The optimal placement of *up* and *ab* – A comparison[1]

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1　Introduction

This paper presents an optimality theoretic approach to the transitive particle verb construction (PVC), also referred to in the literature e.g. as *phrasal verbs* or *separable complex verbs*. This construction occurs in most if not all of the Germanic languages and has been studied most intensely and controversially in the generative literature (cf. Dehé et al 2002 and Dehé 2002 for recent analyses and the references therein for previous studies). The present analysis is based on the following hypotheses:

- The well-known patterns that the various languages display can be explained in terms of (the ranking of) general violable universal constraints, along the lines that have been developed in the work on Optimality Theory (OT; cf. Prince & Smolensky 1993 and much subsequent work). It is this crosslinguistic scope that is a striking feature of OT.
- The crosslinguistic pattern can be fully explained under the assumption that the relevant constraints are not only morphosyntactic in nature. Rather, focus structure and prosody both play a crucial role, too.

The remainder of the article is organised as follows: Section 2 serves as a brief overview of the behaviour of the PVC in the languages discussed here in great detail: English and German. In Section 3, I will introduce the relevant framework, i.e. the constraints suggested in the OT literature that I will make use of in my analysis below. No new constraints are necessary. However, I will further specify the ranking of the prosodic constraints in relation to the syntactic constraints for English. In Section 4, I will provide a detailed OT-analysis for PVC's in English and German, showing that the varying patterns with respect to the word order can easily be explained by reranking the relevant constraints. Section 5 serves as a conclusion.

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2 The verb particle construction in English and German

Let us first take a brief look at the general behaviour of the construction in the two languages. In English, transitive particle verbs occur in two alternating word orders, where the particle can either precede or follow the direct object (cf. (1)). I will refer to the former word order, where the particle occurs adjacent to the verb, as the continuous order, the latter order, where the direct object separates the verb and the particle, is referred to as the discontinuous order. (The particle is bold-printed in many examples throughout the paper.)

(1) English
    a.   The boys drank **up** the beer.   (= continuous order)
    b.   The boys drank the beer **up**.   (= discontinuous order)

As compared to English with its alternating word orders, German behaves very differently. In German, the particle is obligatorily separated from the verb in main clauses (cf. (2)a-a'), but appears in a prefix-similar position in subordinate clauses (cf. (2)c-c') and in main clauses with a perfect participle (cf. (2)b)).

(2) German
    a.   *Sie **ab**sagten   das Konzert.
            They off.said   the concert
            'They called off the concert.'
    a'.   Sie   sagten   das Konzert   **ab**.
            They   said   the concert   off.
            'They called off the concert.'
    b.   Sie   haben   das Konzert   **ab**gesagt.
            They   have   the concert   off.said
    c.   …   dass sie   das Konzert   **ab**sagten.
                 that they   the concert   off.said
            '… that they called off the concert.'
    c'.   *… dass sie   sagten   das Konzert   **ab**.
                 that they   said   the concert   off.
            '… that they called off the concert.'

Numerous suggestions have been made in the generative literature to account for these constructions and for the alternating word orders syntactically, many of them being language specific (e.g. for English: Johnson 1991, Koizumi 1993, Nicol 2002, Dehé 2002; for German: Stiebels & Wunderlich 1994, Olsen 1997, Wurmbrand 2000, Lüdeling 2001; but see Zeller 2002 for a notable exception). In Dehé (2002) I showed that in English, the choice of the word order is not optional, but that it is to a great extent determined by the information structure of the context in which the construction is embedded. I further argued that the fact that it is the focus-background-division of the sentence that determines the word order should be reflected in the syntactic structure of the construction, in particular in the derivation of the discontinuous word order. However, for languages other than English, there are clearly factors other than focus structure that are mainly

responsible for the word order of PVC's. This is particularly obvious for a Verb-second (V2) language such as German, where it must be syntactic rather than discourse factors that determine in what way verb, particle and object are ordered.

However, it is still an interesting question why a word order alternation such as that between the continuous order and the discontinuous order demonstrated in (1) above is possible in a language with otherwise relatively strict word order such as English, but not in a related language such as German which is otherwise freer in its constituent ordering, allowing e.g. for scrambling. The phenomenon at hand cannot simply be reduced to the fact that German is a V2 language, whereas English is not, because this fact does not explain the ungrammaticality of examples like (2)a above, where the complex V is in the second position.

In the analysis suggested below, both syntactic and discourse factors are formulated as constraints in terms of an OT syntax. Language specific patterns can then be accounted for by a language specific ranking of these constraints. Syntactic constraints that are dominant in one language might be outranked by pragmatic and/or prosodic constraints in another language.

3   Introducing the Framework

Obviously, we are concerned here with a word order phenomenon. The "ingredients" are the same in the languages under question: Subject, verb+particle, object, forming relatively simple sentences but with varying word orders across languages. The specific word order that can be observed for every language will follow from the interaction between constraints governing phrase structure and movement, i.e. pure syntactic constraints governing phrase structure, constraints determining clitic placement, and prosodic constraints including alignment constraints which require prosodic heads to occur rightmost within their prosodic constituents.

All of the constraints needed for the analysis suggested below have already been suggested in the recent literature on OT (and have been tested and considered adequate for a number of languages). The syntactic constraints have first been proposed in Grimshaw (1997) and Grimshaw & Samek-Lodovici (1995). The relevant constraints governing clitic placement have been suggested by Anderson (1996, 2000) and Legendre (2000). The prosodic alignment constraints are taken from Samek-Lodovici (2002). However, the ranking of these constraints with respect to each other will be modified.

I will now briefly introduce the architecture of OT as relevant here and the constraints that are crucial for the analysis below.

3.1   Some relevant aspects of Optimality Theory (Syntax)

In OT, the competing candidates are alternative realisations of the same input. The INPUT for an extended verbal projection is defined by Grimshaw (1997: 375f) as a "lexical head plus its argument structure and an assignment of lexical heads to its arguments, plus a specification of the associated tense and aspect". The relation between input and the eventual output (OUT$_{real}$; cf. Prince & Smolensky 1993) is mediated by two generating mechanisms: the GENERATOR (GEN) creates a set of

candidates (= potential outputs) that conform to X-bar theory (Grimshaw 1997). The EVALUATOR (EVAL) uses the language specific constraint hierarchy to select the optimal candidate. All constraints are in principle violable. For syntax, Broekhuis & Dekkers (2000) suggest a combination of OT and the *Minimalist Program* such that GEN in OT corresponds to the Computational System C_{HL} in *Minimalism* and thus to the operations Select, Merge, and Attract/Move.

Following Grimshaw & Samek-Lodovici (1995) I assume here that the discourse status of the arguments is also specified in the INPUT, i.e. which arguments are foci, which are topic, and the like.

3.2 Morpho-syntactic constraints

SUBJECT (SUBJ)
This constraint has been suggested by e.g. Grimshaw (1997) and Grimshaw & Lodovici (1995). It incorporates the basic idea of the Extended Projection Principle of Chomsky (1981), but it is violable. It requires that the Spec of IP or any relevant functional subject position must be filled. Büring & Gutiérrez-Bravo (2001) reformulate this constraint as SO which demands that the subject be structurally more prominent than the object. However, nothing hinges on this constraint in our discussion. The grammars of the languages considered here require an overt subject which means that the SUBJECT constraint must be highly-ranked if not undominated. In the discussion below I will only consider candidates that satisfy the constraint and we can thus neglect it. We will concentrate on the structure of the (extended) VP.

