

## Phase impenetrability and resumption in Dinka

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**1. Summary.** Much work on resumption argues that it is a last resort strategy (e.g. Shlonsky 1992; Pesetsky 1998; Salzmann 2009; Sichel 2014). One issue in this type of approach is that many languages permit resumptives in non-island contexts (e.g. objects and embedded subjects). This paper first presents novel evidence from the Nilotic language Dinka (South Sudan) for the existence of *mixed chains* of movement and resumption (McCloskey 2002), revealing that both C and *v* may initiate resumption. Such chains are then shown to display positional restrictions sensitive to *phase impenetrability*: a resumptive pronoun may only appear if separated by (at least) one phase boundary from the antecedent. I argue that this restriction, and the exception that arises with *vP*, follows from a last resort account if Dinka resumptives occur in phases that lack a featural trigger for movement. If all movement is feature-driven (Chomsky 1995), phase impenetrability creates an island in which resumption is a last resort.

**2. Two reflexes of successive cyclicity in Dinka.** Van Urk and Richards (2015) show that long-distance movement in Dinka displays two reflexes of successive cyclicity. First, the moving phrase must satisfy the V2 property of each intervening CP and *vP*. This is evident in (1a): clauses introduced by *kè* must be followed by V2, satisfied by the bolded intermediate copy. Second, plural phrases trigger *ké-copying*, the appearance of a plural marker *ké* at each *vP* edge (1b) (see [omitted] for detailed analysis).

- (1) a. Àyén à-cíí Bôl yôok [CP *kè* <Àyén> nhiéer kôoc-kè <Àyén>].  
 Ayen 3S-PRF.OV Bol.GEN find.NF C love.OV people-these  
 ‘Ayen, Bol has found out that these people love.’  
 b. Yè kôoc-kò yíí Bôl [<sub>vP</sub> **ké** luéel è cíí Áyèn [<sub>vP</sub> **ké** tíi]]?  
 be people-DEM HAB.OV Bol.GEN 3PL say.NF C PF.OV Ayen.GEN 3PL see.NF  
 ‘Which people does Bol say Ayen has seen?’

(V2 at the clause edge is assumed to involve a lower head in the C domain, see [omitted] for discussion.)

**3. Resumption in Dinka is not movement.** Dinka also employs resumption in all  $\bar{A}$ -constructions. Resumption differs from movement in two ways. First, it is island-insensitive (2).

- (2) Yè kôoc-kò; cíí Bôl ké [DP ráan [CP *cé* (\**ké*) cuíin câam kènè **kêek<sub>i</sub>**]] tíi?  
 be people-which PRF.OV Bol.GEN 3PL person PRF 3PL food eat.NF with 3PL see.NF  
 ‘(lit.) Which people has Bol seen someone who has eaten food with them?’

Second, reflexes of successive cyclicity become *optional* in resumptive contexts. *Ké-copying* is no longer obligatory (3a). Similarly, a different phrase may occupy intervening V2 positions (3b).

- (3) a. Wôok<sub>i</sub> cíí Bôl [<sub>vP</sub> (**ké**) cuíin câam kènè **wôok<sub>i</sub>**].  
 1PL PRF.OV Bol.GEN 3PL food eat.NF with 1PL  
 ‘Us, Bol has eaten food with us.’  
 b. Yè kôoc-kó; yùukù ké tàak [CP *kè* **Àyén** *cé* (\**ké*) cuíin câam kènè **kêek<sub>i</sub>**]?  
 be people-which HAB.1P 3PL think C **Ayen** PRF 3PL food eat.NF with 3PL  
 ‘Which people do we think Ayen has eaten food with?’

**4. Mixed chains in Dinka.** The fact that reflexes of successive cyclicity are optional rather than absent provides evidence that long-distance dependencies in Dinka may be *mixed chains*, employing a resumptive relation plus movement of the antecedent, as McCloskey (2002) also documents in Irish. Supporting evidence for this comes from the observation that reflexes of successive cyclicity are ungrammatical inside islands: In (2), we see that *ké-copying* is impossible *inside* the island, but fine *outside* of it. Similarly, once reflexes of successive cyclicity are evident at an edge, they become obligatory at higher edges. For instance, for *ké-copying* to be possible in an embedded clause with a resumptive pronoun in it, the antecedent must also satisfy V2 at the edge of that clause (compare (3b) with (4)).

- (4) Yè kôoc-kó; yùukù ké tàak [CP *kè* **t<sub>i</sub>** cíí Áyèn (**ké**) càam kènè **kêek<sub>i</sub>**]?  
 be people-which HAB.1P 3PL think.NF C PRF.OV Ayen.GEN 3PL eat.NF with 3PL  
 ‘Which people do we think Ayen has eaten with?’

Following McCloskey, I propose that Dinka C and *v* can both initiate movement or resumption, so that an antecedent DP may be first merged in *any Spec-CP or Spec-vP position* on the path of a long-distance dependency. This is further support for the idea that CP and *vP* are parallel domains (Chomsky 2001).

