

## Verb Phrase Pronominalization in Danish: Deep or Surface Anaphora?\*

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### 1. Introduction

In their seminal (1976) paper Hankamer and Sag show that anaphora comes in two basic types. Deep anaphors, like the *it* in *Jasper ate a durian but Maria couldn't do it*, are syntactically atomic. They receive their interpretation from rules of semantic interpretation that make reference to objects in a discourse or other semantic model (Sag and Hankamer 1984). Surface anaphors on the other hand possess a fully articulated syntactic structure whose surface representation is rendered opaque by phonological operations such as deletion. Verb Phrase Ellipsis (VPE), for example, results from the nonpronunciation of a full-fledged verb phrase: *Rupert likes horse races but Holly doesn't [~~like horse races~~]*.

Crucially for Hankamer and Sag, whether an anaphor is deep or surface is independent of whether it has an overt phonological realization or not. For the most part, later research has backed up this claim. *Do it* anaphora (Kehler and Ward 2004) and Null Complement Anaphora (Depiante 2000) are instances of overt deep and nonovert deep anaphora respectively, while VPE and Sluicing are nonovert surface anaphors (Merchant 2001; Goldberg 2005). The exception is the overt surface category. Hankamer and Sag's only example is anaphoric *so*, e.g. *Adrian played chess and Roxanne did so too*, but this classification has since been called into question (Kehler and Ward 1999, 2004).

In this paper, we present data from a little-studied type of verb phrase anaphora in Danish and argue that it instantiates the controversial overt surface anaphora category of Hankamer and Sag.<sup>1</sup> The phenomenon, which we call Verb Phrase Pronominalization (henceforth VPP), is illustrated in (1)-(2).<sup>2</sup>

- (1) *Han siger han kan hækle, men selvfølgelig kan han ikke det.*  
he says he can crochet but of.course can he not DET  
'He says he can crochet, but of course he can't.'

- (2) *Han siger han kan hækle, men **det** kan han ikke.*  
 he says he can crochet but DET can he not  
 ‘He says he can crochet, but he can’t.’

In (1), the proform *det* occurs in place of a verb phrase and stands in an anaphoric relationship to the verb phrase of the preceding clause. The anaphoric *det* can also appear in clause-initial position, as shown in (2).

In §2, we consider the possibility that the *det* proform is an instance of deep anaphora and point out some challenges to this approach. In §3, we show that a surface anaphora analysis of *det* is supported by Hankamer and Sag’s original diagnostics, though certain restrictions on extraction out of VPP remain unexplained. In §4, we argue that these restrictions are the result of the interplay between VPP and the verb second phenomenon. We discuss in some detail what this interaction reveals about how locality should be defined. A short conclusion follows in §5.

## 2. Deep Anaphoric Properties of VPP

Two properties of Danish VPP suggest that it is a deep anaphor. One is that it involves an overt proform, the other that certain kinds of extraction from inside the anaphor are impossible. We discuss each in turn.

As noted above, Hankamer and Sag (1976) classify English VPE and Sluicing as surface anaphors and English *it* and *one* anaphora as deep anaphors. From this, it is tempting to infer that surface anaphora is always null, whereas deep anaphora may involve a phonologically overt proform. If so, the fact that Danish VPP involves the proform *det* could be taken as evidence that it is deep. However, Hankamer and Sag argue explicitly (393, 411-418) that the distinction between deep and surface anaphora cannot be correlated with the presence versus absence of an overt proform. As an example of a phonologically null deep anaphor, they cite Null Complement Anaphora (e.g. *I asked Bill to leave, but he refused Ø*). Relevant to our purposes here, they also claim that there are phonologically overt surface anaphors, a category they exemplify with English *so* in both its sentential (*believe so*) and verb phrase (*do so*) uses. Kehler and Ward (1999:246-249, 2004:394-397) challenge this classification. They argue that *so* anaphora exhibits mixed behavior: it behaves like a surface anaphor in requiring a linguistic antecedent, but, unlike other surface anaphors, does not require syntactic parallelism between the antecedent and target clauses. If we accept Kehler and Ward’s arguments, there are no clear instances of overt surface anaphora in Hankamer and Sag’s original taxonomy, and one would therefore be tempted to count the overtness of VPP as evidence against it being a surface anaphor.

