VERBAL INFLECTION AT A DISTANCE

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This paper examines inflection on fronted verbs in Danish. In both VP topicalization and VP left dislocation with resumption, the inflection on the fronted verb is governed by an in situ auxiliary, suggesting that the fronted VP originates as a sister to that auxiliary. This analysis is straightforward for VP topicalization, but fails for VP left dislocation. Yet, the two show identical patterns of inflection, down to systematic covariance in case of interspeaker variation. I take this as evidence that the two fronting constructions have the same syntax and only differ in whether the proform that mediates between the auxiliary and the fronted VP is overt or null. That in turn implies that verbal inflection can be governed at a distance, and that some mechanism other than the standard generative ones (affix-hopping, selection, and feature valuing) is involved.

1 Introduction

Danish has a verbal system much like the English one in which each auxiliary determines the inflection of the following verbal element.[1] In (1a), for instance, the modal *må* (must) requires the following auxiliary, perfect *have* (have), to appear in the infinitival form and *have* requires *gemme* (hide) to appear in the past participle form.[2] Any other forms of *have* and *gemme* are ungrammatical in (1a). The relevant inflectional options are given in (2) below.

(1) a. De må hav-e gem-t den godt.
they must.PRES have-INF hide-PPC it well
'They must have hidden it well.'

b. Han kan vær-e blev-et stoppet i tolden.
he can.PRES be-INF become-PPC stop-PPC in customs.DEF
'He could have been detained in customs.'

(2)

INFINITIVE	PRESENT	PAST	PARTICIPLE	GLOSS
bliv-e	*bliv-er*	*blev*	*blev-et*	'become'
gemm-e	*gemm-er*	*gem-te*	*gem-t*	'hide'
hav-e	*har*	*hav-de*	*haf-t*	'have'
kunn-e	*kan*	*kunn-e*	*kunn-et*	'can, may'
mått-e	*må*	*mått-e*	*mått-et*	'must'
stopp-e	*stopp-er*	*stopp-ede*	*stopp-et*	'stop'
vær-e	*er*	*var*	*vær-et*	'be'

Similarly in (1b), the modal *kan* (can) requires perfect *være* (be) to appear in the infinitive, *være* requires a past participle of the passive auxiliary *blive*, and *blive* requires a past participle form of the main verb *stoppe* (stop).

Within the generative tradition such dependencies have been analyzed first as affix hopping (Chomsky 1957:38–40), then as selection (Emonds 2000:125–130, 183–191, Gazdar, Klein, Pullum, and Sag 1985)

[1] There are differences, of course. Danish has no correspondent of progressive *be*, but two perfect auxiliaries *have* (have) and *være* (be); *være* is used, roughly, with unaccusative verbs and *have* elsewhere (Vikner and Sprouse 1988, Bjerre and Bjerre 2007). Unlike (standard) English, Danish allows modals to cooccur and to occur under perfect *have*. These differences are unimportant for the matter at hand.

[2] I use the following abbreviations in the glosses: DEF = definite, DET = VP proform, DP = discourse particle, INF = infinitive, PASS = passive, PL = plural, POSS = possessive, PPC = past participle, PPI= positive polarity item, PRES= present, REFL = reflexive.

and, most recently, as the morphological result of syntactic feature valuing (Adger 2003). All of these analyses assume a local relationship between the element determining the inflection and the element exhibiting the inflection.

However, as shown in (3a), VP-topicalization disrupts this local relationship by placing the main verb and its dependents in a clause-initial position, while leaving the governing auxiliary in situ.[3]

(3) a. [Gem-t den særligt godt] tror jeg nu ikke de har ___.
hide-PPC it particularly well think I now not they have.PRES
'I don't think they have hidden it very well.'

b. *[{ Gemm-e / gemm-er / gem-te} den særligt godt] tror jeg nu ikke de har ___.
hide-INF hide-PRES hide-PAST it particularly well think I now not they have.PRES

(4) a. Jeg tror nu ikke de har gemt den særligt godt.
I think now not they have.PRES hide-PPC it very well
'I don't think they have hidden it very well.'

b. *Jeg tror nu ikke de har { gemm-e / gemm-er / gem-te} den særligt godt.
I think now not they have.PRES hide-INF hide-PRES hide-PAST it particularly well

Nonetheless, the inflection on the fronted main verb appears to be governed by the in situ auxiliary: in (3a) fronted *gemt* has the past participle form, just as it does in (4a) where the VP has not been fronted. In both cases that is the only inflectional option for the main verb, as the ungrammaticality of the b. examples shows.[4]

If VP topicalization is derived by movement of the VP and if such VP-movement follows the operation that fixes the inflectional form of V (affix hopping, selection, or feature valuing by Agree), the morphological form of the fronted verb in (3a) is entirely expected. Moreover, Houser, Mikkelsen, and Toosarvandani (2010:21–23) give independent evidence for movement in VP topicalization constructions: VP topicalization is sensitive to islands and shows reconstruction effects. (Crossover and parasitic gap licensing are inconclusive; Houser et al. (2010:23–24).) The purpose of this short paper is to show that the above analysis, however appealing, cannot be maintained once a broader set of observations are taken into account. These observations, I argue, show that verbal inflection is, at least in some instances, controlled at a distance.

