The left periphery in Dinka: Intermediate movement is regular movement

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- One problem in a derivational view of syntax is how intermediate steps of a successive-cyclic long-distance dependency are established.

(1) What did you say [<what> that I should get <what>]?  
   ①  ②

In other words, how is step ① triggered?

- Several proposals have been made that intermediate movement is a special operation, not triggered like regular movement, either because it is not feature-driven or because it happens at a different point in the derivation (e.g. Heck and Müller 2000, 2003; Chomsky 2000; Georgi 2013).

- This talk brings facts from Dinka to bear on this issue, a language in which the left periphery interacts morphosyntactically with A-movement in a number of ways.

- I show that, in these interactions, intermediate movement behaves just like regular movement. In particular, both consistently feed φ-agreement in Dinka:

(2) Ye kitɛɛp-kó e-ké-yí Ayëñ ké luéel, [e-ké-kuéen diáar Q books-which PST-PL-IMPF.NS Ayen.NOM PL say PST-PL-read.NS women ké?]
   PL ‘Which books was Ayen saying that the women were reading?’

- To capture this, I propose that what terminal and intermediate movement have in common is both are feature-driven (Chomsky 1995; McCloskey 2002; Abels 2012; cf. Gazdar 1981).

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*My thanks to Elena Anagnostopoulou, Sabine Iatridou, Shigeru Miyagawa, David Pesetsky, and Norvin Richards for comments and discussion, as well as to audiences at University of Maryland and MIT. I am indebted to Abiar Makoor Guot and Mangok Bol for sharing their language with me. Abbreviations include: 1, 2, 3 = 1st, 2nd, and 3rd person, DCL = declarative, IMPF = imperfective, LOC = locative case, NOM = nominative, NS = non-subject extraction, PL = plural, P = preposition, PREP = prepositional suffix, PRF = perfect, PST = past, Q = interrogative particle, SG = singular.*
1 V2 in Dinka

Dinka is a Nilotic language, spoken in South Sudan. This talk is based on data from Dinka Nyarweng and Dinka Bor, both dialects in the southeastern dialect group.

1.1 Matrix and embedded V2

• One of the salient features of Dinka is that it is V2 in all finite clauses (Andersen 1991, 2002; Van Urk and Richards, to appear). This is true in all matrix clauses, for example (3a–c):

(3) **Matrix clauses are V2**

*Subject first:*

a. Ayén a-cé cuíń cám ne pàl.
Ayen DCL.SG-PRF food eat P knife
‘Ayen ate food with a knife.’

*Direct object first:*

b. Cuíń a-cíi Áyën cám ne pàl.
food DCL.SG-PRF.NS Ayen.NOM eat P knife
‘The food, Ayen ate with a knife.’

*Instrumental first:*

c. Pàl a-cii Áyën cuíń cám.
knife DCL.SG-PRF.NS Ayen.NOM food eat
‘With a knife, Ayen ate food.’

• Finite embedded complement CPs are V2 also:¹

(4) **Embedded clauses are V2**

*Subject first:*

a. A-yúkkü luéel, [Ayén a-cé cuíń cám ne pàl].
DCL.SG-IMPF.1PL say Ayen DCL.SG-PRF food eat P knife
‘We’re saying that Ayen ate food with a knife.’

*Direct object first:*

b. A-yúkkü luéel, [cuíń a-cíi Áyën cám ne pàl].
DCL.SG-IMPF.1PL say food DCL.SG-PRF.NS Ayen.NOM eat P knife
‘We’re saying that, the food, Ayen ate with a knife.’

*Instrumental first:*

c. A-yúkkü luéel, [pàl a-cíi Áyën cuíń cám].
DCL.SG-IMPF.1PL say knife DCL.SG-PRF.NS Ayen.NOM food eat
‘We’re saying that, with a knife, Ayen ate food.’

• I will take V2 to be CP-level in Dinka. See Van Urk and Richards (to appear) and Van Urk (in prep.) for extensive discussion.

