

On the architecture of long-distance extraction: Evidence from Dinka

Summary: Recent work by Rackowski and Richards (2005) on Tagalog and Den Dikken (2009, 2012) on Hungarian shows that agreement between *v* and CP is necessary to establish long-distance extraction. These authors develop proposals in which this agreement allows *v* to probe into the CP phase, thereby doing away with the need to postulate intermediate movement to Spec-CP.

In this paper, we present novel data from the Nyarweng dialect of Dinka (Nilo-Saharan, South Sudan) bearing on this issue. Dinka is remarkable in being sensitive to long-distance extraction in a variety of ways. We demonstrate that Dinka provides strong support for the idea that long-distance dependencies make use of movement through intermediate Spec-CPs, contra Rackowski and Richards (2005) and Den Dikken (2009, 2012). Intriguingly, Dinka at the same time offers evidence that CPs that are extracted from must stand in an Agree relation with *v*, just as these authors propose. As such, we argue for a modification of Rackowski and Richards (2005), in which both intermediate movement to Spec-CP and Agree between *v* and the embedded CP are necessary steps in establishing a long-distance dependency.

Dinka EPP positions: Dinka has two positions that have the EPP property, in that they must be occupied (for expository convenience, these are boxed throughout). The first of these is Spec-CP, as Dinka is V2 in both main and embedded clauses:

- (1) a. Bòl a-cí yòt yík Dèŋ bàai.
 Bòl 3SG-PRF house build Deng village
 'Bòl built a house for Deng in the village'
 b. Bàai a-cí Bòl yòt yík Dèŋ.
 village 3SG-PRF Bòl.GEN house build Deng

The second such position is in the verbal domain, just before the main verb if an auxiliary is present, which we take to be Spec-*v*P. This position must be filled by a VP-internal DP argument, if possible:

- (2) a. yèn cí Ayén yién kitàp.
 I PRF Ayen give book
 'I gave Ayen a book.'
 b. yèn cí kitàp yién Ayén.
 I PRF book give Ayen
 c. *yèn cí _____ yién Ayén kitàp.
 I PRF _____ give Ayen book

Effects of successive-cyclicity: These positions are sensitive to successive-cyclic \bar{A} -movement in two ways:
 - **Empty edge positions:** There is a systematic exception to the generalization that Spec-*v*P and Spec-CP must be occupied. If extraction takes place across them, both positions must instead be empty (3a–b). We take this as evidence that these are *edge positions*, which extraction uses as intermediate landing sites, behavior we attribute to the effects of phase impenetrability:

- (3) a. Yàar a-cí Dèŋ lèk, [yè Ból a-cí Ayén tuòc wút].
 Yaar 3SG-PRF Deng tell C Bòl 3SG-PRF Ayen send cattle.camp.LOC
 'Yaar told Deng [that Bòl sent Ayen to the cattle camp].'
 b. Yeŋà cí Yàar _____ lèk Dèŋ, [yè _____ cí Bòl _____ tuòc wút]?
 who PRF Yaar.GEN _____ tell Deng C _____ PRF Bòl.GEN _____ send cattle.camp.LOC
 'Who did Yaar tell Deng [that Bòl sent to the cattle camp]?'
 - **Plural clitic stranding:** The second way in which extraction affects these positions is by way of the plural clitic *ke*, which plural DPs leave in each Spec-*v*P along the path of movement:

- (4) Yèyîŋà ye *(ké) tàak [_____ cí Bòl *(ké) tîŋ]?
 who.PL AUX.2SG PL think _____ PRF.3SG Bòl.GEN PL see
 'Who all do you think Bòl saw?'

Adjunct extraction: The behavior of adjunct extraction is more complicated. As (5) shows, extracted adjuncts fail to empty the Spec-*v*P along its path, but do leave a plural *ke*:

- (5) Ye bèŋi kò cí nyankái *(ké) wanmàth tuòc thín?
 Q villages which PRF sister PL brother send there
 'Which villages did my sister send my brother to?'

As binding data shows that such adjuncts are generated in a position c-commanded by objects of the verb, we propose that adjuncts move through Spec-*v*P, leaving a plural clitic, but do not empty this position.