ECONOMY OF MOVEMENT (STAY)
Another crucial constraint is STAY, meaning "Traces are not allowed" or simply "Don't move" (Grimshaw 1997). This constraint corresponds to the economy principles of movement in the minimalist framework. It is violated by every step of movement a syntactic constituent undergoes.

HEADLEFT (HD-LFT), HEADRIGHT (HD-RT)
This constraint, suggested by Grimshaw (1997), states that the head is leftmost/rightmost in its projection. The projection can be defined as the maximal projection including the specifier, or as the immediate projection. In the latter case, the constraints state that the base position is immediately to the left/right of its complement.

OBLIGATORY HEADS (OB-HD)
OB-HD, again from Grimshaw (1997), simply says that a projection has a head.

In addition to these basic syntactic constraints we will make use of some constraints which govern the placement of pronominal clitics as suggested in the literature on second-position clitics e.g. by Anderson (1996, 2000), Legendre (2000) and related work. In their work, which draws on the treatment of clitics as suggested in Anderson's (1992 and subsequent work) *A-morphous morphology*, the

positioning of clitics as investigated for languages such as Bulgarian and Serbo-Croatian among others is a result of the interaction of a number of alignment constraints. The following two constraints are relevant for our purposes:

EDGEMOST (e, E, D), NON-INITIAL (e, D)
EDGEMOST (e, E, D) states that element e should appear as close to the edge E (left or right) of a domain D as possible. EDGEMOST is gradient in that it is violated once for every single element that occurs between the relevant element (e.g. the clitic) and the specified edge of the relevant domain. The competing constraint is NON-INITIAL (e, D) which demands that element e does not occur at the edge of domain D. There is an interaction between the two constraints such that the following holds: if EDGEMOST dominates NON-INITIAL for a given domain then the relevant element (e.g. a clitic) may occur right at the defined edge of that domain. If NON-INITIAL dominates EDGEMOST however, then the relevant element will not occur right at the edge of the given domain, but will be preceded by (an)other syntactic element(s).

3.3   Focus-alignment constraints, prosodic constraints

FAITHFOCUS (FAITHFOC):
It has been assumed in the literature that focus is signaled in the Input and that it must be realised (cf. Section 3.1 above). Candidates that fail to realise focus on the corresponding constituent thus violate the FAITHFOCUS constraint. This constraint, Büring & Gutiérrez-Bravo (2001) assume, is undominated. Its violation rules out the corresponding candidate.

FOCUSPROMINENCE (FOCP)
This constraint is borrowed from Büring (2000) and it simply says that focus is most prominent. This means that a candidate is ruled out by FOCP if the nuclear accent falls on a constituent other than the focused one, or if the focused element does not bear the nuclear accent. This constraint certainly draws on the large amount of previous studies that have shown that the main accent goes on the focused constituent. As FAITHFOCUS, FOCP is undominated. In a sentence intended as a felicitous utterance in a given context (e.g. answer to a question) the focus must be most prominent. The constraint is violated whenever a focused constituent does not bear the main accent.

Since FAITHFOCUS and FOCP have been argued to be undominated, and thus render candidates that violate these constraints suboptimal, I will only seriously consider sentences that satisfy these constraints, but will list other candidates where it seems advantageous for the discussion.

WRAP and STRESSXP
These prosodic constraints from Samek-Lodovici (2002) govern the phonology-syntax mapping, i.e. the parsing of syntactic structures into phonological phrases. The constraints draw heavily on the literature on phonological phrasing and the syntax-phonology mapping as represented e.g. by Selkirk (1984, 1995) and

Truckenbrodt (1995, 1999). WRAP demands that "[e]ach lexically headed XP is contained inside a phonological phrase", whereas STRESSXP states that "[e]ach lexically headed XP must contain a *phrasal stress* (where 'phrasal stress' refers to the head of a phonological phrase P)".

WRAP and STRESSXP are closely related to Büring & Gutiérrez-Bravo's (2001) XP=pP and ARGUMENT-OVER-PREDICATE (A/P). XP=pP is defined as follows:

- Align a lexical XP with a phonological phrase (pP).

-- A: PRED: A predicate shares a pP with at least one of its arguments.

-- B: XP: A pP contains an XP. If XP and YP are within the same pP, one contains the other (where X and Y are lexical categories). Two separate XP's thus cannot be part of the same pP.

ARGUMENT-OVER-PREDICATE (A/P) (Büring 2000; Büring & Gutiérrez-Bravo 2001) is formulated in the following way: "Within a phonological phrase, an argument is more prominent than a predicate". This constraint is of course related to Gussenhoven's (1984, 1999) *Sentence Accent Assignment Rule* (SAAR), which states that accent assignment is to "every focused argument (A), modifier (M), and predicate (P) [...], with the exception of a predicate that is adjacent to one of its arguments" (cited from Gussenhoven 1999: 45).

Samek-Lodovici (2002: 11) illustrates the prosodic structures that are favoured by these constraints, using the case of a simple V+complement construction. In (3) below I have added the corresponding constraints from Büring. (iP = I = Intonational Phrase; phonP = pP = P = Phonological Phrase; x indicating stress).

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(3)  a.   (        x   )     I
          ( x )   ( x )     P     ←   WRAP violated, STRESSXP satisfied =
          [ V      DP    ]VP            XP=pP violated, A/P vacuously satisfied

     b.   (        x   )     I
          (        x   )     P     ←   WRAP and STRESSXP satisfied =
          [ V      DP    ]VP            XP=pP and A/P satisfied

     c.   ( x          )     I
          ( x          )     P     ←   WRAP satisfied, STRESSXP violated =
          [ V      DP    ]VP            XP=pP satisfied, A/P violated =
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A verb plus its complement must be phrased in a single phonological phrase in order to satisfy WRAP and XP=pP (cf. (3)a). The structure given in (3)b satisfies WRAP and STRESSXP, and equally satisfied are both XP=pP and A/P. In (3)c), STRESSXP is violated because the DP does not carry any phrasal stress, and A/P is violated because within one phonological phrase the predicate is more prominent than its argument.

The next set of constraints that we are going to make use of are alignment constraints which require prosodic heads to occur rightmost within their prosodic constituents. I take these constraints from Samek-Lodovici (2002: 11) who imports them from Truckenbrodt (1995, 1999).

HEAD-P (H-P): Align (P-phrase, R, Head(P-phrase),R)
Align the right boundary of every phonological phrase P with its head.

HEAD-I (H-I): Align (I-phrase, R, Head(I-phrase),R)
Align the right boundary of every intonational phrase I with its head.

HEAD-U (H-U): Align (U, R, Head(U),R)
Align the right boundary of every utterance phrase U with its head.

The constraints are gradient, i.e. they are violated once for every potential head position that occurs between the head and the right edge of its phrase. In the analysis below I will neglect the last of these constraints (H-U) since I will not consider utterances that contain more than one intonation phrase.

Similar to these constraints suggested by Samek-Lodovici (2002) is Büring's (2000) and Büring & Gutiérrez-Bravo's (2001) constraint IP-HEAD-RIGHT which states that the right edge of every iP must be aligned with the right edge of the phonP that is the head of the iP (i.e. the phonP that receives the nuclear accent must be right-aligned with the iP).

Notice at this stage of the discussion that since particles in verb particle constructions are stressed, they (but not e.g. monosyllabic prepositions) function as phonological heads (Nespor & Vogel 1986: 179). For German, Wurmbrand (1998: 284) illustrates this property in terms of the constrast between the particle verb *UMfahren* ('knock down') and the prefix verb *umFAHren* ('drive around').

The constraint-ranking Samek-Lodovici (2002) suggests for English is given in (4).

