

Resumption and Cyclic Chain Reduction in Danish VP Left Dislocation

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Contrastive Left Dislocation (CLD), schematized in (1), is a crosslinguistically pervasive phenomenon that involves a clause-external element (the left-dislocated XP) cooccurring with an associate (pro) in a thematic or selected position within the clause. CLD presents a fundamental puzzle to syntactic theory. On the one hand, the left-dislocated element is resumed by a proform, suggesting a base-generated binding dependency rather than one created by movement. On the other hand, in some languages CLD exhibits connectivity effects and island sensitivity, two characteristic traits of movement.

(1) [XP_i [CP ... pro_i ...]]

A number of solutions to this puzzle have been developed: abandoning island sensitivity as a diagnostic of movement (Cinque 1990), reanalyzing the dependency in terms of predication with possible independent movement of the left-dislocated element (Iatridou 1995), exceptional chain formation (Frey 2004), treating the left-dislocated element and its proform associate as an underlying constituent (Grewendoff 2008), and clausal ellipsis (Ott 2014), among others. All of these approaches require special assumptions about the structure and derivation of CLD and account for the observed movement traits of CLD without directly relating XP and pro in (1) by movement.

Capitalizing on recent advances in the understanding of movement and how movement derived structures are interpreted at PF, we offer an alternative analysis in which CLD is transparently derived from an unexceptional syntactic structure by movement of XP from the position realized by pro. On our proposal, the key property of CLD and the one that yields resumption is that the movement of the left-dislocated element is to an adjoined position (adjunct to CP), not a specifier. Given this much and building on previous work (Landau 2006, Fujii 2007, van Urk 2017, a.o.), we show how obligatory resumption in CLD follows from general principles of cyclic Chain Reduction.

As a case study, we use VP left dislocation (VPLD) in Danish, illustrated in (2), and compare it to VP topicalization (VPT) in (3). Mikkelsen (2011) establishes that in both constructions the dependency is derived by movement: neither can cross island boundaries, both exhibit reconstruction effects for Binding Principles A, B, and C, and in both the inflection of the verb in the fronted VP is governed by the auxiliary which hosts the proform, an otherwise very local process.

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| <p>(2) a. [<i>Sy korssting</i>]_i <i>hvem kan det</i>_i?
 sew cross.stitch who can DET
 ‘Who can do cross stitch?’</p> | <p>b. [<i>Sy korssting</i>]_i <i>det</i>_i <i>kan jeg</i>.
 sew cross.stitch DET can I
 ‘I can do cross stitch’</p> |
| <p>(3) a. * [<i>Sy korssting</i>]_i <i>hvem kan</i> ___i?
 sew cross.stitch who can
 Intended: ‘Who can do cross stitch?’</p> | <p>b. [<i>Sy korssting</i>]_i <i>kan jeg</i> ___i.
 sew cross.stitch can I
 ‘I can do cross stitch.’</p> |

However, VPLD differs from VPT in two ways: (i) VPLD requires resumption while VPT requires a gap; (ii) the left-peripheral VP is an adjunct to CP in VPLD while it occupies Spec,CP in VPT. Evidence for the adjunct status of the left-dislocated VP in VPLD comes from the fact that it does not “count” for V2 and occurs outside the phrase that occupies Spec,CP (*hvem* ‘who’ in (2a) and *det* in (2b)). In contrast, VPT exhibits strict V2, as in (3), consistent with the VP occupying Spec,CP.

We, thus, propose to relate (i) and (ii) and derive the required resumption of a left-dislocated VP as well as all other properties of VPLD from the assumption that VPLD involves VP movement to a position adjoined to CP, as in (4), where VP₁ and VP₂ are occurrences of the same VP. In particular, we take the contrast between VPLD and VPT with respect to resumption to suggest that the lower occurrence of a moved VP cannot be deleted in full at PF if the movement of the VP escapes a phase (CP) without stopping off in its specifier (Spec,CP).

- (4) a. [CP VP₂ [CP *wh* C ... VP₁]] (VPLD; (2a))
 b. [CP VP₂ C ... VP₁] (VPT; (3b))

To account for resumption in VPLD (and its absence in VPT), we follow Landau (2006) and van Urk (2017) in assuming that (partial) pronunciation of a lower occurrence results from an interaction between two competing pressures. On the one hand, **Economy of Pronunciation** drives deletion of (as much as possible of) a low occurrence of a moved expression since it is c-commanded by a higher occurrence of that expression. On the other hand, **Phonological Recoverability** can bleed deletion by requiring the position of the low occurrence to be associated with at least some phonological content. The specific phonological recoverability condition that forces a low occurrence to be pronounced at least partially is given in (5). For the purposes of (5), adjuncts to a CP are not included in that CP because they are not dominated by every segment of the CP (May 1985, Chomsky 1986).

- (5) Position P, occupied by an element X, must be associated with phonological content if there is no higher occurrence of X included the minimal phase containing P.

Given this much, **the derivation of VPT** ((4b) and (3b)) proceeds as follows. First, the VP moves to Spec,CP creating the two occurrences VP₁ and VP₂. Next, when Chain Reduction applies, VP₁ is phonologically recoverable according to (5), since there is a higher occurrence of the VP included in the CP, and VP₁ is deleted by Economy of Pronunciation. VP₂, on the other hand, is not phonologically recoverable and, as a result, cannot be deleted. In the **the derivation of VPLD** ((4a) and (2a)), the VP also moves but this time it is adjoined to CP and is, therefore, not included in the CP. Because of this, while Economy of Pronunciation dictates that VP₁ should be deleted, VP₁ is not phonologically recoverable according to (5) and thus cannot be deleted in full. The availability of a radically underspecified Vocabulary Item like *det* in Danish allows this conflict between Economy of Pronunciation and Phonological Recoverability to be resolved by pronouncing “as little as possible” of VP₁ (in fact, just the information that it is a maximal projection).

This approach extends to examples like (2b), in which *det* appears in Spec,CP. Here, the parallel movements of the VP to Spec,CP (for the purposes of V2) and to an adjoined position to CP (for VPLD) create the configuration in (4c). VP₁ is phonologically recoverable according to (5), since VP₂ is included in the CP, and is deleted. VP₂, however, is not phonologically recoverable, since the next higher occurrence of VP is not included in the CP. As a result, VP₂ is spelled out as *det*.

- (4) c. [CP VP₃ [CP VP₂ C ... VP₁]] (VPLD; (2b))

Furthermore, combined with the restrictions on adjunction to embedded clauses uncovered in McCloskey 2006, this treatment of VPLD correctly predicts that embedded VPLD is only possible under so-called “bridge” verbs that require CP recursion in their clausal complements.

While we have illustrated our the analysis with respect to VPLD in Danish, the mechanisms involved are fully general and predict that if a language allows direct movement of any category out of a CP (e.g. to a CP-adjoined position), the tail of the resulting movement chain may be realized by a resumptive proform. This analysis also opens the door to an analytic unification of resumption under CLD and obligatory resumption in relativization, which Sichel (2014) argues is also derived by movement and under pressure from phonological recoverability.

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