2 VP Left Dislocation with Resumption

Alongside the VP topicalization construction (VPT) discussed above, Danish allows VP left dislocation (VPLD) with a resumptive proform *det*, as in (5). VPT and VPLD are closely related and appear to be used interchangeably.

(5) a. Gemt den særligt godt det tror jeg nu ikke de har <det>.
hide-PPC it particularly well DET think I now not they have.PRES
'I don't think they have hidden it very well.'

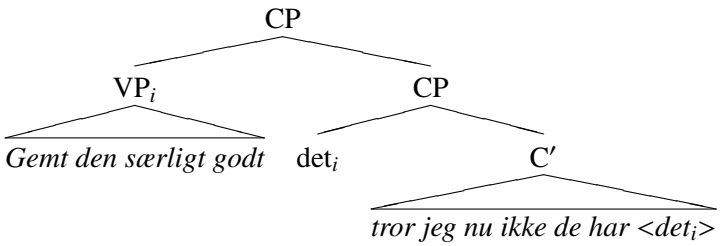
[3] In Danish main clauses, verb-second syntax places the finite verb in C^0 obscuring the underlying structure of the verbal complex further. I therefore use examples with extraction out of an embedded clause in (3). It is not clear to me that the pragmatic function of Danish VP topicalization and VP left dislocation (discussed in the next section) is identical to that of their English counterparts. I therefore translate the Danish VP fronting examples into English sentences with VP in situ.

[4] Not all languages behave this way. Some employ a particular non-finite form for fronted verbs, e.g. the infinitive in Yiddish (Källgren and Prince 1989) and Hebrew (Landau 2006). Other languages nominalize the fronted verb, as is common throughout West Africa (Sam Mchombo and Larry Hyman, p.c.).

b. Overtale banken det tror jeg nu ikke de kan <det>.
persuade.INF bank.DEF DET think I now not they can.PRES
'I don't think they can persuade the bank.'

The traditional analysis of left dislocation is that the left dislocated phrase is base-generated in initial position, externally to the clause, and coindexed with the clause-internal proform (Ross 1967:422–428, van Riemsdijk and Zwarts 1997). Thus (5) would have the structure in (6), where <det$_i$> indicates the base position of the resumptive proform.

(6)



Under this analysis the initial VP in (5) is not in a local relationship with the perfect auxiliary *har* at any point in the derivation. Nonetheless, the left dislocated verb must appear in the form governed by *har*, namely the past participle *gemt*. Similarly in (5b), the left-dislocated verb must appear in the infinitival form, which is the form governed by the in situ modal *kan* (can). Under the traditional analysis of left dislocation, the inflection on the initial verb would be governed from afar and could not be the result of affix-hopping or selection, which are strictly local operations. Feature valuing by Agree is not subject to such strict locality, but it does require c-command, and in (5a-b) there is no c-command between the governing auxiliary and the inflecting main verb: the auxiliary c-commands just the lower copy of *det* and the fronted verb c-commands just its dependents. The standard generative analysis of verbal inflection therefore cannot account for verbal inflection in (5a) and (5b) under the standard generative analysis of these structures.

Could (5a) and (5b) be reanalyzed as involving movement of the VP from the complement position of the governing auxiliary to initial position, saving the local analysis of verbal inflection? There are at least two reasons to resist this reanalysis.

First, under the traditional analysis, the proform *det* originates as a sister to the auxiliary and moves to Spec-CP of the main clause, where it immediately precedes the finite verb of the matrix clause (*tror* in (5a) and (5b)). If a *wh*-phrase occupies Spec-CP, the proform may exceptionally surface in situ as in (7).

(7) Sy korssting hvem kan **det** nu om dage?
sew cross.stitch who can DET now about days
'Who can do cross stitch these days?'