The second property of VPP that seems to point to it being deep anaphora has to do with extraction. According to Hankamer and Sag, surface anaphors have

internal structure in the early stages of the derivation, while deep anaphors are syntactically atomic. If so, one would expect it to be possible, at least in principle, to extract subconstituents out of a surface anaphor; in English VPE, for instance, wh-extraction from the site of ellipsis is grammatical, though certain information structural conditions apply (Schuyler 2001). For deep anaphors, no subextraction should be possible: if there is no internal structure, there is nothing to extract. In this light, consider the examples in (3) and (4), which show  $\bar{A}$ -extraction of the direct and indirect object respectively:<sup>3</sup>

- (3) \**Jeg ved hvem Susan kildede, men jeg ved ikke hvem Palle*  
 I know who Susan tickled but I know not who Palle  
*gjorde det.*  
 did DET  
 Intended: ‘I know who Susan tickled but I don’t know who Palle did.’
- (4) \**Jeg ved hvem Susan lånte bilen til, men jeg ved ikke hvem*  
 I know who Susan lent car.DEF to but I know not who  
*Palle gjorde det.*  
 Palle did DET  
 Intended: ‘I know who Susan lent the car to, but I don’t know who Palle did.’

Such examples are uniformly ungrammatical, indicating that the  $\bar{A}$ -extraction of verb phrase-internal arguments is impossible in the context of VPP. If VPP is a deep anaphor standing in for a  $vP$ , we have a straightforward explanation for this fact: extraction from inside the  $vP$  anaphor is impossible because there is no syntactic structure inside the anaphor and hence nothing to extract. In other words, there is no base position for the second *hvem* in (3) and (4).

The restriction observed for the  $\bar{A}$ -movement of verb phrase-internal elements does not hold, however, for A-movement. VPP is possible with unaccusative verbs (5) and passives verbs of both the analytical type formed with the auxiliary *blive* (6a) and the synthetic type formed with the suffix *-s* (6b). (The antecedent is bracketed in the examples below.)

- (5) *Bare toget ville [bryde sammen lige nu]! Men det*  
 just train.DEF would break together right now but DET  
*gjorde det selvfølgelig ikke!*  
 did it of.course not  
 ‘If only the train would break down right now! But of course it didn’t!’
- (6) a. *Det var første gang, jeg ønskede at blive [afsat på*  
 it was first time I wanted to become dismissed on  
*stedet], og det blev jeg.*  
 place.DEF and DET became I  
 ‘It was the first time I had wanted to be dismissed on the spot and I was.’

- b. *Staten skal betale 100 mio. kr, hvis planen skal*  
state.DEF must pay million Kroner if plan.DEF must  
*[gennemføres på normeret tid]. Og det skal den...*  
implement.PASS on normal time and DET must it  
‘The state must pay 100 million Kroner if the plan is to be implemented  
within the allocated time period. And it must be...’

At the core of transformational approaches to passives and unaccusatives is the assumption that their subjects originate inside the VP. If so, the fact that VPP is possible with unaccusatives and passives speaks against *det* being a syntactically atomic proform standing in for a verb phrase, and consequently against the deep anaphora analysis. This point holds even if passive and unaccusatives are taken to be derived not by A-movement but by (short) null-operator movement as proposed by Neeleman and Weerman (1998:145-178). A similar argument for the surface anaphoric status of a verb phrase anaphor can also be made within a nontransformational framework like LFG (Lødrup 1994).