¹As evident in the examples in (4a–c), an apparent exception to V2 may arise in the matrix clause when a CP object is present. This is because, as extensively discussed in Van Urk and Richards (to appear), finite CPs may move to the initial position, but always have to be linearized on the right.
1.2 Agreement and A-movement

**Generalization about Dinka φ-agreement:**
φ-agreement always targets the XP in Spec-CP.

- Unlike in familiar C-level V2 languages, **movement to Spec-CP is accompanied by φ-agreement**. The XP in Spec-CP triggers agreement on a prefix which attaches to the highest verb/auxiliary, which I will refer to as the *tense-force prefix*.

- This is true of simple topicalization (5a–c) (associated with a variety of information-structural functions, as in Germanic V2 languages; Frascarelli and Hinterhölzl 2007):

  (5) _Agreement with XP in Spec-CP:_
  a. Yín cé müř tįį. 
     you PRF giraffe see
     ‘You saw a giraffe.’
  b. Müř a-cää tįį. 
     giraffe DCL.SG-PRF.1SG see
     ‘A giraffe, I saw.’
  c. Müřr aa-cää ke tįį. 
     giraffes DCL.PL-PRF.1SG PL see
     ‘Giraffes, I saw.’

  The declarative paradigm for this φ-agreement pattern is given below:

<table>
<thead>
<tr>
<th>PRES</th>
<th>SG</th>
<th>PL</th>
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<tr>
<td>1st/2nd</td>
<td>0-</td>
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<td>3rd</td>
<td>a- aa-</td>
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<tr>
<td>3rd</td>
<td>e- aa-ke-</td>
<td></td>
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</tbody>
</table>

- The same facts obtain under wh-movement. Agreement goes with the wh-phrase:

  (6) _Agreement with wh-phrase in Spec-CP:_
  a. Yeyíñà e-ke-cūi Áyen ke gám kitàp? 
     who.PL PST-PL-PRF.NS Ayen.NOM PL give book
     ‘Which people had Ayen given a book to?’
  b. Yeyíñà e-ke-nhiàr yòn-dén? 
     who.PL PST-PL-love house.LNK-SG.3PL
     ‘Who all loved their house?’
  c. Yeyíñà e-ke-yíi ke tàak, e-ke-cūi Áyen ke gám kitàp? 
     ‘Which people were you thinking that Ayen had given a book to?’

---

2 As is clear from these tables, there is some morphological irregularity in this paradigm conditioned by tense. This is evidence that the tense-force prefix hosts true agreement and not a doubled clitic (see Nevins 2011).
2 Prioritizing \( \bar{A} \)-movement for \( \varphi \)-agreement

2.1 Multitasking

How can we force \( \varphi \)-agreement to target the \( \bar{A} \)-moving XP?

1. I adopt a probe-goal approach to \( \varphi \)-agreement, in which the probe must c-command the goal (Chomsky 2001), and I propose that, in Dinka, \( C \) carries unvalued \( \varphi \)-features, in addition to features driving \( \bar{A} \)-movement.

2. I posit the economy condition in (7), called Multitasking, which will end up prioritizing agreement with \( \bar{A} \)-moving XPs:

(7) Multitasking:
If two Agree operations A and B are possible, and the features checked by A are a superset of those checked by B, the grammar prefers A.

(Richards 2012; Van Urk and Richards, to appear)

What does Multitasking do?

- Consider a derivation for \( wh \)-extraction of an object:

(8)

\[
\begin{array}{c}
\text{CP} \\
\text{C} \\
[wh:] \\
[\varphi:] \\
\text{TP} \\
\text{Subj} \\
[\varphi:val] \\
\text{T} \\
[\varphi:val] \\
\text{vP} \\
\text{Obj} \\
[wh:val] \\
\ldots
\end{array}
\]

- \( C \) carries two probing features (\( wh \) and \( \varphi \)). Two Agree relations are possible when \( C \) is merged:
  
  ① Agree for \( \varphi \) between \( C \) and the subject
  
  ② Agree for \( wh \) and \( \varphi \) between \( C \) and the object

- Multitasking dictates that ② must happen, because it satisfies a superset of the features that ① does. This is because the object also carries \( \varphi \)-features, so that this Agree relation can satisfy both features of \( C \).
• Note that, in this view, Relativized Minimality (Rizzi 1990) only determines the choice of targets. Multitasking then dictates which goal is selected and what features are involved.

See also: Starke (2001) and Haegeman (2012) on intervention and a variety of effects with the same profile (and Pesetsky and Torrego 2001, Kotek, to appear).