This analysis is supported by the fact that *det* functions as a VP anaphor independently of VP left dislocation and with the same positional options, as shown in (8):

(8) a. Jeg kan ikke sy korssting, men hvem kan egentlig **det** nu om dage.
I can not sew cross.stitch but who can actually DET now about days
'I can't do cross stitch but who can these days?'

b. Han vil forsøge at overtale banken, men **det** tror jeg nu ikke han kan.
he will attempt to persuade bank.DEF but DET think I now not he can
'He is going to try to persuade the bank, but I don't think he'll be able to.'

Houser et al. (2010) argue that (8a) shows the base position of *det* and that (8b) involves movement of *det* to spec-CP. If VPLD is reanalyzed as movement of VP from sister of aux to initial position, there is no

obvious source for the proform, in particular it cannot be Merged with the auxiliary, because the auxiliary Merges with the VP. If we allow *det* to externally Merge to C′, we need to make that Merger conditional on subsequent VP movement, since (9), where the VP has not moved, is ungrammatical:[5]

(9) Han vil forsøge at overtale banken, men …
he will attempt to persuade bank.DEF but
'He is going to try to persuade the bank, but …'

a. *det tror jeg nu ikke han kan overtale banken.
DET think I now not he can persuade bank.DEF

Thus the reanalysis of VPLD as involving movement of VP to initial position leaves no good analysis of the proform that accompanies left dislocation.

Secondly, the initial VP in VPLD does not "count" for verb second. In (5) and (7) we have what looks like verb-third order: VP *det/hvem* V_{finite}. These apparent violations of verb-second order are straightforwardly accounted for under the traditional analysis sketched in (6): the initial VP is adjoined to CP, leaving Spec-CP as a landing site for some clause-internal element (*det* in (5); *hvem* in (7)). The finite verb is in C^0, which is its usual position in verb-second clauses. The appearance of verb third is due to the adjunction to CP. In the proposed reanalysis, the VP would move to initial position, which is either an adjoined position or a second, outer, specifier of C. However, such movement is generally disallowed as the ungrammaticality of the sentences in (10) shows.

(10) a. *Sy korssting hvem kan nu om dage?
sew cross.stitch who can now about days

b. *Gemt den særligt godt de har nu ikke.
hidden it particularly well they have now not

The required VP movement in VPLD structures would thus be exceptional and conditioned, somehow, by the presence of the proform *det*.

Both of these issues with the reanalysis would disappear if the VP and the proform formed a constituent underlyingly (thanks to Idan Landau for suggesting this possibility): the proform would have a base-position (it would Merge first with the fully articulated VP and the resulting complex VP would Merge with the auxiliary)[6] and the complex VP constituent would move to occupy the single specifier of CP in examples like (5a) and (5b). This proposal, however, faces challenges of its own. First, there is no independent evidence that VP and *det* form a constituent. They cannot appear together in situ (11), nor as the pivot of an it-cleft (12), nor as the counterweight of a pseudo-cleft (13).[7]

(11) *Jeg tror nu ikke han kan [overtale banken det].
I think now not he can persuade bank.DEF DET

(12) *Det var [overtale banken det] han forsøgte.
it was persuade bank.DEF DET he attempted

(13) *Hvad jeg ikke tror han kan er (at) [overtale banken det].
what I not think he can is (to) persuade bank.DEF DET

[5]The string in (9a) is possible with a pause between *kan* and *overtale* in which case *overtale banken* reads as a clarification and is, presumably, right-dislocated.

[6]Or the two could form a nominal small clause as suggested by Lipták and Vicente (2009:682) for Spanish.

[7](12) has a grammatical, but irrelevant, reading in which *det han forsøgte* is a free relative (cf. English *It was persuade the bank what he attempted.*)

Secondly, in VPLD structures there is a characteristic intonational break between the initial VP and whatever follows it. Under the traditional analysis that intonational break aligns with a major syntactic boundary (between the adjoined VP and its CP host; see (6)). In an analysis where the VP and proform form a constituent, there would be no such alignment.

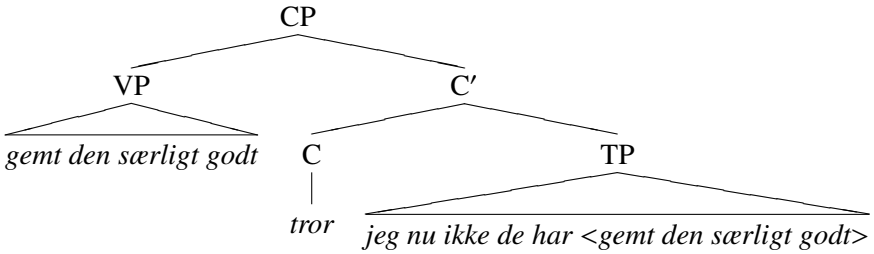
Finally, letting the VP and its proform form a constituent offers no help with (7). Here there would have to be two movements: one of *hvem* to Spec-CP and one of the VP (without its proform!) to a second, outer specifier of C or to a CP-adjoined position. That then reintroduces the exceptionalism of VPLD: why is a second movement allowed in VPLD, but nowhere else?