The same issue arises for the subjects of transitive and unergative verbs as well, since, by hypothesis, they are merged in Spec-*vP* and then raise to subject position in T. In this case, one could appeal to the possibility that the VPP proform stands in for a smaller constituent than *vP*. If *det* is actually a VP, then external arguments, which originate outside of it, would be able to escape VPP, even under a deep anaphora analysis. The problem with this analysis is that it holds no promise of extending to the unaccusative and passive cases: there is no smaller constituent inside the *vP* in (5)-(6) that contains the verb and verb phrase-internal adjuncts, but not the internal argument. We therefore do not pursue it further.

To maintain the deep anaphora analysis of VPP in light of the data above, we would have to abandon the widely held assumption that the patient subjects of unaccusatives and passives are merged inside the verb phrase. These subjects would have to originate outside the target of VPP: VP or *vP*. Either possibility raises nontrivial questions about how these subjects receive their  $\theta$ -role.

A similar challenge to the deep anaphora analysis comes from the possibility of VPP with a raising predicate like *lade til* ‘seem’, as shown in (7).

- (7) *Han lader til at have glemt alt om aftalen, men det*  
he seems to that have forgotten all about deal.DEF but DET  
*gør hun ikke.*  
does she not  
‘He seems to have forgotten all about the deal, but she doesn’t.’

If *det* is a deep anaphor, it is a mystery where *hun* ‘she’ originates before raising to the matrix subject position of the target clause, since there is no embedded Spec-*vP* to host it.

To summarize, the fact that VPP involves an overt proform is weak evidence that it is a deep anaphor. A deep anaphora analysis would also explain why the target of VPP does not allow for the  $\bar{A}$ -extraction of internal arguments, though the same analysis would force us to abandon a movement analysis of passives and unaccusatives, and raising predicates as well, and more generally to question the idea that  $\theta$ -role assignment is correlated with the base position of an argument.

### 3. Surface Anaphoric Properties of VPP

Turning now to consider the possibility that VPP is a surface anaphor, we find four sources of evidence for this position: 1) it exhibits the Missing Antecedent Phenomenon; 2) it strongly prefers a linguistic antecedent; 3) it requires parallelism in transitivity between the antecedent and target clauses; and 4) it allows  $A$ -extraction of verb phrase-internal arguments to subject position. Since the extraction data has already been discussed in the previous section (see (5)–(7)), in this section we will discuss only the first three pieces of evidence, which comprise Hankamer and Sag’s original diagnostics for distinguishing deep and surface anaphora.

The first of Hankamer and Sag’s diagnostics is that surface anaphora exhibits the Missing Antecedent Phenomenon (see Johnson (2001:455–456) for qualifications). This test refers to the configuration in which a pronoun finds its referent within the site of the anaphor. This is possible with VPP, as shown in the example of (8).

- (8) *Jeg har aldrig redet på en kamel, men det har Ivan og han  
I have never ridden on a camel but DET has Ivan and he  
siger at **den** stank forfærdeligt.  
says that it stank terribly  
‘I’ve never ridden a camel, but Ivan has and he says it stank terribly.’*

Intuitively, the bolded pronoun *den* ‘it’ refers to the camel that Ivan rode. It therefore must be getting its reference from a DP contained within the target of VPP. (The indefinite DP *a camel* in the first clause of the conjunct is not a possible antecedent for the pronoun since it is under the scope of negation and so does not introduce a discourse referent.) For this to be the case, the site of VPP must have full syntactic structure; it must be a surface anaphor.

The second characteristic of surface anaphors noted by Hankamer and Sag is that they strongly prefer a linguistic antecedent (see Merchant (2004:717–724) for a careful discussion and defense of this claim). The meaning of the anaphor cannot be inferred pragmatically from the real-world context. For VPP this is shown by the example in (9).

- (9) [A and B are observing C struggling to swim in a pool]  
 A: #*Det kan jeg heller ikke.*  
 DET can I either not  
 Intended: ‘I can’t swim either.’

For A’s utterance in (9) to be felicitous, either A or B must provide a linguistic antecedent (VPP like other surface anaphors is licit across speakers), saying something to the effect of *C sure can’t swim*. If no such antecedent is present, the sentence in (9) cannot be felicitously uttered.