(4)   SUBJECT >> STAY >> (STRESSXP OR H-P) >> (H-I, WRAP)

SUBJECT must outrank STAY in order to allow for subjects to raise to the specifier of a functional projection (Grimshaw & Samek-Lodovici 1995, Samek-Lodovici 2001, 2002). SUBJECT must also outrank H-I since otherwise a focused subject would have to occur at the right edge of the intonational phrase which it doesn't. STAY must dominate WRAP and H-I because otherwise a focused direct object in double object constructions would always have to end up in final position. Furthermore, Samek-Lodovici (2002: 18f) shows that either STRESSXP or H-P must outrank both H-I and WRAP.

The exact rank of H-P and also of STRESSXP remains undetermined for English. Lacking clear evidence, Samek-Lodovici (2002) ranks both prosodic constraints below the syntactic constraints SUBJECT and STAY. This ranking corresponds to "the claim that syntactic constraints outrank prosodic ones" (Samek-Lodovici 2002: 15). However, for French and Italian Samek-Lodovici (2002) shows that there must be an intermingling of the two types of constraints in order to explain the pattern. Nothing should then prevent us in general to assume that such an intermingling of syntactic and prosodic constraints is possible in English, too. We will see below that the particle verb construction in English suggests a ranking such as in (5) below, where both H-P and STRESSXP dominate STAY.

The syntactic constraint Hᴅ-Lꜰᴛ outranks the other syntactic constraints (Grimshaw 1997).

(5)   Hᴅ-Lꜰᴛ >> Sᴜʙᴊᴇᴄᴛ >> H-P >> SᴛʀᴇssXP >> Sᴛᴀʏ >> (H-I, Wʀᴀᴘ)

I have now introduced the constraints that we need for the analysis of PVC's below. Before I go on, let me add the following remarks. With regard to the "strength" of constraints of the different types Büring (2000) observes an interesting distinction: Violations of pure morphosyntactic constraints such as Sᴛᴀʏ and Sᴜʙᴊᴇᴄᴛ have stronger effects on the grammaticality of a sentence than violations of pure word order constraints. Pure word order constraints in this sense are the focus-alignment constraints which serve to realise the focused constituents at a certain position within the sentence. Büring notes that violations of word order constraints yield marked candidates, whereas violations of morphosyntactic constraints yield ungrammatical candidates. We will see below that this idea is confirmed by the word order options that one has with particle verbs, and that this is also a welcome result.

We are now in the position to look at the particle verb construction in the different languages and to apply the OT framework to the data. Throughout the paper, I indicate focus structure by using question-answer-pairs that make the focus position controllable. Thereby it can be assured that we are dealing with the same kind of focus structure in all the languages that are under investigation. This has become a common method in related work (cf. e.g. Büring 2000, Büring & Gutiérrez-Bravo 2001, Grimshaw & Samek-Lodovici 1995, Samek-Lodovici 2002). Moreover, I will only consider candidates that include all elements given in the input, thus satisfying Pᴀʀsᴇ of Grimshaw & Samek-Lodovici (1998: 194) which holds that input constituents must be parsed and which is violated for every unparsed element in the input.

4   An OT-account for particle verb constructions

4.1   English

The reader will be familiar with the word order alternation that is possible with PVC's in English and is given here in (1) above and (6) below. It is also a well known fact that if the nominal object is realised as an unstressed pronoun the discontinuous order is obligatory (cf. (7)), but that the continuous order is allowed if the pronominal object is focused/stressed as in (8).

(6)   a.   The boys drank **up** the beer.
       b.   The boys drank the beer **up**.

(7)   a.   *The boys drank up *it*.
       a'.   *Weight Watchers signed up *her*.
       b.   The boys drank *it* up.
       b'.   Weight Watchers signed *her* up.

(8)   a.   The boys drank up THAT.
       b.   Weight Watchers signed up *HER* (not him).

The choice of the word order with full DP objects seems to be optional at first sight. However, it has been shown in the literature (Erades 1961, Bolinger 1971, Chen 1986, and, most recently and in much detail, Dehé 2002) that the choice of the word order is to a high degree determined by the focus structure of the context in which the relevant construction is embedded. The relevant data are given in (9) through (13) below. The location of the nuclear accent is indicated by capital letters.

(9)   *Wide focus*:
      (Q: What happened?)
      A: [The boys drank up the BEER]$_{Foc}$

(10)   *VP-focus*:
      (Q: What did the boys do?)
      A: They [drank up the BEER]$_{Foc}$

(11)   *Minimal focus*:
      (Q: What did the boys drink up?)
      A: They drank up [the BEER]$_{Foc}$

(12)   *Subject focus*:
      (Q: Who drank up the beer?)
      A: [The BOYS]$_{Foc}$ drank up the beer.
      A2: [The BOYS]$_{Foc}$ drank it up.

(13)   *V-focus*:
      (Q: What happened to the beer? What did the boys do with it?)
      A1: They [drank]$_{Foc}$ the beer [UP]$_{Foc}$.
      A2: They [drank]$_{Foc}$ it [UP]$_{Foc}$.

First of all, note that the continuous word order rather than the discontinuous one has shown to be the neutral, underlying one and the preferred one in context-free utterances. It thus occurs unless otherwise forced by the context in which the utterance is embedded. The idea as such has been present in the literature at least since Van Dongen (1919). More recently, evidence has been provided from non-syntactic studies. Hunter & Prideaux (1983) report on an empirical study on sentence acceptability, Dehé (2001a, 2002: 91ff) on a speech production experiment. Both studies provide evidence for the assumption that the continuous order is the underlying, the discontinuous construction the derived one. See also Dehé (2002: Ch. 3) for an overview and also for arguments against the opposite hypothesis (that the discontinuous order might be more neutral).

In (9), the whole sentence is under focus. The continuous order is thus the preferred one in this context. The nuclear accent falls on the nominal object (i.e. on *beer*) with a prenuclear accent on the subject (Gussenhoven 1999). (10) is an

example of VP focus, i.e. the information conveyed by the subject is given, but the complete VP presents new information. Similarly, in the case of minimal focus on the nominal object in (11) the continuous order is preferred and accent placement is on the object noun. As opposed to (9) and (10), only the DP-object presents new information in (11). If the focus is on the subject alone as indicated in (12), once again the continuous order is preferred with full DP's as nominal objects. If a pronominal object is chosen the discontinuous order is obligatory. The nuclear accent falls on the subject, whereas the object becomes deaccented. If the focus falls on the complex verb only (cf. (13)), the discontinuous order is preferred regardless of whether the nominal object is a pronoun or not. The nuclear accent in this case falls on the particle. Note that the accent patterns corresponding to the distribution of the focus in (10), (11) and (13) have been confirmed by experimental work on accent placement in PVC's in Dehé (2001b, 2002: 163ff).

With respect to the syntax of PVC's in English I will draw on earlier work (Dehé 2002): I assume overt subject movement from the VP-Spec position to the specifier of a higher functional projection (AgrSP). Moreover, I follow Koizumi (1993) and Lasnik (1999 and previous work) among others in assuming a split VP structure of the form vP-AgrOP-VP. Within this extended projection, both the verb and the object move overtly, the verb via $AgrO^0$ to v^0, the object to AgrOP-Spec. The particle verb is a complex V head, taking the nominal object as its complement (cf. Johnson 1991, Koizumi 1993, Olsen 2000 in particular). However, I will show at the relevant points that nothing really hinges on this head status of the complex verb.

Let us now take a look at how this pattern can be explained by the constraints introduced in Section 3 above and their ranking. For English, we are mainly interested in the question of how the alternating word order can be explained.