I conclude that there is no reasonable analysis of VPLD in which the VP starts out as a sister of an auxiliary and moves to initial position. Since inflection on the initial VP is nonetheless governed by the (lowest) auxiliary, we are led to the conclusion that Danish verbal inflection is not always locally governed, but may be governed at a distance. That in turn entails that some mechanism other than affix-hopping, selection or feature valuing by Agree can effect verbal inflection in Danish. In the next section, I suggest that this alternative mechanism is also at work in VP topicalization, and that the "inflect and then move" analysis of VP topicalization sketched in the introduction should be abandoned.

3 A Base-Generation Analysis of VP Topicalization

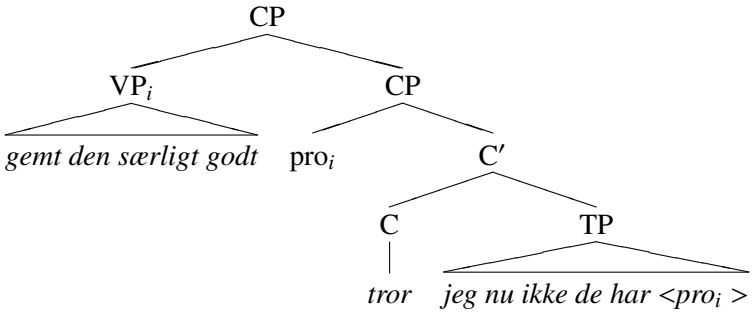
The inflect-and-then-move analysis of VP topicalization is schematized in (14). The VP originates as the sister of the perfect auxiliary *har*, and this configuration allows *har* to impose the past participle form on the main verb *gemme* (yielding *gemt*). Then the VP moves to Spec-CP of the matrix clause. The finite matrix verb *tror* occupies C^0 yielding the characteristic verb-second order.

(14) Gemt den særligt godt tror jeg nu ikke de har ___.
hide.PPC it particularly well think I now not they have.PRES
'I don't think they have hidden it very well.'



The alternative that I am advocating is illustrated in (15).

(15)



In (15) the fronted VP is base-adjoined to CP and coindexed with a null proform that originates as a sister to the (lowest) auxiliary and moves from there to Spec-CP. Both analyses yield the correct word order, but

(14) is simpler and does not involve any null elements. So why consider (15) at all? The distinctive property of the base-generation analysis in (15) is that it assimilates VP topicalization to VPLD (see the tree in (6)). In both a VP is base-adjoined to CP and coindexed with a proform. The only difference is that in VPLD the proform is overt; in VPT it is null. Below I present evidence that VPT and VPLD behave identically with respect to inflection on the fronted verb and argue that this is best captured by the structurally identical analyses in (15) and (6).

3.1 Connected and Doubling Patterns in VP Fronting

In all the examples of VP fronting given above, the fronted verb inflects as governed by the (lowest) auxiliary. I call this the CONNECTED pattern. As noted by Platzack (2008), the Scandinavian dummy auxiliary *gøre*/*gjøre*/*göra* (do) gives rise to a DOUBLING pattern, where the fronted verb has the same inflection as the auxiliary. An example from Swedish is given in (16).[8] For comparison, the Danish example in (17) shows the corresponding connected pattern: the dummy auxiliary is finite (present) and the fronted verb is in the infinitive.

(16) **Sjung-er gör** vi ofta i kyrkan.
sing-PRES do.PRES we often in church.DEF
'We often sing in church.'

(17) **Syng-e gør** vi ofte i kirken.
sing-INF do.PRES we often in church.DEF
'We often sing in church.'

If Danish VP topicalization differed from Danish VPLD in having the initial VP start out as a sister of the inflection-governing auxiliary one might expect that the two constructions would differ in which inflectional patterns they allow: In particular, that VPT is restricted to the connected pattern, whereas VPLD might allow either pattern since the connection between the fronted verb and the auxiliary is mediated by the proform *det*. Conversely, if Danish VPT and VPLD were derived in the exact same way we would expect them to allow the same inflectional options.