The final diagnostic Hankamer and Sag provide is that surface anaphors require structural identity between the target and antecedent clauses. They only consider the requirement that the voice of the target and antecedent clauses be the same, a constraint that Kehler (2000, 2002) shows only holds when the target and antecedent clauses are in a Resemblance coherence relation. We avoid this complication by looking at mismatches in the transitivity of the target and antecedent clauses, which are always ungrammatical in English VPE:

- (10) \**Maria still tried to break the vase even though it wouldn’t [~~break~~].*

Danish VPP exhibits the same transitivity parallelism requirement. *Hænge* ‘hang’, like its English equivalent, alternates between transitive and intransitive forms. A clause containing the transitive form cannot serve as the antecedent to a VPP target clause containing the intransitive form:

- (11) \**Jeg ville hænge hesteskoen over døren og det gør den nu.*  
 I will hang horseshoe.DEF over door.DEF and DET does it now  
 Intended: ‘I wanted to hang the horseshoe over the door and it hangs there now.’

If the three tests discussed here are correct in diagnosing VPP as a surface anaphor, we would expect  $\bar{A}$ -extraction to be possible in sentences containing VPP (following Schuyler (2001)). This expectation is only partially borne out:  $\bar{A}$ -extraction is possible with subjects (12), but not with direct and indirect objects (3)-(4). Subject  $\bar{A}$ -extraction is possible whether the subject originates as the external argument (12a) or internal argument (12b) of the verb.

- (12) a. *Jeg kan ikke hækle, men hvem kan egentlig det nu om dage?*  
 I can not crochet, but who can actually DET now about days  
 ‘I don’t know how to crochet, but who actually does these days?’

- b. *Jeg ved at både Susan og Palle gerne ville vælges*  
 I know that both Susan and Palle happily would elect.PASS  
*til formand, men jeg ved ikke hvem af dem blev det.*  
 to chairman but I know not who of them became DET  
 ‘I know that both Susan and Palle wanted to be elected chairperson, but  
 I don’t know which of them was.’

As with the A-extraction of passive and unaccusative subjects, if we consider the target of VPP to be VP, it is quite expected that  $\bar{A}$ -extraction of external argument subjects is always possible. These subjects originate outside the target of VPP and therefore can raise to Spec-TP and from there to Spec-CP whether VPP is a deep or surface anaphor. For internal argument subjects of the verb that undergo  $\bar{A}$ -extraction, however, we are led to the conclusion that VPP must be an instance of surface anaphora. Again, pursuing a deep anaphora analysis of VPP in light of these facts would require us to abandon a movement analysis of the subjects of unaccusatives and passives, as well as the correlation between  $\theta$ -role assignment and the position where an argument is merged.

More problematic for the surface anaphora analysis of VPP is the fact discussed above, that  $\bar{A}$ -extraction of direct and indirect objects is not possible, as shown in (3) and (4). (This cannot be seen as a general ban on the  $\bar{A}$ -extraction of internal arguments since we have just seen that the  $\bar{A}$ -extraction of subjects that originate as the internal argument of the verb is possible.) This fact seems to suggest that VPP is a deep anaphor, for if there were no VP-internal structure, there would be no direct or indirect objects available for extraction. Despite the fact that nonsubject VP-internal  $\bar{A}$ -extraction is ungrammatical, we believe that a surface anaphor analysis of VPP is possible. Arriving at this resolution requires us to look more closely at the interaction between VPP and verb second—a task we take up in the next section.

#### 4. Locality and Competition for Spec-CP

As noted in the introduction, the proform *det* that stands in for the verb phrase in VPP can appear in two positions: in canonical verb phrase position (1) or in clause-initial position (2). When *det* appears clause-initially, we analyze this as an instance of movement to Spec-CP, accompanied by movement of the finite verb to C. Instances where *det* appears unfronted arise when some other element occupies Spec-CP; this can be a *wh*-phrase (12), an adverbial like *selvfølgelig* (1), the antecedent of a conditional (13), the null operator of a polar question (14),<sup>4</sup> or a (contrastive) topic subject (15).