4.1.1 Wide Focus

I will start with the case of sentence focus as given in (9) and repeated here for convenience as (14). The answer sentence in (14) is a felicitous answer to the question *What happened*?

(14) *Wide focus (= Sentence Focus)*:
      (Q: What happened?)
      A: [The boys drank up the BEER]$_{Foc}$

The discontinuous alternate is given in (15).

(15) (The boys drank the BEER up)$_{Foc}$

Following previous work on phonological phrasing, I assume the phrasing as given in (16) and (17) for the continuous and discontinuous order, respectively.

(16) (x   )   iP
      (x   ) (x   )   phonP
      (The boys$_{Foc}$ drank up$_{Foc}$ the BEER$_{Foc}$

(17)
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(                              x          )    iP
(      x   ) (                 x     -- )    phonP
((The boys_Foc)_pP (drank_Foc the BEER_Foc up_Foc
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The complex verb and the nominal object are phrased within one phonological phrase (phonP) according to WRAP. The subject forms its own phonological phrase. The two phonological phrases are then combined in a single intonational phrase (iP).

Why should the speaker prefer (14) over (15) (or (16) over (17))? To demonstrate this, I will use comparative tableaux as suggested in Prince (2000) and slightly adapted by Samek-Lodovici (2002). Within a comparative tableau, an optimal candidate is compared to a suboptimal candidate by directly comparing the behaviour of the candidates with regard to a specific constraint. W means that a constraint prefers the desired optimum (the *winner*), whereas L indicates that a constraint prefers the desired suboptimum (the *looser*). Blank means that a constraint does not distinguish between the two candidates. (Prince 2000: 2).

In the case of sentence focus, the continuous order as given in (14) and (16) is the optimal candidate, the discontinuous order (cf. (15) and (17)) is the suboptimal candidate. The two candidates are compared in Tableau 1.

Tableau 1 : Sentence Focus

a. ☞ optimal candidate (x) iP (x) (x) phonP The boys drank up the BEER				*		
	SUBJECT	H-P	STRESSXP	STAY	H-I	WRAP
b. suboptimal candidate (x) iP (x) (x --) phonP The boys drank the BEER up		W		L		

Both candidates satisfy SUBJECT. Candidate b) (= discontinuous order) violates H-P since the head of the phonP (*beer*) is not aligned with the right edge of the phonological phrase, being followed within the phonP by the particle as a potential prosodic head. Candidate a) satisfies H-P. STAY is violated by candidate a) one more time as compared to candidate b).[2] Why should that be? Suppose that Neeleman (2002) is right in arguing that pied-piping the particle is less economical than stranding it due to the "natural economy condition" which demands that only as little material as required for convergence is moved (Chomsky 1995: 262). Neeleman (2002: 151f) formulates it as follows: "That is to say, if some principle can be satisfied through movement of either A or B, and A is contained in B, then movement of B is blocked." Neeleman (2002: 158) further argues that in the case of

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[2] Here and throughout the paper I only indicate the number of violations of STAY that distinguish the relevant candidate from candidates that perform better on this constraint. The exact number of violations is of no interest in the present context.

movement of the particle verb to a higher functional position, "movement takes place in order to facilitate checking. The relevant verbal features are presumably present on the verb as well as on the complex predicate, which implies that in principle either can be moved. However, [the economy condition on movement] blocks movement of the complex predicate, …". It would follow then that STAY is violated one more time whenever the particle follows the verb. Since in the optimal candidate the particle accompanies the verb, this candidate looses on the constraint STAY. However, STAY is outranked by H-P, so that its violation by candidate a) does not prevent candidate a) from being optimal.

Notice that the performance on STAY is independent of the assumption one favours with regard to the (non-)head status of the complex particle verb. A particle that is represented as its own phrase would still have to accompany the verb to a higher position in the case of the continuous construction.

Both candidates perform equally well on STRESSXP, H-I and WRAP. The question of whether to use the continuous or the discontinuous order is chosen is thus reduced to performance on the constraint H-P. The result corresponds to the evidence that has been provided independently for the fact that the continuous order is the underlying, neutral one (cf. above).

Remember that in Samek-Lodovici's (2002) work, the exact rank of H-P was undetermined but that it was ranked below STAY. The optimal candidate in Tableau 1 violates STAY one more time than the suboptimal candidate which means that under a ranking of the kind STAY >> H-P, the suboptimal candidate would win. This example thus provides the first piece of evidence that in English, the prosodic constraint H-P must outrank STAY.

How can we make sure that the nuclear accent is placed on the object noun rather than e.g. the verb, particle or subject which all belong to the focus? Consider the candidates in (18) where the nuclear accent is placed on the subject. Crucially, (18)a) violates H-I since the intonational phrase is left-aligned rather than right-aligned with its head. On the other constraints, (18)a) and the optimal candidate in Tableau 1 above behave alike. Similarly to (18)a), (18)b) also looses on H-I, but this candidate also violates H-P which is already fatal.

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(18)  a.    (        x                        )     iP
            (     x    ) (                 x    )    phonP
            (The BOYS ) (drank up the beer.  )
      b.    (        x                        )     iP
            (     x    ) (             x   --  )    phonP
            (The BOYS ) (drank the beer up.  )
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In (19), the nuclear accent falls on the verb/particle. (19)a) satisfies H-I but violates STRESSXP since *the beer* fails to receive phrasal stress. Moreover, and fatally, H-P is violated twice. The same violations hold for (19)b), except that H-P is only violated once.

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(19)  a.    (                x              )     iP
            (     x    ) (  x   --   --   )    phonP
            (The boys  ) (DRANK up the beer.)
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```
        b.    (                  x          )    iP
              (     x    ) (     x      --   )    phonP
              (The boys   )  (drank UP the beer. )
```

The discontinuous alternate of (19)a is given in (20)a. Similar to (19)a, it violates H-P twice and it also violates STRESSXP. However, (20)b is a bit more tricky. H-P is satisfied: the right edge of the phonological phrase is aligned with its head. There is a violation of STRESSXP since *the beer* fails to receive phrasal stress. However, in Samek-Lodovici's (2002) ranking given in (4) above, not only H-P, but also STRESSXP is dominated by STAY. Under this ranking, (20)b, which is the desired looser, would thus be the optimal candidate. I illustrate this situation in Tableau 2 below.

