	.	special	0	33.92	33.916	<	1.04E-14	***	0.022
1	VPC	VOP	special	0	33.77	33.769	<	3.62E-14	***	0.021
.	VPC_seq	.	special	0	28.28	28.282	<	1.62E-12	***	0.018
.	VPC_seq	VOP	special	0	28.16	28.159	<	5.52E-12	***	0.018
0	VPC_seq	.	special	0	23.23	23.226	<	5.53E-10	***	0.015
0	VPC_seq	VOP	special	0	23.12	23.125	<	1.84E-09	***	0.015

Table 2. Significant results of the HCFA (exact binomial test with Bonferroni correction): Fletcher corpus.

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
.	.	VOP	.	435	150.33	539.037	>	1.41E-181	***	0.947
.	.	.	literal	426	150.33	505.491	>	5.05E-167	***	0.917
.	VPC	.	.	360	225.50	80.223	>	6.67E-39	***	0.596
1	VPC_seq	VOP	literal	73	44.30	18.589	>	6.11E-04	***	0.071
1	VPC_seq	.	literal	73	45.93	15.951	>	6.55E-04	***	0.067
1	VPC_seq	VOP	.	73	46.90	14.521	>	0.00125416	**	0.065
1	VPC_seq	.	.	73	48.63	12.216	>	0.00122565	**	0.061
0	VPC	.	special	18	6.69	19.119	>	2.23E-03	**	0.025
0	VPC	.	.	192	167.63	3.544	>	0.04177328	*	0.086
0	.	.	special	18	8.38	11.038	>	0.01409268	*	0.022
0	.	VPO	special	3	0.19	42.625	>	0.0166642	*	0.006
0	VPC	VPO	special	3	0.15	54.836	>	1.74E-02	*	0.006
0	.	VPO	figur	2	0.07	51.397	>	0.04471329	*	0.004

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
.	VPC_seq	.	.	91	225.50	80.223	<	6.67E-39	***	0.596
.	.	VP	.	6	150.33	138.573	<	2.08E-68	***	0.480
.	.	.	figur	7	150.33	136.659	<	6.65E-67	***	0.477
.	.	VPO	.	10	150.33	130.999	<	1.02E-62	***	0.467
.	.	.	special	18	150.33	116.489	<	3.15E-53	***	0.440
0	VPC_seq	.	.	18	42.37	14.019	<	3.9115E-05	***	0.060
0	VPC_seq	.	literal	16	40.02	14.420	<	8.29E-05	***	0.058
0	VPC_seq	VOP	.	18	40.87	12.797	<	0.00030778	***	0.056
0	VPC_seq	VOP	literal	16	38.60	13.235	<	6.39E-04	***	0.055
1	.	.	special	0	9.62	9.619	<	0.00035946	***	0.022
1	.	VOP	special	0	9.28	9.277	<	0.00152804	**	0.021
1	VPC	.	special	0	7.68	7.678	<	5.20E-03	**	0.017
1	VPC	.	.	168	192.37	3.088	<	0.04467653	*	0.094
1	VPC	VOP	special	0	7.41	7.406	<	2.06E-02	*	0.017
1	.	VPO	.	0	5.34	5.344	<	0.02776911	*	0.012

Table 3. Significant results of the HCFA (exact binomial test with Bonferroni correction): ICE-GB (spoken)