- (13) [<sub>CP</sub> *Hvis det viser sig at være nødvendigt at flytte*  
 if it shows REFL to be necessary to move  
*hovedkontoret til USA*], *gør vi måske det...*  
 head.office.DEF to USA do we perhaps DET  
 ‘If it turns out to be necessary to move the head quarters to the US, we  
 might (do so)...’
- (14) [Lise Carlsen:] “...*Om fødslen måske er gået i gang*  
 whether birth.DEF maybe is gone in step  
*for tidligt.*” *Hans hjerte begyndte at hamre. Som om han havde*  
 too early his heart started to pound as if he had  
*løbet langt og hurtigt.* [Per Toftlund:] “*Er den det?*”  
 run far and fast is it DET  
 “...If labor has perhaps started early.” His heart started to pound as if he  
 had run far and fast. “Has it?”
- (15) *En del af dem klarer sig, andre gør det ikke.*  
 a part of them deal.with REFL others do DET not  
 ‘Some of them manage, others don’t.’

The purpose of this section is to understand why these elements block movement of *det* to Spec-CP, which in turn will lead to an understanding of why the  $\bar{A}$ -extraction of nonsubject internal arguments is not possible with VPP.

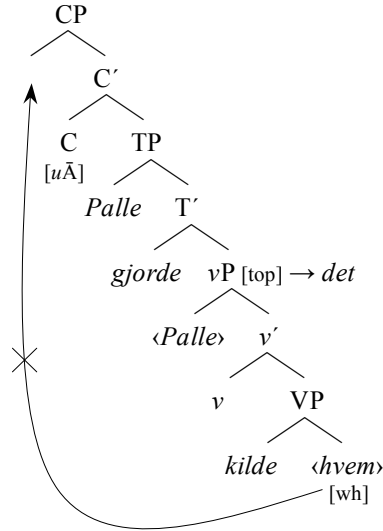
Since *det* can participate in fronting that is accompanied by verb second, and since this movement is generally assumed to be for discourse purposes (Platzack 2000; Rizzi 1997), we assume that the  $\nu$ P targeted by VPP is topic-marked, bearing a topic feature [top]. This assumption is supported by the fact that VPP requires a linguistic antecedent that is semantically identical, in some sense, to the target, which will therefore always be given information (see Merchant (2001:13-37) for discussion of the givenness requirement on ellipsis). We propose that the feature driving the movement of *det* to Spec-CP is a generalized [ $u\bar{A}$ ] feature on C. This feature can be satisfied by merging or moving a phrase that bears an interpretable topic, focus, or *wh* feature into Spec-CP.<sup>5</sup>

Positing a single [ $u\bar{A}$ ] feature on C captures the fact that various elements in a clause compete for a single discourse position in Danish: Spec-CP. If there is only one [ $u\bar{A}$ ] feature, then once it has been checked locally by a single discourse-marked element merged or moved into the specifier of C, all other discourse-marked elements in the clause, such as the anaphoric *det*, will be ineligible for movement and will remain in situ.

With this much in place we can now understand why  $\bar{A}$ -extraction of the direct and indirect objects in (3) and (4) is ungrammatical. If  $\nu$ P bears a [top] feature and the internal argument bears a [wh] feature, movement of the internal argument past  $\nu$ P to Spec-CP in order to satisfy the [ $u\bar{A}$ ] feature on C would be a violation of locality. This is shown in (16), the structure for the sentence in (3).