To the best of my knowledge, this issue has not been investigated in any detail.[9] I consulted 10 native speakers of Danish as to whether they allow the doubling and/or connected pattern in each of the two VP fronting constructions. The results were as follows:

1. All speakers allow the connected pattern in both VP topicalization and VPLD with all licensors, including *gøre*.

2. A majority of the consulted speakers (7 out of 10) do not accept the doubling pattern with *gøre* or any other auxiliary.

3. A minority (3 of 10) accept doubling pattern with *gøre* in both VP topicalization and VPLD. One of the three speakers finds doubling fully grammatical; the other two find it marginal.

What is relevant for present purposes is that inflectional possibilities in VPT and VPLD are identical for all speakers: if a speaker accepts doubling, that speaker accepts it in both VPT and VPLD. If a speaker doesn't

[8] This is Platzack's example (25b) in which I have bolded the relevant verb forms, added glossing for the verbal inflection, and provided a free translation.

[9] For VP-topicalization, Platzack claims that Swedish allows only the doubling pattern and that Danish and Norwegian allow either, but prefer the connected pattern. These claims are consistent with published works on VP-topicalization in the individual languages (Källgren and Prince (1989) on Swedish, Lødrup (1990) on Norwegian, and Wedekind and Ørsnes (2004) on Danish), but none of these works provides a comprehensive empirical investigation of doubling and connected patterns.

accept doubling in VPLD, that speaker doesn't accepts it in VPT and vice versa. This fact, I contend, supports the uniform analyses of VPT and VPLD given in (15) and (6) respectively. In both, inflection is governed at a distance. If VPT was derived differently from VPLD, as is the case under the inflect-and-then-move analysis of VPT given in (14), we have no explanation for why speakers consistently judge them alike.

3.2 Island Effects and Reconstruction

I noted in the introduction that Danish VPT exhibits island and reconstruction effects. The example in (18) shows sensitivity to the Sentential Subject Constraint and (19) shows reconstruction for Principle B. Both are verb-second clauses, so the fronted VP is followed by the finite verb of the matrix clause (*overrasker* 'surprise.PRES' in (18) and *kan* 'can' in (19)), which is itself followed by the matrix subject.

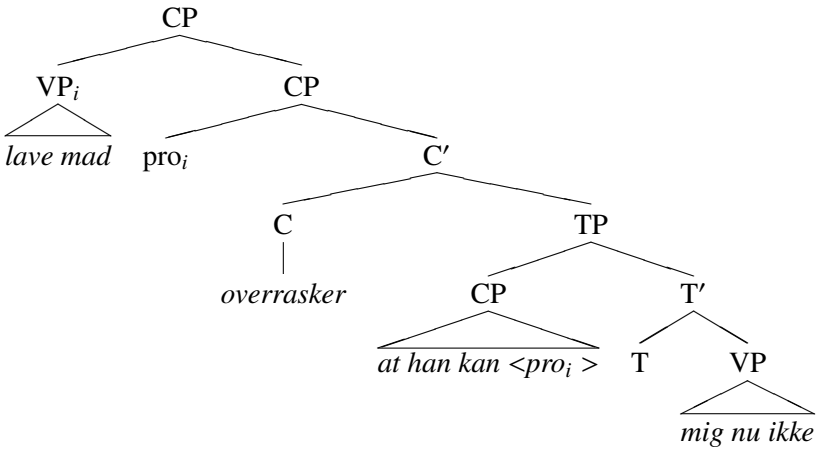
(18) *[$_{VP}$ Lave mad] overrasker [$_{CP}$ at han godt kan ___] mig ikke.
make.INF food surprises that he well can me not
Intended: 'That he can cook doesn't surprise me.'

(19) *[$_{VP}$ Forsvare ham$_i$ over for de store børn] kan Peter$_i$ godt ___, selvom han ikke er
defend.INF him over for the big kids can Peter well even.though he not be.PRES
ret stor.
quite big
'Peter$_i$ can defend him$_{*i/j}$ against the big kids, even though he is not that big.'

These effects are straightforwardly accounted for under the inflect-and-then-move analysis of VPT: in (18) the VP moves out of the sentential subject (*that he can cook*) and in (19) reconstruction of the VP brings the pronoun inside the governing category of a c-commanding coindexed NP (*Peter*), in violation of Principle B of the binding theory.

Under the base-generation analysis of VPT advocated here, the ungrammaticality of (18) stems from illicit movement of the null proform. That proform originates inside the sentential subject and moves from there to the specifier of the root CP, as schematized in (20). This movement violates the Sentential Subject Constraint.

(20)



Movement of the proform is driven by verb-second syntax which requires the specifier of CP to be occupied.