2.2 Argument for Multitasking: V3 structures

• As discussed in detail in Van Urk (in prep.), PPs can be topicalized in two ways: by moving them as DPs (9b), in which case they trigger \(\phi\)-agreement, or by moving them as PPs (9c), in which case they don’t.

(9) Two ways of moving PPs:
   a. \(\text{W`o}k\ \text{c`e} \ \text{cu`i}n\ \text{c`am} \ne\ \text{p`a}l.\)
      we PRF food eat P knife
      ‘We ate food with a knife.’
   b. \(\text{P`a}l\ \text{a-c`ii} \ \text{wo}k\ \text{cu`in}\ \text{c`am}.\)
      knife DCL.SG-PRF.NS we food eat
      ‘With a knife, we ate food.’
   c. \(\text{Ne} \text{p`a}l, \ \text{wo}k\ \text{c`e} \ \text{cu`in}\ \text{c`am}.\)
      P knife we PRF food eat
      ‘With a knife, we ate food.’

• Crucially, when moved as a full PP, a V3 structure must result (10a). However, V2 is obligatory otherwise (10b).

(10) a. \(*\text{Ne} \text{p`a}l, \ \text{c`ii} \ \text{wo}k\ \text{cu`in}\ \text{c`am}.\)
      P knife PRF.NS we food eat
      ‘With a knife, we ate food.’
   b. \(*\text{P`a}l \ \text{wo}k\ \text{c`e} \ \text{cu`in}\ \text{c`am}.\)
      knife we PRF food eat
      ‘With a knife, we ate food.’

Upshot: Nothing in principle prevents C from having multiple specifiers. Both \(\phi\)-agreement and \(\bar{A}\)-features are capable of driving movement to the left periphery. A principle like Multitasking is necessary to force both features to be checked against one phrase when possible.

3 Intermediate movement in Dinka

Main message: In how it interacts with \(\phi\)-agreement and V2, intermediate movement looks just like terminal movement.
3.1 ϕ-agreement and intermediate movement through Spec-CP

- As Van Urk and Richards (to appear) show, Dinka provides clear evidence that Spec-CP serves as the landing site for intermediate successive cyclic movement.

- Every Spec-CP position on the path of a long-distance dependency must be occupied by the displaced phrase.

- Although this is ungrammatical in embedded clause without extraction, no overt XP may sit in the Spec-CP of an intermediate clause (11a–d):

(11) Intermediate movement proceeds through Spec-CP:

a. Yeŋə yúkku luéel, [__ e-cé cuín cám]? who IMPF.1PL say PST-PRF food eat ‘Who did we say ate food?’
b. *Yeŋə yúkku luéel, [cuín e-cíi cám]? who IMPF.1PL say food PST-PRF.NS eat ‘Who did we say ate food?’
c. Yeŋú yúkku luéel, [__ e-cúkku cám]? what IMPF.1PL say PST-PRF.1PL eat ‘What did we say we ate?’
d. *Yeŋú yúkku luéel, [w`o e-cé cám]? what IMPF.1PL say we PST-PRF eat ‘What did we say we ate?’

- In addition, XPs undergoing intermediate movement must trigger ϕ-agreement on the tense-force prefix associated with every Spec-CP position they move through (12a–b):

(12) Intermediate movement triggers ϕ-agreement:

a. Ye kit`ep-kó e-ké-yí Ayén ké luéel, [__ Q books-which.PL PST-PL-IMPF.NS Ayen.NOM PL say e-ké-kuéen di`aar ké]? PST-PL-read.NS women.NOM PL ‘Which books was Ayen saying that the women were reading?’
b. Ye kitam-ó e-yí Ayén luéel, [__ e-kuéen Q book-which.SG PST-IMPF.NS Ayen.NOM say PST-read.NS di`aar]? women.NOM ‘Which book was Ayen saying that the women were reading?’

- Not only do these facts provide evidence for the notion of successive-cyclic movement (Chomsky 1977 et seq.), they show us that intermediate movement behaves in just the same way as terminal movement.
3.2 PP topicalization through Spec-CP

- In addition, intermediate movement through Spec-CP shows the same interaction with PP topicalization.