(16) *Jeg ved hvem Susan kildede, men jeg ved ikke...*



Intuitively, it seems clear that the ungrammaticality of (3)/(16) is due to a violation of locality; the topic marked  $vP$  is higher in the tree than *hvem* and therefore appears to be closer to Spec-CP. It is not possible, however, to square this with the most widely assumed definition of locality, one formulation of which is given in (17).<sup>6</sup>

- (17)  $G$  is the closest category in the sister of  $H$  iff there is no distinct category  $K$  such that  $K$  c-commands  $G$  and  $K$  bears a feature matching  $F$ .  
(Fitzpatrick 2002:446)

In this definition,  $G$  is a possible goal, corresponding to  $vP$ , or *hvem* in (16),  $H$  is the probe, here  $C$ , which hosts the attracting feature  $F$ , here  $[u\tilde{A}]$ . If we apply (17) to (16) we see that both  $vP$  and *hvem* qualify as closest categories to  $C$ , since in neither case is there a  $K$  that c-commands  $vP$  or *hvem* and bears a feature matching  $[u\tilde{A}]$ . In the case of  $vP$ , this is because neither of the two elements that c-command  $vP$ , namely the subject (*Palle*) and the finite verb (*gjorde*), bears a feature matching  $[u\tilde{A}]$ . In the case of *hvem*, this is because the one element that bears the relevant feature,  $vP$ , does not c-command *hvem*. Consequently, under the definition of locality in (17), the topic-marked  $vP$  and wh-phrase *hvem* are equidistant from  $C$  and it is predicted that either would be able to move to Spec-CP, contrary to fact. Any definition of locality that relies on an intervening c-commanding element will have the same problem in accounting for (16), since  $vP$  does not c-command *hvem*.

$\nu$ P does, however, contain *hvem* and containment has been proposed to be relevant for some conditions on movement, most notably the A-over-A Principle (Chomsky 1973:235). It states that if there are two phrases of the same category, both of which are possible targets of a particular operation and if one phrase contains the other, then it is the maximal phrase that the operation applies to. Relevant for our purposes, Bresnan (1976) generalizes this principle in her Relativized A-over-A Principle to apply to operations that make reference to non-categorical labels. It thus applies in configurations like the one in (16).<sup>7</sup> Both the topic-marked  $\nu$ P and the wh-word *hvem* bear discourse features that are possible goals for the  $[u\bar{A}]$  feature. Only movement of  $\nu$ P is grammatical, as it contains *hvem*.

While Bresnan's intuitions cannot be captured by the definition of locality in (17), at least one current definition of locality does—that of Epstein et al. (1998), which is based on reducing the number of mutual c-command relations that are created. For them, when two elements are eligible for movement, the more local of the two is the one whose movement results in the creation of the fewest number of mutual c-command relations. Mutual c-command relations arise in two ways. The first is when two items are merged; sisters always mutually c-command each other. The other configuration that yields a mutual c-command relationship is when A c-commands B and B c-commands a copy of A.<sup>8</sup> In (16), for instance, *Palle* and *gjorde* mutually c-command each other because the occurrence of *Palle* in Spec-TP c-commands *gjorde*, which in turn c-commands the occurrence of *Palle* in Spec- $\nu$ P. With this definition of locality in mind, movement of *hvem* to Spec-CP results in the creation of six mutual c-command relations (between *hvem* and *kilde*, *v*, *gjorde*, *Palle*, C, and C'), while movement of  $\nu$ P to Spec-CP results in the creation of only four mutual c-command relations (between  $\nu$ P and *gjorde*, *Palle*, C, and C'). Movement of  $\nu$ P to Spec-CP creates two fewer mutual c-command relations than the movement of *hvem*, and therefore  $\nu$ P is more local to C than *hvem*.

Note that this formulation of locality predicts the ungrammaticality of (3)-(4) even if movement to Spec-CP of an item contained within  $\nu$ P proceeds through Spec- $\nu$ P (Chomsky 2000, 2001; Legate 2003; Rackowski and Richards 2005). Under the definition in (17), the topic-marked  $\nu$ P and the wh-word *hvem* in its specifier are equidistant from C, since a maximal category does not c-command its specifier. Either should be able to raise, which as we saw in (3)-(4) is not possible. This is not an issue with the formulation of locality proposed by Epstein et al.; movement of *hvem* from Spec- $\nu$ P creates eight mutual c-command relations (between *hvem* and *kilde*, *v*, *Palle* in Spec- $\nu$ P,  $\nu$ P, *gjorde*, *Palle* in Spec-TP, C, and C') while movement of  $\nu$ P creates only five (between  $\nu$ P and *hvem*, *gjorde*, *Palle*, C, and C').