The reconstruction effects are more challenging for the base-generation analysis, since the initial VP never occurs clause-internally. Consequently, there is no base position to reconstruct to. Instead, we must

analyse the reconstruction effects as mediated by the verbal proform: the proform itself does not contain the offending pronoun, but it is coindexed with the intial VP which does.

Clearly this account of (19) is more complicated than the one offered under the inflect-then-move analysis of VP topicalization, and should count as a strike against the base-generation analysis that I am advocating. Before drawing that conclusion, however, it is relevant to look at VPLD. The VPLD examples in (21) and (22) are parallel to the VP-topicalization examples in (18) and (19) and they too are ungrammatical.[10]

(21) *[$_{VP}$ Lave mad] **det** overrasker [$_{CP}$ at han godt kan ___] mig ikke.
make.INF food DET surprises that he well can me not
Intended: 'That he can cook, that doesn't surprise me.'

(22) *[$_{VP}$ Forsvare ham$_i$ over for de store børn] **det** kan Peter$_i$ godt ___, selvom han ikke er
defend.INF him over for the big kids DET can Peter well even.though he not be.PRES
ret stor.
quite big
'Peter$_i$ can defend him$_{*i/j}$ against the big kids, even though he is not that big.'

Above I sketched accounts of (18) and (19) under the base-generation analysis of VP topicalization. Those accounts carry over to the VPLD examples in (21) and (22). In (21), the proform *det* has moved out of a sentential subject, resulting in ungrammaticality. In (22), the base position of the proform is inside the binding domain of the matrix subject and that, combined with the coindexing of the proform and the initial VP, gives rise to a principle B violation. This is analogous to how reconstruction effects under relativization are understood under an operator analysis of relative clauses: the relative operator corresponds to the proform in the VP fronting configuration and the external NP to the initial VP.

The crucial point for present purposes is that VPLD shows the exact same reconstruction effects as VPT. This is expected under the parallel derivations of VPT and VPLD that I am advocating (see structures in (15) and (6) above): whatever accounts for reconstruction effects with the overt proform in VPLD will account for reconstruction effects with the null proform in VPT. It it of course possible to maintain that reconstruction effects arise for different reasons in VPT (namely movement of the VP itself), but since we need to allow for reconstruction effects mediated by a proform to account for (22), nothing is gained by that analysis. The main advantage of the uniform analysis is that it accounts for the striking parallelism in the inflectional options available for the fronted verb in the two constructions (see summary of questionanaire result in 1–3 above). If all speakers had accepted just the connected pattern, the inflectional parallelism between VPT and VPLD could plausibly be accidental, but the fact that this parallelism holds even in the face of inter-speaker variation suggests that it is not accidental. On the analysis I propose here, the morphological parallelism is the result of syntactic parallelism.

Before concluding, I want to consider the possibility that the connected pattern of inflection observed in Danish VPT and VPLD is not actually the result of the auxiliary governing inflection on the initial V long distance, but rather the result of an independent parallelism constraint on VP anaphora. (I am grateful to both Robert Henderson and Helge Lødrup for raising this possibility.)

[10]This parallelism is completely systematic. VPLD and VT topicalization are equally sensitive to sentential subject islands, adverbial islands, wh-islands, and coordinate structures and equally insensitive to the complex NP island, which is also true for extraction of NPs in Danish (Erteschik-Shir 1973 and Jakobsen 1996). Similarly, VP topicalization and VPLD both show reconstruction effects for licensing of negative polarity items and for all three principles of the binding theory. See Houser et al. (2010:21–24) for data and discussion.

4 Reducing Connectedness to Parallelism

As shown in (23) below, the resumptive proform used in VPLD also functions as a VP anaphor ((23) repeats (8b) above).

(23) Han vil [forsøge at overtale banken]$_i$, men **det**$_i$ tror jeg nu ikke han kan.
he will attempt.INF to persuade bank.DEF but DET think I now not he can
'He is going to try to persuade the bank, but I don't think he'll be able to.'

Similarly, following Lobeck (1995) and many others, the null proform I posit for Danish VP topicalization could be the syntactic representation of Danish VP ellipsis, as illustrated in (24):

(24) Han kan [spille klaver]$_i$, men jeg kan ikke *pro*$_i$.
He can. play.INF piano but I can not
'He can play piano, but I can't.'