```
(20)  a.    (                   x             )     iP
            (     x    ) (     x       --   -- )     phonP
            (The boys   )  (DRANK the beer up.)
      b.    (                          x     )      iP
            (     x    ) (            --   x  )      phonP
            (The boys   )  (drank the beer UP.  )
```

Tableau 2 : Sentence Focus

a. optimal candidate? (x) iP (x) (x) phonP The boys drank up the BEER			*			
	SUBJECT	STAY	STRESSXP	H-P	H-I	WRAP
b. suboptimal candidate (x) iP (x) (-- x) phonP The boys drank the beer UP.		L	W			

Crucially and uncontroversially, (20)b is not a felicitous answer to the question in the given context:

(21)   Q: What happened?
       ?? A: The boys drank the beer UP.

The problem can be solved by reranking the STRESSXP constraint. If STRESSXP outranks STAY, then candidate a) in Tableau 2 wins out as desired. It seems then that similar to H-P, STRESS-XP must outrank STAY in English. Sentence focus structures involving particle verb constructions thus suggest a constraint ranking as given in (22) below (and anticipated in (5) above) for English. Cf. also Tableau 3.

(22)   SUBJECT >> H-P >> STRESSXP >> STAY >> (H-I, WRAP)

Tableau 3 : Sentence Focus

a. ☞ optimal candidate (x) iP (x) (x) phonP The boys drank up the BEER				*		
	SUBJECT	H-P	STRESSXP	STAY	H-I	WRAP
b. suboptimal candidate (x) iP (x) (-- x) phonP The boys drank the beer UP.			W	L		

To the best of my knowledge, this reranking does not pose a problem for Samek-Lodovici's (2002) analysis of English.

4.1.2 VP-Focus

The case of VP focus (cf. (10) above, repeated here as (23)) is similar to that of sentence focus except that all candidates with nuclear accent on the subject are ruled out by FOCP in addition to the violations mentioned above. The candidates we are considering here are given in (24), (24)a being the optimal candidate. (Here and elsewhere from now on I neglect candidates that violate FOCP.)

(23)   *VP-focus*:
        (Q: What did the boys do?)
        A1: They [drank up the BEER]_Foc

(24)   *VP-focus*:
        (Q: What did the boys do?)
        a.   ☞ (The boys/they) [drank up the BEER)
        b.   (The boys/they) [drank the BEER up)
        c.   (The boys/they) [DRANK up the beer)
        d.   (The boys/they) [DRANK the beer up)
        e.   (The boys/they) [drank UP the beer)
        f.   (The boys/they) [drank the beer UP)

Tableau 4 : VP Focus

	SUBJ	H-P	STRESSXP	STAY	H-I	WRAP
a. ☞ optimal candidate (x) iP (x) (x) phonP The boys drank up the BEER				*		

b. (x   ) iP
  (x) (x   --) phonP
  The boys drank the BEER up.
		*!				

c. (x   ) iP
  (x)(x   --   --) phonP
  The boys DRANK up the beer.
		!	*	*		

d. (x   ) iP
  (x)(x   --   --) phonP
  The boys DRANK the beer up.
		!	*			

e. (x   ) iP
  (x)(x   --) phonP
  The boys drank UP the beer.
		*!	*	*		

f. (x   ) iP
  (x)(x) phonP
  The boys drank the beer UP.
			*!			

The optimal candidate in a) violates STAY one time more than candidates b), d) and f). However, candidates b) and d) are ruled out by their violation of the higher-ranked H-P, which d) violates even twice. Additionally, candidate d) violates STRESSXP. Candidate f) is ruled out due to the performance on STRESSXP. Candidates c) and e) are ruled out on the basis of their performance on the prosodic constraints H-P and STRESSXP.

4.1.3 Minimal Focus

Suppose now that the focus is on the object-DP as demonstrated in (25). Is there any crucial difference as compared to the case of VP focus?

(25) *Minimal focus*:
(Q: What did the boys drink up?)
A: They drank up [the BEER]$_{Foc}$

Minimal focus is different in that all candidates that do not realise the nuclear accent on the nominal object fail to satisfy FocP and are thus ruled out. This leaves us with only two critical candidates, i.e. the discontinuous order with accent placement on *beer* as in (25) and the corresponding discontinuous order. The two candidates are compared in Tableau 5.

Tableau 5 : Minimal Focus

	SUBJ	H-P	STRESSXP	STAY	H-I	WRAP
a. ☞ optimal candidate (x) iP (x) (x) phonP The boys drank up the BEER				*		

b. (x   ) iP
     (x   ) (x   --) phonP
     The boys drank the BEER up.
		*!				

Crucially, candidate b) violates H-P since it fails to align to right boundary of the phonological phrase with its head. The phonological head is *beer* which is followed within the phonological phrase by another potential head: the particle *up*.

4.1.4 Subject Focus

Consider the case of subject focus as repeated in (26). We will consider two options. In the first case, the nominal object is realised by a full DP (cf. (26)a)) and occurs in the continuous order, in the second case we have an object pronoun (cf. (26)b)) and the discontinuous order is obligatory.

(26) *Subject focus*:
      (Q: Who drank up the beer?)
      a.   [The BOYS]_Foc drank up the beer.
      b.   [The BOYS]_Foc drank it up.

In the former case, the analysis is straightforward. All candidates that display nuclear accent placement on any other element than the subject violate FOCP and are thus ruled out. This leaves us with the two candidates given in Tableau 6 below, candidate a) being optimal, candidate b) suboptimal.

Tableau 6 : Subject Focus, full DP object

	SUBJ	H-P	STRESSXP	STAY	H-I	WRAP
a. ☞ optimal candidate (x) iP (x) (x) phonP The BOYS drank up the beer				*	*	

b. (x   ) iP
     (x   )(x   --) phonP
     The BOYS drank the beer up.
		*!			*	

Both candidates violate H-I since the head of the iP fails to be aligned with its right edge. Candidate a) violates STAY once more than candidate b). However, the performance on H-P once again determines which of the candidates is optimal. Candidate b) violates H-P since the right edge of the phonological phrase and its head are separated by a potential head, the particle.

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The case of the pronominal object requires more attention. It has been argued in the literature that object pronouns in English must be analysed as clitics, just as their Romance counterparts (cf. e.g. Chomsky 1995: 338; Ladd 1996: 180, 226f, and Uriagereka 1998: 219). Therefore, I argued in Dehé (2002: 268ff) that object pronouns in English particle verb constructions such as *it* in (26)b) above are cliticised to the preceding verb. The clitic host, I argued, must be the simplex rather than the complex verb, an assumption which was based on subtleties of the analysis of the internal structure of the complex verb. I will not go into any detail here about my former (or any other) analysis of pronoun placement within PVC's. As a matter of fact, pronominal objects obligatorily occur between the verb and the particle in English unless they are focused. In the case of subject focus, this yields a difference in word order between the structure involving a full DP object and that displaying a pronominal object. However, under the assumption that the pronominal object is a clitic its placement between the verb and the particle follows straightforwardly, given the constraints that have been suggested for clitic placement (cf. Section 3.2 above).

Two critical candidates will be compared. (27)a) shows the optimal candidate with the pronominal object positioned between the verb and the particle. In (27)b) the ungrammatical word order is given: a non-focused pronominal object is not allowed in the position following the complex verb.

(27)   *Subject focus*:
       (Q: Who drank up the beer?)
       a.   [The BOYS]$_{Foc}$ drank it up.
       b.   *[The BOYS]$_{Foc}$ drank up it.

Let us take a look at how we can account for the placement of the pronoun. The situation is illustrated in Tableau 7. For the moment, we neglect the prosodic constraints and instead concentrate on the constraints governing clitic positioning.

Tableau 7 : Subject Focus, pronominal object

	NON-INITIAL	EDGEMOST$_{CL, VP, L}$
a. ☞ optimal candidate The BOYS drank it up.		*
b. *The BOYS drank up it.		**!

The ranking as suggested by Anderson and Legendre is as given in Tableau 7. NON-INITIAL outranks EDGEMOST. Suppose that the crucial edge here is VP since in English, object clitics do not attach to higher constituents. In order to satisfy NON-INITIAL, the clitic will not precede the verb. However, we know that the particle verb in English can be separated by a nominal object. Moreover, the particle itself is a potential prosodic head. In this sense, the particle verb does not function as an unseparable (prosodic) unit – a fact that distinguishes them e.g. from prefix verbs where the prefix cannot function as a prosodic head and where prefix and verb thus cannot be separated by another element. Crucially then, the ungrammatical continuous candidate b) in Tableau 7 violates EDGEMOST twice, once by the verb