Adopting Epstein et al.'s definition of locality allows us to account for the ungrammaticality of direct and indirect object  $\bar{A}$ -extraction under VPP while maintaining an analysis of VPP as surface anaphora. We also understand why subject

extraction is always possible. Movement of the subject to Spec-TP is A-movement—it is driven by the EPP, a feature for which the topic-marked *vP* is not an eligible goal. Once the subject is in Spec-TP, if it is discourse-marked (as it is in the sentences in (12)), it will be closer to C than *vP*.

## 5. Conclusion

Our main conclusion is that the anaphoric proform *det* in Danish VPP—which at first appears to be a deep anaphor—is in fact a surface anaphor.

The major obstacle to analyzing *det* as surface anaphora is the impossibility of VPP accompanied by the  $\bar{A}$ -movement of verb phrase-internal elements. We propose that this difficulty can be overcome by considering the interaction between VPP and the verb second properties of Danish. The proform *det* competes with other elements in the sentence for Spec-CP and, under a definition of locality like that of Epstein et al. (1998), it will be closer to C than any discourse-marked elements contained within it, including direct and indirect object *wh*-phrases.

If our argument goes through, Danish VPP provides important confirmation of Hankamer and Sag’s typology of anaphora, since it instantiates the overt surface anaphora category, whose existence was otherwise in question.

## Notes

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<sup>1</sup> Danish VPP has been observed in the descriptive literature (Hansen 1967:31; Diderichsen 1968:178; Allan et al. 1995:158-159), but no theoretical treatment has been offered to date. A range of descriptively similar verb phrase anaphoric constructions are found throughout the Germanic languages, e.g. auxiliary plus *det* in Norwegian (Lødrup 1994), Swedish *göra det* (Källgren and Prince 1989), the German *es* construction (Winkler 1998; López and Winkler 2000), Dutch Short Do Replies (van Craenenbroeck 2004:125-260), and English *do it* and *do so* (Kehler and Ward 1999, 2004). Despite surface similarity, each of these constructions seems to differ in some respect from Danish VPP. We therefore cannot assume that our conclusions about VPP will carry over to any of them. Comparative work on this topic is clearly called for.

<sup>2</sup> The abbreviations used in this paper are: DEF, definite; DET, the VPP proform *det*; PASS, passive; REFL, reflexive. Our data come largely from the Korpus 2000 corpus. Some examples have been modified for reasons of space and exposition. Additional judgments come from native Danish speakers consulted in the United States.

<sup>3</sup> Note that in (4) the antecedent clause has the form  $V DP_{DO} PP_{IO}$ . Danish also has a double object construction of the form  $V DP_{IO} DP_{DO}$ , but when extracting the recipient/goal argument the former is preferred. It is unclear whether we are justified in calling this indirect object extraction, but what is important for our purposes is that the extractee originates inside the verb phrase.

<sup>4</sup> Leif Davidsen, *De gode søstre*, p. 147.

<sup>5</sup> The generalized [ $u\bar{A}$ ] feature can be implemented formally as an unvalued feature on C that can be valued by a range of interpretable features like [wh] and [top], much like an uninterpretable case feature.

<sup>6</sup> This formulation, due to Fitzpatrick (2002), is similar to the locality condition that Chomsky (2001) places on the agree relation. There are a number of other definitions that are similar in spirit to (17), which are similarly not able to capture the intuition that topic-marked vP is closer to C than a discourse-marked DP contained within it (see Doggett (2004:7) and references cited there).

<sup>7</sup> We thank Kyle Johnson for pointing this out to us.

<sup>8</sup> This formulation of locality differs from the original formulation of Epstein et al. in that it is representational, while theirs is stated in purely derivational terms. Despite this difference, we believe that our formulation is in the spirit of the original authors' and that it has the same empirical coverage.

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