In these examples, the inflectional environment of the anaphoric VP, represented by *det*$_i$ and *pro*$_i$, is identical to that of the antecedent VP (in square brackets): both are infinitival environments because of the preceding modal. If there were a parallelism requirement on VP anaphora, including VP ellipsis, that the inflectional environments of anaphor and antecedent must be identical, then we could use this parallelism requirement to explain the connected pattern of inflection in VPT and VPLD. The initial VP would be the antecedent and the proform would be the anaphor. The parallelism constraint on VP anaphora would then require the antecedent (= initial VP) and anaphor (= resumptive proform) to match inflectionally, which would result in the connected pattern of inflection described in section 3.1. Under this analysis there is no remote licensing of inflection in VP fronting constructions: the apparently remote licensing is the result of local licensing and the parallelism requirement on VP anaphors and antecedents. The main problem for this analysis is an empirical one: regular VP-anaphora does not require inflectional identity. This is shown for overt VP anaphora in (25)–(27) and for VP ellipsis in (28)–(30).

(25) De [brugte jo et hvilket som helst middel for at opnå deres mål]$_i$, og det$_i$ må man ikke.
they used DP a which as rather means for to achieve their goal and DET may one not.
'They used any means necessary to achieve their goal and one is not allowed to do that.'

(26) Illustratorerne og Jyllands-Postens redaktører har, hvad enten de har villet det$_i$ eller ej,
illustrators.DEF and Jyllands-Posten.POSS editors have what either they have wanted DET or not,
[på egen krop vist solidaritet med de folk, som vil leve med tanke- og religionsfrihed]$_i$, ...
on own body shown solidarity with the people who will live with tought and religion.freedom
'The illustrators and the editors at Jyllandsposten have, whether they wanted to or not, shown solidarity with the people who want freedom of thought and religion.'

(27) De eskorterende soldater var rutinemæssigt [faldet i søvn]$_i$ - det$_i$ gør de jo.
the escorting soldiers were rutinely fallen in sleep DET do they DP
'The escorting soldiers had fallen asleep, as they typically do.'

In (25), the antecedent verb is in the past tense, but the anaphor is governed by a modal and hence in an infinitival environment. In (26) the antecedent VP is governed by perfect *have* and the main verb *vise* (show) therefore has the past participle form *vist*. The anaphor, on the other hand, follows the modal *villet* which governs the infinitive. Finally, in (27), the antecedent verb is in the past participle form (governed by perfect *være*) and the anaphor is governed by the dummy auxiliary, which requires infinitive in VP topicalization and VPLD constructions.

Similarly, in (28) the ellipsis site follows a modal, while the antecedent verb is finite. In (29) the ellipsis site is also in an infinitival environment, this time governed by the dummy auxiliary *gøre*, and the antecedent is finite. Finally, in (30), the antecedent is a present tense synthetic passive and the ellipsis site is governed by the passive auxiliary *blive*, which requires a past participle form.

(28) Spillerne kunne være et afgangshold fra teaterskolen, der følger et løst skitseret
players.DEF could be a graduating.class from theater.school.DEF that follow a loosely sketched
forløb og [bytter roller og skifter karakter]$_i$, når de kan *pro*$_i$.
course and swap roles and change character when they can
'The actors could be a graduating class from a theater school that follow a loosely sketched plan and swap roles and change characters when(ever) they can.'

(29) Nu fisker jeg ikke efter en partner. Men hvis jeg havde gjort *pro*$_i$, havde jeg ...
now fish.PRES I not after a partner but if I had done had I
'Now I happen to not be looking for a partner, but if I were, I would ...'

(30) I sig selv var det et udogmatisk skulderklap til frihedsrettigheder, som vantrives i de
in REFL self be.PAST it a undogmatic shoulder.pat to freedom.rights which non.thrive in the
muslimske samfund i Europa - og som i Mellemøsten [boycottes]$_i$ i langt højere grad,
muslim societies in Europe and which in middle.east.DEF boycott.PASS in long higher degree
end Arla nogensinde blev *pro*$_i$
than Arla ever became
'In and of itself it was a non-dogmatic acknowledgement of the right to freedom, which is not thriving in the Muslim communities in Europe and which is being boycott in the Middle East to a much greater degree than Arla ever was.'

These data clearly show that Danish VP anaphora does not require inflectional parallelism between antecedent and anaphor site, and, consequently, we cannot reduce the connected inflectional pattern observed in VPT and VPLD to locally governed inflection by that route.

As pointed out by Helge Lødrup, this difference between anaphora and ellipsis on the one hand and fronting, on the other, is also found with number agreement on adjectival predicates:

(31) Morsomm-e, det er de.
funny-PL DET be.PRES they
'They are funny.'

(32) *Morsomm-e, det er han.
funny-PL DET be.PRES he
Intended: 'He is funny.'