**5. Restrictions on resumption.** Resumption in Dinka displays several restrictions that are absent in movement. As in many languages, resumption obeys the Highest Subject Restriction (5a–b): Only subjects of embedded clauses can be resumptive pronouns. In addition, such embedded subjects must be clitics on the verb in a V1 clause (5b) and cannot appear in the clause-initial phase edge position.

- (5) a. \*Yè kôɔc-kò<sub>i</sub>      cùikè<sub>i</sub>      Bòl t̃iŋ?  
       be people-which PRF.3P Bol see.NF  
       ‘Which people has Bol seen?’  
 b. Yè kôɔc-kò<sub>i</sub>      yíí      Bòl      ké luêeel [CP è lèetkè<sub>i</sub>      Àyén]?  
       be people-which HAB.OV Bol.GEN 3PL say.NF      C insult.3PL Ayen  
       ‘Which people does Bol say is insulting Ayen?’

As in Irish, what is banned is a local relationship between resumptive subject and antecedent. If the resumptive antecedent is first merged in the embedded Spec-CP, resumption is again out:

- (6) \*Yè kôɔc-kò<sub>i</sub>      yùukù      ké tàak      [CP kè <kôɔc-kò<sub>i</sub>> càmke<sub>i</sub>      cuíin]?  
       be people-which HAB.1P 3PL think.NF      C      eat.3PL food  
       ‘Which people do we think have eaten food?’

(The difference between (5) and (6) arises because only the complementizer è may be followed by V1.)

**6. Restrictions in the vP.** In the vP, resumptives in a PP or DP are always permitted (7a–b):

- (7)a. Yè nà<sub>i</sub>      céemè      Bòl      cuíin-dè<sub>i</sub>?      b. Yè nò<sub>i</sub>      céemè      Bòl      cuíin nè yèen<sub>i</sub>?  
       be who eat.OBLV Bol.GEN food-SG.3SG      be what eat.OBLV Bol.GEN food P 3SG  
       ‘Whose food is Bol eating?’      ‘What is Bol eating with?’

Embedded objects can also be resumptive pronouns (8a), but local objects are restricted (8b–c):

- (8)a. Wêek<sub>i</sub> yíí      Bòl      ké luêeel [CP è cè      wêek<sub>i</sub> t̃iŋ].  
       2PL HAB.OV Bol.GEN 3PL say.NF      C PRF.3SG 2PL see.NF  
       ‘You all, Bol has said that he has seen.’  
 b. \*Yè nò<sub>i</sub>      cíí      róoor [vP yèen<sub>i</sub> t̃iŋ]?      c. \*Yè nà<sub>i</sub>      cíí      Bòl [vP yèen<sub>i</sub> yíËgn cà]?  
       be what PRF.OV men.GEN 3SG see.NF      be who PRF.OV Bol.GEN 3SG give.NF milk  
       ‘What have the men seen?’      ‘Who has Bol given milk to?’

Specifically, local object resumptives are sensitive to phase boundaries. They are never permitted in the phase edge position (8b–c), but *are* permitted as indirect objects if more deeply embedded (9a–b):

- (9)a. Yè nà      cíí      Bòl [vP cà yíËgn yèen]?      b. \*Yè nò      cíí      Bòl [vP Àyén yíËgn yèen]?  
       be who PRF.OV Bol.GN milk give.NF 3SG      be what PRF.OV Bol.GN Ayen give.NF 3SG  
       ‘Who has Bol given milk to?’      ‘What has Bol given Ayen?’

The descriptive generalization that emerges is that a resumptive antecedent may be merged only if it is separated from the resumptive pronoun at least by one CP, PP, or DP boundary. Importantly, a vP boundary is insufficient, as in (9b), in which an object resumptive is banned even though embedded in the vP. (For (9a), we can posit silent PP structure that introduces the low indirect object, as in Bruening 2001.) This asymmetry is surprising if CP, vP, PP, and DP all constitute locality domains (i.e. phases).

**7. Why phase boundaries?** A key clue for the source of the CP–vP asymmetry is that embedded subject and object resumptives are permitted only in CPs with V1 order (see 5b and 8a). vPs display V1 only in intransitives, in which object resumptives are not found. I propose that, in relevant contexts, C (and not v) may lack a *featural trigger* to initiate movement, resulting in V1. If the same is true of P and D, we can understand the restrictions on resumption in Dinka as follows: *A resumptive pronoun is licit only in positions from which movement to the phase edge is impossible*. That is, resumptives only appear embedded in CPs, PPs, and DPs that lack a trigger for movement. *Phase impenetrability* creates an island for movement, if the resumptive is not on the phase edge. Resumption is then available as a *last resort* strategy (for possible implementations: Pesetsky 1998, Salzmann 2009, Sichel 2014 a.o.).

**8. Crosslinguistic extensions.** In this approach, the Highest Subject Restriction arises because a featural trigger is obligatory on the highest C, where required for interpretation. If the vP lacks a trigger, other positions will permit resumption (as in Irish and Palestinian Arabic). If intermediate CPs act as a boundary, the Dinka pattern is found. If neither CP or vP do, only non-subjects and non-objects permit resumption (Welsh). The only other patterns in Klein’s (2013, 2016) typology of resumption involve unexpected subject resumptives, which I attribute to independent prohibitions on subject extraction.