drank which precedes the clitic and, more importantly, by the particle which also occurs before the clitic pronoun. The optimal candidate a), on the other hand, only violates EDGEMOST once in order to satisfy NON-INITIAL. Only the verb but not the particle occurs between the left edge of the relevant domain (VP) and the clitic *it*.

But even if the reader wants to rely on the constraint interaction that I made use of in the previous sections rather than on the constraints governing clitic placement we will come up with the desired result. Let me use the comparative tableau as given below for illustration.

Tableau 8 : Subject Focus, pronominal object

a. ☞ optimal candidate The BOYS drank it up				
	SUBJ	H-P	STRESSXP	STAY
b. The BOYS drank up it.				W

Both candidates behave alike on SUBJECT. Now consider the phonological phrasing. The pronominal object is phonologically weak, i.e. it does not serve as a potential prosodic head. If we can neglect the pronoun for this reason then it does not play any role for the constraint H-P which means that the two candidates perform alike on this constraint, too. Similarly, they behave equally on STRESSXP. Crucially then, candidate a) outperforms candidate b) on STAY, since the particle is stranded in its underlying position in a), but accompanies the verb in b), which means that candidate b) violates STAY one more time than candidate a) does and is thus ruled out.

It follows then quite straighforwardly and without additional assumptions from the constraints introduced above that unmarked pronominal objects must occur in the discontinuous order. Note also that the ungrammaticality of the continuous order with unstressed pronouns results from a violation of syntactic rather than prosodic constraints. This then confirms Büring's intuition concerning the difference in strength with regard to pure syntactic constraints on the one hand and prosodic constraints on the other hand (cf. Section 3.3 above). An unstressed pronoun occuring in the continuous construction is ungrammatical due to the performance on STAY, whereas e.g. a focused DP-object in the discontinuous order (*They drank the BEER up*) might be marked but not ungrammatical to some speakers.

It also follows straightforwardly that a focused – and thus unreduced – pronoun appears in the continuous order just like any other focused DP (*The school threw out ME, not HIM*), but appears to be marked according to my informants in the discontinuous order (*The school threw ME out, not HIM*).

4.1.5 V-Focus

Now consider the pattern in (28). If the verb, but neither subject nor object is focused, we typically get the discontinuous construction with the particle occurring in the final position and bearing the nuclear accent.

(28)   *V-focus*:
    (Q: What happened to the beer? What did the boys do with it?)
    A1: They [drank]$_{Foc}$ the beer [UP]$_{Foc}$
    A2: They [drank]$_{Foc}$ it [UP]$_{Foc}$
    A3: They [DRANK]$_{Foc}$ the beer
    A4: They [DRANK]$_{Foc}$ it

Let me first look at A1, i.e. the particle verb construction with a full DP as nominal object. I will compare six candidates which are given in (29).

(29)   (Q: What happened to the beer? What did the boys do with it?)
    a.   They [drank]$_{Foc}$ the beer [UP]$_{Foc}$
    b.   They [drank UP]$_{Foc}$ the beer
    c.   They [DRANK]$_{Foc}$ the beer [up]$_{Foc}$
    d.   They [DRANK up]$_{Foc}$ the beer
    e.   They [drank]$_{Foc}$ the BEER [up]$_{Foc}$
    f.   They [drank up]$_{Foc}$ the BEER

(29)e) and f) are immediately ruled out bei FOCP since the verb is under focus but the object is most prominent. Candidates a) through d) are compared in Tableau 9 below.

Tableau 9 : V-focus, full DP

	SUBJ	H-P	STRESSXP	STAY	H-I	WRAP
a. ☞ optimal candidate They drank the beer UP			*			
b. They drank UP the beer		*!	*	*		
c. They DRANK the beer up		*!*	*			
d. They DRANK up the beer		*!*	*	*		

All candidates violate STRESSXP since the DP *the beer* is deaccented due to the given focus structure. STAY is violated once more by the candidates displaying the continuous word order (b) and d)) than by the discontinuous alternates. Crucially, all candidates but the optimal one fail to satisfy H-P. Under nuclear accent placement on the verb *drank* in candidates c) and d), H-P is violated twice since there are two potential heads between the right edge of the prosodic phrase and its head: the particle and the noun. Candidate b) violates H-P once since the noun as a potential head separates the particle from the edge of its phrase. Once more then, the performance on H-P determines the choice of the optimal candidate.

The status of (28)A2 as the optimal candidate with pronominal object follows immediately. Candidates with accent placement on the verb are ruled out for similar reasons as were discussed for (28)A1 except that the pronoun does not function as a potential prosodic head. However, the particle does, so that accent placement on *drank* is ruled out by the violation of H-P. Moreover, the continuous alternate (**They drank UP it*) is outperformed on STAY, or, if the reader prefers the

alternative argumentation, on the constraints governing clitic placement, for reasons similar to what has been argued for (27) above.

This leaves us with the simplex verbs in (28)A3 (*They DRANK the beer*) and A4 (*They DRANK it*). These sentences as felicitous answers in the given context are interesting because here but not in the case of the particle verb the verb (*drank*) carries the main accent. We saw above that accent placement on the verb was ruled out in the case of the particle verb by the performance on H-P which was violated twice. Why should A3 and A4 then be the optimal in the case of simplex verbs. The obvious answer is "because there is no particle that can be stressed". This is of course true. However, both A3 and A4 do violate H-P, so there must be a higher ranked constraint that is responsible for the pattern found here that has so far been neglected. Consider the candidates in (30) and the corresponding comparisons in Tableau 10 and Tableau 11.

(30)　*V-focus*, simplex verb:
　　　(Q: What happened to the beer? What did the boys do with it?)
　　　a.　They [DRANK]_Foc the beer
　　　b.　They [drank]_Foc the BEER.
　　　c.　They the beer [DRANK]_Foc
　　　d.　They the BEER [drank]_Foc

Tableau 10 : V-focus, simplex V, full DP, constraints considered so far

	FOCP	H-P	STRESSXP	STAY
a. optimal candidate ?? They DRANK the beer		*	*	
b. They drank the BEER	*!			
c. They the beer DRANK			*	*
d. They the BEER drank	*!	*		*

Tableau 11 : V-focus, simplex V, full DP

	HD-LFT	FOCP	H-P	STRESSXP	STAY
a. ☞ optimal candidate They DRANK the beer			*	*	
b. They drank the BEER.		*!			
c. They the beer DRANK	*!			*	*
d. They the BEER drank	*!	*	*		*

In Tableau 10, it seems as if candidate c) rather than candidate a) is optimal. Candidates b) and d) are immediately ruled out by FOCP since the accent is placed on the nominal object under V-focus. However, under the constraints considered so far, candidate c) outperforms the desired optimal candidate a) on H-P which a) violates due to the position of the potential head *beer* between the real head *drank* and the edge of its phrase. Candidate c) satisfies this constraint since the head *drank* is positioned at the edge of its phrase.

　　Obviously though, candidate c) violates a higher ranking phrase structure constraint, namely Grimshaw's (1997) HD-LFT which was introduced in Section 3.2

above and was taken for granted and thus neglected so far. In candidate c) but not in candidate a) the complement precedes its head, thereby violating HD-LFT once more than the optimal candidate.

A similar result is obtained if we replace the full DP object with a pronominal object. The difference between the particle verb and the simplex verb with respect to accent placement thus follows straightforwardly from the familiar constraints and their ranking without additional assumptions.