- As previously mentioned, PP can topicalize in two ways: 1) as PPs, creating a V3 structure (13a), or 2) as DPs, with V2 (13b).

(13) Two ways of moving PPs:
  a. *Pål a-cíí wọok cuín cám.
     knife DCL.SG-PRF.NS we food eat
     ‘With a knife, we ate food.’
  b. Ne pål wọok cé cuín cám.
     P knife we PRF food eat
     ‘With a knife, we ate food.’

- The same facts obtain in intermediate clauses under long-distance topicalization. PP topicalization requires an overt phrase in Spec-CP of the lower clause (14a–b):

(14) a. Ne pål, a-yúkkù luéél, [Adít a-cám cuín].
     P knife DCL.SG-IMPF.1PL say Adit DCL.SG-eat food
     ‘With a knife, we’re saying that Adit is eating food.’
  b. *Ne pål, a-yúkkù luéél, [ cêm-e Adít cuín].
     P knife DCL.SG-IMPF.1PL say eat.NS-PREP Adít.NOM food
     ‘With a knife, we’re saying that Adit is eating food.’

On the assumption that this movement still proceeds successive-cyclically, such intermediate clauses involve a V3 structure similar to the one in (13c):

(15) Structure of (14a):
    [CP PP . . . [CP t DP C . . .]]

- In contrast, topicalization as a DP must empty the lower Spec-CP (16a–b):

(16) a. *Pål a-yúkkù luéél, [Adít a-cám cuín].
     knife DCL.SG-IMPF.1PL say Adit DCL.SG-eat food
     ‘With a knife, we’re saying that Adit is eating food.’
  b. Pål a-yúkkù luéél, [ cêm-e Adít cuín].
     knife DCL.SG-IMPF.1PL say eat.NS-PREP Adít.NOM food
     ‘With a knife, we’re saying that Adit is eating food.’

3.3 Intermediate movement through Spec-vP

- We can also observe these facts at the vP edge.

- Dinka has a Spec-vP position before the verb cluster, which must be occupied by one object:
(17)  *Position before verb cluster must be occupied:*

a.  *yën cē mi`ir tīŋ.*
    | I  PRF giraffe see
    | ‘I saw a giraffe.’

b.  *yën cē tīŋ mi`ir.*  
    | I  PRF see giraffe
    | ‘I saw a giraffe.’

- That one object must always proceed the verb cluster is also evident in ditransitives. One object surfaces before the verb and one follows it (18a–b).

(18)  *One object is preverbal and one postverbal:*

a.  *yën cē Ayén yi`en kit`āp.*  
    | I  PRF Ayen give book
    | ‘I gave Ayen a book.’

b.  *yën cē kit`āp yi`en Ayén.*  
    | I  PRF book give Ayen
    | ‘I gave a book to Ayen.’

- Strikingly, when one of these objects is extracted, it must come from Spec-vP:

(19)  *Object extraction must come from Spec-vP:*

a.  *Ye`nà cī m`oc _____ yi`en kit`āp?*  
    | who  PRF.NS man.NOM give book
    | ‘Who did the man give the book to?’

b.  *Ye`nà cī m`oc kit`āp yi`en?*  
    | who  PRF.NS man.NOM book give
    | ‘Who did the man give book to?’

c.  *Ye`nú cī m`oc _____ yi`en Ayén?*  
    | what  PRF.NS man.NOM  give Ayen
    | ‘What did the man give Ayen?’

d.  *Ye`nú cī m`oc Ayén yi`en?*  
    | what  PRF.NS man.NOM Ayen give
    | ‘What did the man give Ayen?’

- We see the same pattern with causatives. The causative verb cók embeds a TP and introduces its own object position. This position can be occupied by the subject or object from the embedded TP (20a–b).

(20)  *Causative introduces separate Spec-vP:*

a.  *D`ēŋ a-cē B`ol cók [TP lōm adúok].*  
    | Deng 3SG-PRF Bol make grab plate
    | ‘Deng made Bol grab a plate.’

b.  *D`ēŋ a-cē adúok cók [TP lōm B`ol].*  
    | Deng 3SG-PRF plate make  grab Bol.NOM
    | ‘Deng made Bol grab a plate.’
• If we extract from within the complement of a causative, the wh-phrase must move through this Spec-vP (21a–b).