(33) Per og Ole er morsomm-e. Det er Poul også.
Per and Ole be.PRES funny-PL DET be.PRES Paul also
'Per and Ole are funny. Poul is too.'

If an adjectival predicate is fronted, it must agree in number with the subject, as shown by (31) and (32). VP anaphora, on the other hand, tolerates number mismatches, as seen in (33), where the anaphor has a singular subject while the antecedent is plural.

Thus we can say more generally, that fronting shows connected inflection, whereas the inflectional environment of anaphors and ellipsis sites need not match that of the antecedent.

5 Conclusion

We have seen that Danish verbal inflection is sometimes determined at a distance. This is most clearly the case in VPLD, for which there is no plausible analysis in which the main verb originates next to the auxiliary governing its inflection. Based on the striking similarites between VPLD and VPT, I have argued that the two have isomorphic syntactic derivations (the initial VP is base-adjoined to CP and coindexed with a clause-internal proform), and hence that verbal inflection in VPT is also not locally determined. Is there any way to escape this conclusion? One possibility is that inflection is mediated by the proform, which does originate in a local relationship with the governing auxiliary (they are Merged). Through its co-indexing with the initial VP, the proform conveys the relevant inflectional information, giving rise to the connected pattern that dominates in Danish VPT and VPLD. Under this approach, the proform would mediate both reconstruction effects and inflection. Mechanisms for mediating reconstruction effects have been worked out in other work, e.g. the LF-copying analysis of sluicing due to Chung, Ladusaw, and McCloskey (1995), but I do not know of any proposed mechanism that would let the proform mediate inflection in the required way. The inflectional patterns described in this paper thus remain a challenge to current theories of verbal inflection and its syntactic basis.

References

Adger, David. 2003. *Core Syntax*. Oxford: Oxford University Press.

Bjerre, Anne, and Tavs Bjerre. 2007. Perfect and periphrastic passive constructions in Danish. *Nordic Journal of Linguistics* 30:5–53.

Chomsky, Noam. 1957. *Syntactic Structures*. The Hauge: Mouton.

Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3:239–282.

Emonds, Joseph E. 2000. *Lexicon and Grammar: The English Syntacticon*. Berlin: Mouton de Gruyter.

Erteschik-Shir, Nomi. 1973. On the nature of island constraints. Doctoral Dissertation, MIT. Distributed by Indiana University Linguistics Club, 1977.

Gazdar, Gerald, Ewan Klein, Geoffery K. Pullum, and Ivan A. Sag. 1985. *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.

Houser, Michael, Line Mikkelsen, and Maziar Toosarvandani. 2010. A defective auxiliary in Danish. To appear in *Journal of Germanic Linguistics*.

Jakobsen, Lisbeth Falster. 1996. Sentence intertwining in Danish, seen from a Functional Grammar perspective. In *Complex Structures: A Functionalist Perspective*, ed. Betty Devriendt, Louis Goossens, and Johan van der Auwera, 61–92. Berlin: Mouton de Gruyter.

Källgren, Gunnell, and Ellen Prince. 1989. Swedish VP-topicalization and Yiddish verb-topicalization. *Nordic Journal of Linguistics* 12:47–58.

Landau, Idan. 2006. Chain resolution in Hebrew V(P)-fronting. *Syntax* 9:22–66.

Lipták, Anikó, and Luis Vicente. 2009. Pronominal doubling under predicate topicalization. *Lingua* 119:650–686.

Lobeck, Anne. 1995. *Ellipsis: Functional Heads, Licensing, and Identification*. Oxford: Oxford University Press.

Lødrup, Helge. 1990. VP-topicalization and the verb *gjøre* in Norwegian. *Working Papers in Scandinavian Syntax* 2–12.

Platzack, Christer. 2008. Cross-linguistic variation in the realm of support verbs. Ms. Lunds Universitet.

van Riemsdijk, Henk, and Frans Zwarts. 1997. Left Dislocation in Dutch and the status of copying rules. In *Materials on Left Dislocation*, ed. Elena Anagnostopoulou, Henk van Riemsdijk, and Frans Zwarts,

13–29. Amsterdam: John Benjamins.
Ross, John Robert. 1967. Constraints on variables in syntax. Doctoral Dissertation, MIT. [Reproduced by the Indiana University Linguistics Club, 1968].
Vikner, Sten, and Rex A. Sprouse. 1988. *Have*/*Be*-selection as an a-chain membership requirement. *Working Papers in Scandinavian Syntax* 38:1–48.
Wedekind, Jürgen, and Bjarne Ørsnes. 2004. An LFG account of the Danish verbal complex and its topicalization. *Acta Linguistica Hafniensia* 36:35–64.