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
0	.	.	.	493	251.50	231.898	>	2.04E-131	***	0.96
.	VPC	.	.	437	251.50	136.820	>	3.83E-68	***	0.738
.	.	.	figur	292	167.67	92.199	>	2.11E-29	***	0.371
.	.	VOP	.	242	167.67	32.955	>	1.58E-11	***	0.222
.	.	VOP	literal	89	51.96	26.404	>	3.54E-06	***	0.082
0	.	VOP	literal	81	50.93	17.758	>	3.96E-04	***	0.067
0	VPC	VP	figur	83	52.89	17.138	>	9.91E-04	***	0.067
.	VPC	VP	figur	83	53.97	15.622	>	9.93E-04	***	0.065
.	VPC_seq	VOP	literal	31	6.82	85.772	>	1.18E-10	***	0.049
.	VPC_seq	VOP	.	55	31.75	17.019	>	3.81E-04	***	0.049
.	VPC_seq	.	literal	37	14.17	36.777	>	1.14E-06	***	0.047
0	VPC_seq	VOP	literal	23	6.68	39.847	>	1.74E-05	***	0.033
1	VPC_seq	.	literal	9	0.28	269.822	>	2.68E-10	***	0.017
1	VPC_seq	VOP	.	9	0.63	110.938	>	2.81E-07	***	0.017
1	VPC_seq	.	.	10	1.31	57.526	>	4.76E-06	***	0.017
1	VPC_seq	VOP	literal	8	0.14	456.460	>	8.54E-11	***	0.016
1	.	VOP	literal	8	1.03	46.989	>	2.23E-04	***	0.014
0	VPC	VPO	figur	110	76.13	15.074	>	1.37E-03	**	0.079
.	VPC	VPO	figur	110	77.67	13.458	>	1.56E-03	**	0.076
0	VPC_seq	.	literal	28	13.89	14.336	>	5.53E-03	**	0.029
1	.	.	literal	9	2.15	21.872	>	0.002274	**	0.014
0	.	VP	figur	85	60.88	9.556	>	1.80E-02	*	0.055
.	.	VP	figur	85	62.12	8.431	>	1.61E-02	*	0.052

deictics	construction	part pos	meaning	obs	exp	cont.chisq	obs-exp	p.adj.bin	dec	Q
1	.	.	.	10	251.50	231.898	<	2.04E-131	***	0.96
.	VPC_seq	.	.	66	251.50	136.820	<	3.83E-68	***	0.738
.	.	.	special	103	167.67	24.941	<	3.90E-10	***	0.193
.	.	VP	.	107	167.67	21.951	<	5.22E-09	***	0.181
.	.	.	literal	108	167.67	21.233	<	9.70E-09	***	0.178
.	.	VOP	figur	97	140.49	13.460	<	4.34E-05	***	0.12
.	VPC	VOP	figur	79	122.05	15.186	<	3.30E-05	***	0.113
0	.	VOP	figur	97	137.69	12.026	<	2.91E-04	***	0.111
0	VPC	VOP	figur	79	119.63	13.797	<	2.06E-04	***	0.106
.	.	VPO	literal	12	33.07	13.421	<	1.33E-04	***	0.045
0	.	VPO	literal	12	32.41	12.852	<	4.21E-04	***	0.043
.	VPC	VPO	literal	9	28.73	13.547	<	2.09E-04	***	0.042
0	VPC	VPO	literal	9	28.16	13.033	<	6.36E-04	***	0.04
.	VPC_seq	VPO	.	4	20.21	12.999	<	6.55E-05	***	0.034
0	.	VP	literal	6	22.52	12.116	<	5.45E-04	***	0.034
0	VPC_seq	VPO	.	4	19.81	12.613	<	1.84E-04	***	0.033
.	VPC	VP	literal	4	19.96	12.761	<	2.42E-04	***	0.033
.	.	VP	literal	7	22.97	11.107	<	6.82E-04	***	0.033
0	VPC	VP	literal	4	19.56	12.381	<	6.76E-04	***	0.032
.	VPC_seq	VPO	figur	0	11.73	11.730	<	1.26E-04	***	0.024
0	VPC_seq	VPO	figur	0	11.50	11.497	<	3.20E-04	***	0.023
1	VPC	.	.	0	8.69	8.688	<	6.25E-04	***	0.018
.	VPC_seq	.	figur	20	38.31	8.754	<	3.60E-03	**	0.039
.	VPC	.	literal	71	93.83	5.554	<	2.55E-02	*	0.056
0	VPC_seq	.	figur	20	37.55	8.204	<	1.08E-02	*	0.038
1	.	.	figur	0	5.81	5.805	<	0.017472	*	0.012