(21) *Long-distance extraction must move through causative Spec-vP:

a. Yeŋú cíi Dĕŋ cők [TP lōm Bôl]?
   what PRF.NS Deng make grab Bol.NOM
   ‘What did Deng make Bol grab?’

b. *Yeŋú cíi Bôl δ cők [TP lōm]?
   what PRF.NS Bol Deng make grab
   ‘What did Deng make Bol grab?’

• Terminal movement to Spec-vP then looks just like intermediate movement to Spec-vP.

• In addition, Spec-vP shows the same restrictions with regard to both movement types. As Van Urk and Richards (to appear) point out, PPs can never surface in Spec-vP:

(22) *Adjuncts cannot occupy Spec-vP:

a. yëñ cë nín yóọt.
   I sleep house.LOC
   ‘I slept in the house.’

b. *yëñ cë yóọt nín.
   I house.LOC sleep
   ‘I slept in the house.’

• In accordance with this, intermediate movement of a PP also does not move through the Spec-vP position:

(23) *PPs do not empty Spec-vP:

Yétenè cënnè Bôl Dĕŋ tóọc?
where PRF.PREP Bol.NOM Deng send
‘Where did Bol send Deng?’

To sum up: Intermediate movement, to Spec-vP or Spec-CP, behaves just like terminal movement.

An immediate consequence: Some theories suggest that intermediate movement necessarily happens late, after all other operations in a phase (e.g. Chomsky 2000). Dinka shows us this cannot be right, since this gives C or v no way of knowing that the phrase undergoing long-distance movement needs to be prioritized for φ-agreement.
4 A feature-driven approach to intermediate movement

How do we capture the similarity between intermediate movement and terminal movement?

• I propose that intermediate movement, like terminal movement, is feature-driven, as in Chomsky (1995), McCloskey (2002), Abels (2012). (And feature percolation approaches, e.g. Gazdar (1981).)

• To be precise, I posit that all phase heads carry versions of the feature driving terminal movement, but that such probes are allowed to fail (Preminger 2011; Abels 2012), so that they can be present even in the absence of a long-distance dependency.

• Result: We have the same situation as before at an intermediate C:

\[(24)\]

\[
\begin{array}{c}
\text{CP} \\
\hline \\
\text{C} \\
\quad \left[ \text{wh:} \right] \\
\quad \left[ \varphi: \right] \\
\text{Subj} \\
\quad \left[ \varphi: \text{val} \right] \\
\text{T} \\
\quad \text{TP} \\
\quad \left[ \varphi: \text{val} \right] \\
\text{vP} \\
\quad \text{Obj} \\
\quad \left[ \text{wh: val} \right] \\
\quad \ldots \\
\end{array}
\]

• And, because of Multitasking, we must choose 2 as the next step in the derivation.

4.1 Morphological evidence for feature checking

• That C carries Ā-features triggering intermediate movement is evidenced morphologically. In addition to the declarative paradigm, the tense-force prefix has an interrogative one:

<table>
<thead>
<tr>
<th>DECLARATIVE:</th>
<th>INTERROGATIVE:</th>
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<tbody>
<tr>
<td><strong>PRES</strong></td>
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<td><strong>PL</strong></td>
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</tbody>
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**10**
• Crucially, $\varphi$-agreement on an intermediate C draws from the **interrogative** paradigm, and not the declarative one (cf. McCloskey 2002 on Irish):

(25)  *Intermediate movement triggers interrogative paradigm:*

```
Ye kitɛ́r̥p-kó  e-ké-yíi  Áyɛ́n  ké luɛ́l, [ ___ e-ké-kuéen
Q books-which.PL PST-PL-IMPF.NS Ayen.NOM PL say PST-PL-read.NS
dîaarr  ké]? women.NOM PL
```

‘Which books was Ayen saying that the women were reading?’

• The lower tense-force prefix is *e-ke*, and not *aa-ke*, as it would be in a declarative.

• This provides support for the feature-driven view of intermediate movement suggested here.

**Conclusion**

• In this talk, I showed that, in Dinka, **intermediate movement looks just like terminal movement**, in how it interacts with $\varphi$-agreement and V2.