Let me compare to this analysis an earlier suggestion of mine which also drew on the fact that the particle in a sentence such as (28)A1 is stranded in the final position due to the focus structure, but which was within the minimalist framework rather than OT. In Dehé (2002: Chapter 5.2.3) I argued that the VP is the focus domain and that verb movement to v via AgrO and object movement to Spec-AgrOP are obligatory but that the particle has to remain within the VP as the focus domain in order to satisfy the *Condition on focus domains*. This condition holds that within a focus domain, a [+F] focus feature must be bound by "some kind of verbal affix" iff there is a mismatch with regard to focus features. After movement of the verb and the object out of the VP as the focus domain, there are two traces with oppositely specified focus features within the focus domain: V_{trace} is positively specified, whereas DP_{trace} is negatively specified. The particle must therefore remain within the VP in order to "bind" the positively specified focus feature and thus meet the condition on focus domains. Now this works nicely in the case of particle verbs. But what about the simplex verbs in A3/A4 in (28), where there is obviously no particle that can remain within the VP. In Dehé (2002) I followed Ishikawa (1999, 2000) and his "two V^0- internal domain analysis" (2VD analysis). Crucially, within this analysis, V^0 consists of two domains: V^{01} hosts the stem plus an optional prefix or an abstract affix and is only morphologically accessible, whereas V^{02} (= V^0) consists of V^{01} plus an optional particle or abstract affix and is syntactically accessible. Every simplex and prefix verb thus has an abstract affix that can be stranded within the VP after verb movement and can in theory satisfy the condition on focus domains.

Now note that Grimshaw (1997: 375) gives a very true comment on constraint violation in generative frameworks other than OT, i.e. the *Principles and Parameters* approach and the *Minimalist Program* as suggested by Chomsky (1981, 1995) and related work: "Under standard assumptions, positing a constraint that is violated requires corrective work. The constraint may be modified to a less general form so that no violation occurs, or taken to be satisfied by an invisible element or piece of structure." This is exactly what I did in Dehé (2002): As a matter of fact, I did not only introduce the *Condition on focus domains* as a new syntactic constraint which has not even been tested against data other than English PVC's. Moreover, in formulating this condition and applying it to simplex verbs, I made use of the latter of Grimshaw's options: In order to save the analysis for the case of simplex verbs that naturally cannot strand a particle in the position following the direct object, I took the *Condition on focus domains* to be satisfied by an invisible element, namely an abstract affix that served as a place-holder in the position within the complex verbal head that is otherwise occupied by an overt particle. Grimshaw (ibid.)

continues: "[...] Under OT, violability is the norm, [...] When constraints conflict, it is their relative ranking that determines which will be satisfied and which violated". Hence, within an OT analysis, we do not need to assume a complex verbal structure with invisible affixes, but can explain the facts in (28) without any additional assumptions. In English, the word order constraints (e.g. HD-LFT in Grimshaw's 1997 framework) forces a focused simplex V to precede its (non-focused) object by outranking the relevant discourse constraint, such as H-P. Notice also that even if one does not assume the Condition on focus domains as a principle within a minimalist analysis of the particle verb data one will have to account for the fact that the particle can be stranded and receive the focus accent, whereas a simplex verb does not have this option and instead the main accent is on the verb itself. As has been outlined above, in OT this situation follows straightforwardly from the interaction of the various constraints.

Obviously, the word order alternation occurring with transitive particle verb constructions and also the specific status that PVC's have as opposed to simplex verbs can be explained in terms of the interaction between syntactic and prosodic constraints and their ranking. Let us now compare German as a verb-second language displaying different behaviour.

4.2   German

Recall from Section 2 that in German, the particle is obligatorily separated from the finite verb in main clauses, but appears in a prefix-similar position in subordinate clauses and in main clauses with a perfect participle (cf. (2) above, repeated here as (31)).

(31) German
    a.   *Sie **ab**sagten   das Konzert.
         They off.said   the concert
         'They called off the concert.'
    a'. Sie   sagten   das Konzert   **ab**.
         They said   the concert   off.
         'They called off the concert.'
    b.   Sie   haben   das Konzert   **ab**gesagt.
         They have   the concert   off.said
    c.   ...   dass sie   das Konzert   **ab**sagten.
               that they   the concert   off.said
         '... that they called off the concert.'
    c'. *... dass sie   sagten   das Konzert   **ab**.
               that they   said   the concert   off.
         '... that they called off the concert.'

Let me first illustrate the focus structures parallel to those given for English in (9) through (13) above. I will give here the main clause participle construction as the most natural answer in the given contexts.

(32) *Wide focus*:
   (Q: Was ist passiert? / What happened?)
   [Die Veranstalter haben   das KonZERT   abgesagt.]$_{Foc}$
   The organisers   have   the concert   off.said
   'The organisers called off the concert.'

(33) *VP-focus*:
   (Q: Was haben die Veranstalter gemacht? / What did the organisers do?)
   Die Veranstalter [haben das KonZERT abgesagt.]$_{Foc}$

(34) *Minimal focus*:
   (Q: Was haben die Veranstalter abgesagt? / What did the organisers call off?)
   Sie haben [das KonZERT]$_{Foc}$ abgesagt.

(35) *Subject focus*:
   (Q: Wer hat das Konzert abgesagt? / Who called off the concert?)
   A: [Die VerANstalter]$_{Foc}$ haben   das Konzert /es   abgesagt.
        The organisers   have   the concert/it   off.said

(36) *V-focus*:
   (Q: Wieso findet das Konzert nicht statt? Was haben die Veranstalter gemacht?)
   A: Die Veranstalter/Sie   haben   das Konzert/es [ABgesagt]$_{Foc}$
        The organisers / they   have   the concert /it off.said

The nuclear accent is on the nominal object in the cases of wide focus, VP-focus
and minimal focus on the object, on the subject noun in the case of subject focus,
and on the particle in the case of V-focus. Following Truckenbrodt (1995) and
Samek-Lodovici (2002) I assume the following phonological phrasing for the case of
wide focus in (32) (and accordingly for the cases of VP-focus and minimal focus),
thus satisfying WRAP and STRESSXP:

(37) (x   )   iP
     (x   )   (x   --   )   phonP
     Die Veranstalter haben das KonZERT abgesagt
     The organisers   have   the concert   off.said
     'The organisers called off the concert.'

Crucially, the different focus structures do not induce a change in word order. This
fact seems to indicate that the prosodic alignment constraint H-P must be lower
ranked than in English, since the high rank of this constraint was responsible for
the choice of the word order in English where we observed alternating particle
positions depending on the focus structure and corresponding accent patterns.
Consider the cases of VP-focus and V-focus, examplarily. In English, the element
bearing the nuclear accent as the focus exponent is aligned with the right edge of
its phonological phrase. This is true for the nominal object in the case of VP-focus,
inducing the continuous word order, and for the particle in the case of V-focus,
inducing the discontinuous word order. In German on the other hand, the word
order is the same for both focus structures (cf. (33) and (36), respectively), the

location of the focus being indicated by the placement of the accent alone. This pattern suggests that in German syntactic constraints generally outrank prosodic constraints such as H-P (but note that the winning candidate may not be outperformed on FOCP). This is illustrated in Tableau 12 and Tableau 13 below. Let us begin with the case of VP-focus (cf. Tableau 12). The ranking as given in the tableaux below for German corresponds to that suggested by Samek-Lodovici (2002) in the analysis of the complement/adjunct-asymmetry in German.

Tableau 12 : VP-Focus, participle main clause

	FOCP³	STAY	WRAP	STRESSXP	H-I	H-P
a. ☞ optimal candidate (x) (x) (x --) Die Veranstalter haben das KonZERT abgesagt.						*
b.(x) (x) (-- x) Die Veranstalter haben abgesagt das KonZERT.		*!*				
c.(x) (x) (x --) Die Veranstalter haben gesagt das KonZERT ab.		*!				*
d.(x) (x) (x --) Die VerANstalter haben das Konzert abgesagt.	*!				*	*
e.(x) (x) (-- x) Die Veranstalter haben das Konzert ABgesagt.				*!		

