

Phase impenetrability and mixed chains 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 satisfies the V2 property of intervening CPs and *vPs*. This is evident in (1a): clauses introduced by *kɛ̀* must be followed by V2, satisfied by the bolded copy. Second, plural phrases trigger *ké-copying*, the appearance of a plural marker *ké* at each *vP* edge (1b).

- (1) a. Àyén à-cíi Ból yòok [CP *kɛ̀* <Àyén> nhiéɛr kôoc-kɛ̀ <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 yíi Ból [_{vP} **ké** luêeel è cíi Áyèn [_{vP} **ké** t̩iŋ]]?
 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 C head, 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; cíi Ból ké [ráan cé (*ké) cuŋin câam kɛ̀nɛ̀ kɛ̀ek_i] t̩iŋ?
 be people-which PRF Bol.GN 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 XP may occupy intervening V2 positions (3b).

- (3) a. Wôok_i cíi Ból [_{vP} (**ké**) cuŋin câam kɛ̀nɛ̀ wôok_i].
 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 *kɛ̀* Àyén cé (*ké) cuŋin câam kɛ̀nɛ̀ kɛ̀ek_i]?
 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 *kɛ̀* t̩i cíi Áyèn (**ké**) càam kɛ̀nɛ̀ kɛ̀ek_i]?
 be people-which HAB.1P 3PL think.NF C PRF 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 initiate movement or resumption, so that an antecedent DP may be first merged in *any Spec-CP or Spec-vP position*.

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 (5): Only subjects of embedded clauses can be resumptive pronouns.

- (5) Yè kôɔc-kò_i yíí Ból ké luêeel [CP è lèɛtkè_i 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_i yùukù ké tàak [CP kè <kôɔc-kò_i> càmke_i cuïin]?
 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) is because 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 ñà_i céemè Ból cuïin-dè_i? b. Yè ñó_i céemè Ból cuïin nè yèen_i?
 be who eat.OBLV Bol.GN food-SG.3SG be what eat.OBV Bol.GN food P 3SG
 ‘Whose food is Bol eating?’ ‘What is Bol eating with?’

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

- (8)a. Wêek_i yíí Ból ké luêeel [CP è cè wêek_i tîin].
 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 ñó_i cíí róoor [vP yèen_i tîin]? c. *Yè ñà_i cíí Ból [vP yèen_i yiêɛn cà]?
 be what PRF men.GN 3SG see.NF be who PRF Bol.GN 3SG give.NF milk
 ‘What have the men seen?’ ‘Who has Bol given milk to?’

Local object resumptives are sensitive to phase boundaries. They are not permitted in the phase edge position (8b–c), but *are* permitted as indirect objects if more deeply embedded (9a–b):

- (9)a. Yè ñà cùukù [vP cà yiêɛn yèen]? b. *Yè ñó cùukù [vP Àyén yiêɛn yèen]?
 be who PRF.1PL milk give.NF 3SG be what PRF.1PL Ayen give.NF 3SG
 ‘Who have we given milk to?’ ‘What have we given Ayen?’

The generalization that emerges is that a resumptive antecedent may be merged only if 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), I 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 phases.

7. Why phase boundaries? To explain the CP-vP asymmetry, I propose that C (and not *v*) may lack a **featural trigger** to initiate movement, resulting in V1. If the same is true of P and D, 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 view. This approach explains the Highest Subject Restriction because a featural trigger is obligatory on the highest C. If vP lacks a trigger, other positions permit resumption (e.g. Irish, 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). Other patterns in Klein’s (2013, 2016) typology of resumption have unexpected subject resumptives, which I attribute to issues with subject extraction.