• I offered an analysis in which the thing they have in common is that **both terminal and intermediate movement are feature-driven** (Chomsky 1995; McCloskey 2002; Preminger 2011; Abels 2012; cf. Gazdar 1981).

• Assuming this, the Dinka facts derive from *Multitasking* (Richards 2012; Van Urk and Richards, to appear), an economy principle that favors Agree with XPs that are further away as long as they satisfy a *superset* of the features present on closer goals (see also Starke 2001; Haegeman 2012).
References


Richards, Norvin. 2012. *Uttering theory*. Manuscript, MIT.


van Urk, Coppe. In prep. *Agreement and the left periphery in Dinka*. Doctoral dissertation, MIT.

6 arguments for successive cyclic movement through intermediate CP edges. Phases. More movement. Notes: PS5 up soon, due November 8. Reading for next week on IVLE. 1 Japanese wh-questions. Japanese is a wh-in-situ language: wh-phrases do not need to move in wh-questions, unlike in English or German. Some data here from Huang and Ochi (2004); Richards (2008). Dinka is a Nilotic language of South Sudan (Van Urk and Richards, 2015). It is V2: a constituent is in initial position, followed by the auxiliary, with the main verb lower down. There’s a lot to say about wh-movement in Dinka, but today we will focus on the immediately preverbal position. (23) Dinka immediately preverbal position must be filled: a. ɣɛnÌ€ cÃ AyÁñ n yiê-l in kitÃ l p. Speaker: Coppe van Urk.

Intermediate movement is regular movement: Evidence from Dinka

Date/Time: Tuesday, Feb 18, 12-1p (Note special time)
Location: 32-D461.

One problem in a derivational view of syntax is how intermediate steps of a successive-cyclic movement are triggered. This talk brings facts from Dinka (Nilotic; South Sudan) to bear on this issue, a language in which the left periphery interacts morphosyntactically with A â€” movement in a number of ways. I show that, in these interactions, intermediate movement behaves just like regular movement. In particular, both consistently feed phi-agreement. Below we show that the movement is indeed direct in the sense that it does not target the specifier of a CP prior to adjunction to that CP. We then show that this is true even when multiple Spec,CP positions intervene between the base position of the left dislocated VP and its final, adjoined position. 5.1 VPLD within a single clause. The movement of the left dislocated VP to a CP-adjoined position can be direct, since movement of the VP can cross a Spec,CP occupied by another element. In examples like the following, the left dislocated VP moves across Spec,CP, which is occupied by the wh-phrase h Dinka people. Quite the same Wikipedia. Just better. It is estimated a 100,000 people left the area following the attack.[13] Jieng People also killed in 1991 tribal massacre were people of Khorfulus and Ngok Lual Yak where about 500 people were killed, over 7000 herds of cattle taken, and thousand of houses burnt. The area however remained under the control of SPLA under the command of late General George Athor Deng who later defeated Riek Machar's forces in Panyagar when he reinforced Wuor Mabior of Duk. Intermediate Lands: lie slightly below the highlands, commonly subject to flooding from heavy rainfall in the Ethiopian and East/Central African highlands; Vegetation is mostly open perennial grassland with some acacia woodland and other sparsely distributed trees. Intermediate movement in Dinka is also associated with a multiple copy spell-out effect. Movement of a plural DP in Dinka triggers the appearance of the 3rd person plural pronoun kÃ©(ek) at the edge of each vP on the path of movement. This happens with all instances of long-distance movement, including topicalization, as in (12a), relativization, as in (12b), or the wh-cleft in (12c).Intermediate movement in Dinka is also associated with a multiple copy spell-out effect. Movement of a plural DP in Dinka triggers the appearance of the 3rd person plural pronoun kÃ©(ek) at the edge of each vP on the path of movement. This happens with all instances of long-distance movement, including topicalization, as in (12a), relativization, as in (12b), or the wh-cleft in (12c). Footnote 8 As evident in (12aâ€”c), kÃ©-copying is found with all types of DP, whether pronouns or lexical DPs. (12) I will argue that it reflects the realization of an intermediate copy left by successive-cyclic movement in Spec-vP, and is driven by the V2 property of v. In other words, for an example like (15), kÃ©-copying involves the configuration in (16). (16).