Candidates a) through c) all satisfy WRAP, STRESSXP AND H-I. The optimal candidate violates H-P since the prosodic head is separated from the right edge of its phrase by the complex verb. Candidate b) satisfies H-P due to the position of the stressed noun at the right edge of its phonological phrase. However, H-P is outranked by the syntactic constraint STAY. Crucially, both candidates b) and c) violate STAY.[4] Candidate b) violates it twice, once for the verb and once for the particle, since in principle, the two members of the complex verb can occur separately. Candidate c) violates STAY once due to the raising of the verb to the position preceding the object. These violations of STAY are fatal.

As opposed to candidates b) and c), candidates d) and e) satisfy STAY. However, candidate d) violates FOCP since the nuclear accent is not placed within the focused constituent VP. Due to the high rank of FOCP this violation yields candidate d) an unfelicitous sentence in the given context. (But note that candidate d) also violates H-I. Since H-I dominates H-P, this violation would suffice to rule d) out.) Candidate

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[3] For the present purpose, I consider FOCP satisfied whenever the nuclear accent is situated within the focused constituent, here: VP.

[4] As above, I only consider the relevant violations of STAY without claiming that no more violations occur (as e.g. by subject movement to the Spec-position of a functional projection).

e) satisfies FOCP but fails to satisfy STRESSXP. This candidate thus shows that STRESSXP must outrank H-P in German.

Next, let us consider V-focus (cf. Tableau 13).

Tableau 13 : V-Focus, participle main clause

	FOCP	STAY	WRAP	STRESSXP	H-I	H-P
a. ☞ optimal candidate (x) (x) (x) Die Veranstalter haben das Konzert ABgesagt.				*		

b.(x   )
   (x   )   (x   )
   Die Veranstalter haben ABgesagt das Konzert.
		!		*		*

c.(x   )
   (x   )   (x)
   Die Veranstalter haben gesagt das Konzert AB.
		*!		*		

d.(x   )
   (x   )   (x   --   )
   Die Veranstalter haben das KonZERT abgesagt.
	*!					*

Once again, the performance on the syntactic constraint STAY is responsible for the word order pattern at least for candidates b) and c) as compared to the optimal candidate a). Candidate d) satisfies STAY and also STRESSXP which is violated by all other candidates including the optimal one. However, this candidate fatally violates FOCP and is thus ruled out. Needless to say that a candidate with nuclear accent placement on the subject would display the same fatal violation.

The differences between German and English with regard to the placement of the particle in relation to the object can thus be explained by the familiar constraints and their ranking.

An obvious question to ask here is why in finite main clauses as (31)a') above the main verb has to raise to the position preceding the direct object, stranding the particle in the final position. This is of course due to the fact that German is a Verb second (V2) language, which means that in main clauses without auxiliaries, the finite verb is preceded by exactly one phrase. Let me show how this follows from the constraints used so far and introduced in Section 3 above. Consider the critical candidates in Tableau 14 and Tableau 15 below, corresponding to the examples of VP-focus and V-focus in (38) and (39), respectively. Notice that with respect to word order, the optimal candidate is the same regardless of the focus structure and related accent pattern due to the low rank of the corresponding prosodic constraints. Thus both focus structures indicated in (38) and (39) come with identical word orders. Once again, the location of the focus is indicated by the placement of the accent without changing the word order.

(38)   VP-focus:
       Q: Was haben die Veranstalter gemacht? / What did the organisers do?
       A: Die Veranstalter   sagten   das KonZERT   ab.
          The organisers   said   the concert   off.
          'The organisers called off the concert.'

(39) V-focus
Q: Wieso findet das Konzert nicht statt? Was haben die Veranstalter gemacht?
A: Die Veranstalter sagten das Konzert AB.

Tableau 14 : VP-Focus, finite main clause

	OB-HD	STAY	WRAP	STRESSXP	H-I	H-P
a. ☞ optimal candidate (x) (x)(x) Die Veranstalter sagten das KonZERT ab.		*				*

b.(x   )
  (x   )(x   )
   Die Veranstalter absagten das KonZERT.
		**!				

c.(x   )
  (x   ) (x   )
   Die Veranstalter das KonZERT absagten.
	*!					*

The optimal candidate a) in Tableau 14 outperforms candidate b) on STAY which b) violates twice due to the raising of both the verb and the particle. STAY is violated only once by candidate a) since the particle is stranded in the final position. Candidate c) satisfies STAY since the complex verb remains in the position following the object. However, it is outperformed on OB-HD which holds that a projection has a head. Under the common assumption that the VP is dominated by a functional projection in whose specifier the subject is eventually situated, the head position of this projection must be filled in order to satisfy OB-HD. In candidates a) and b), this position is filled by the verb. Obviously, OB-HD outranks STAY in German.

Note that OB-HD is satisfied by all candidates in Tableau 12 and Tableau 13 above by the auxiliary *haben*.

Tableau 15 : V-Focus, finite main clause

	OB-HD	STAY	WRAP	STRESSXP	H-I	H-P
a. ☞ optimal candidate (x) (x)(x) Die Veranstalter sagten das Konzert AB.		*				

b.(x   )
  (x   )(x   )
   Die Veranstalter ABsagten das Konzert.
		**!				*

c.(x   )
  (x   ) (x   )
   Die Veranstalter das Konzert ABsagten.
	*!					

The candidates in Tableau 15 differ from those in Tableau 14 above solely in the performance on H-P which is irrelevant due to its low rank. This indicates once again that the prosodic constraint H-P that was mainly responsible for the choice of the word order in English does not play any crucial role in German as far as word order is concerned. The word order is determined solely by syntactic rather than

prosodic constraints. The prosodic constraints, FOCP and STRESSXP in particular, serve to control the location of the nuclear accent.

5   Conclusion and Outlook

I have shown that despite the different behaviour which the transitive particle verb construction displays in English and German, the pattern can be explained in terms of the same constraints within the framework of OT. The differences which have long been discussed in the literature on the subject can be accounted for by merely reranking these constraints. In English, prosody and focus structure seem to play a more prominent role, accordingly the corresponding constraints are relatively highly ranked. In German, syntactic factors are dominant, thus morphosyntactic constraints outrank prosodic ones. These language specific rankings also account for the fact that in English there is an apparently optional word order alternation: Following Büring, I assumed that violations of pure morphosyntactic constraints such as STAY and SUBJECT have stronger effects on the grammaticality of a sentence than violations of focus-alignment constraints, in that violations of focus-alignment constraints yield marked candidates, whereas violations of morphosyntactic constraints yield ungrammatical candidates. In English, H-P is mainly responsible for the overall pattern. Since H-P is a focus-alignment constraint, violation of this constraint yields a marked rather than a grammatically unacceptable sentence. Therefore, two word orders are in principle grammatical in English, one of which is more appropriate than the other in a given context. In German, on the other hand, morphosyntactic constraints such as STAY outrank focus-alignment constraints. Violation of these constraints yields ungrammatical sentences, thus no word order alternation can be observed in German.

I have also specified the ranking of H-P and STRESSXP for English. Due to the lack of clear evidence, both prosodic constraints were previously ranked below the syntactic constraints SUBJECT and STAY (Samek-Lodovici 2002). However, the behaviour of the particle verb construction in English, in particular the case of sentence focus, provides clear evidence for the new ranking suggested above, where both H-P and STRESSXP dominate STAY.

The OT-account to the verb-particle construction seems to be promising with respect to the development of a universal analysis to the construction challenging the high number of language specific suggestions that have been made in the literature on to topic so far. If the differences between English and German can be reduced to the reranking of a set of given constraints then this should also be possible for other Germanic languages displaying particle verbs. I leave this to future research.

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