Rather, we invoke the condition on the vP EPP position described in (2) above: this position must be occupied by a DP. We posit two movement-driving features on v , one associated with $u\phi$ and the other with successive-cyclic movement. When a DP is wh -extracted, both features are satisfied by the DP, and the vP edge position is left empty, as in (3); when a non-DP is wh -extracted, the two features must be satisfied by different specifiers, and wh -movement fails to empty the vP edge position, as in (5).

A puzzle in long-distance extraction: We have seen that adjunct extraction cannot empty the Spec- vP of its clause (5). Long-distance extraction of adjuncts, however, does empty Spec- vP in higher clauses:

- (6) Yétenô cí Yâar lɛ́k Dèŋ, [yè cí Bòl Ayén tuðoc]?
 where PRF Yaar.GEN tell Deng C PRF Bol.GEN Ayen send
 'Where did Yaar tell Deng [that Bol sent Ayen]?'

The role of complement clauses: We will suggest that this difference arises because of the role the embedded CP plays in long-distance extraction. We will first show that CPs in Dinka are also able to fill edge positions. The verb *lɛ́k* 'tell' can take two objects, which are like the objects in (2); one must fill Spec- vP :

- (7) a. Bòl a-cí Dèŋ lɛ́k akókòl.
 Bol 3SG-PRF Deng tell story
 'Bol told Deng a story.'
 b. Ból a-cí akókòl lɛ́k Dèŋ.
 Bol 3SG-PRF story tell Deng
 c. *Bòl a-cí lɛ́k Dèŋ akókòl.
 Bol 3SG-PRF told Deng story

When the same verb takes a clausal complement, however, the vP and CP edges may be left empty:

- (8) a. Bòl a-cí Dèŋ lɛ́k [Ayén a-cí kitàp yòoc].
 Bol 3SG-PRF Deng tell Ayen 3SG-PRF book buy
 'Bol told Deng [that Ayen bought a book].'
 b. Bòl a-cí lɛ́k Dèŋ [Ayén a-cí kitàp yòoc].
 Bol 3SG-PRF tell Deng Ayen 3SG-PRF book buy
 c. a-cí Bòl lɛ́k Dèŋ [Ayén a-cí kitàp yòoc].
 3SG-PRF Bol.GEN tell Deng Ayen 3SG-PRF book buy
 d. * a-cí Bòl Dèŋ lɛ́k [Ayén a-cí kitàp yòoc].
 3SG-PRF Bol.GEN Deng tell Ayen 3SG-PRF book buy

We take the well-formedness of (8b–c) as evidence that the edge positions are occupied by the complement CP itself, which then extraposes to final position. The ill-formedness of (8d) demonstrates that Spec-CP is occupied via successive-cyclic movement from inside vP ; if Spec-CP is to be emptied by the clause, the clause must extract via the edge of vP , emptying that position as well. These facts about clausal complementation suggest an explanation for the empty vP position in the matrix clause of (6); this position is occupied, not by the extracted phrase (which, as (5) shows, does not empty Spec- vP), but by the complement clause itself. The complement CP apparently must move to Spec- vP if extraction from it is to take place.

Locality and phasehood: Dinka then also exhibits the restriction that Rackowski and Richards (2005) and Den Dikken (2009, 2012) propose: extraction from CP requires v to Agree with CP (in Dinka, this Agree relation triggers movement of CP to Spec- vP). We depart from these works (which predict, incorrectly for Dinka, that extraction takes place only via Spec- vP , and not via Spec-CP), however, in how we derive this requirement. We propose that Agree between v and CPs that are extracted from is necessary because such CPs act as interveners for wh -probing (as these CPs themselves carry a wh -feature, to attract the wh -phrase, Preminger 2011). This proposal is to be understood together with the principle, defended in Rackowski and Richards (2005), that once a Probe has Agreed with a Goal α , it is free to ignore α in further probing. This means that Agree between v and CP allows v to ignore CP as an intervener, letting v target the wh -phrase.

In addition to this, we assume, following much work, that wh -extraction must take place via the edges of CP and vP , in order to escape phase impenetrability (e.g. Chomsky 2001). The Dinka facts provide new support for this conclusion, and also for the additional condition on extraction posited by Rackowski and Richards (2005); to escape a phase, not only must a wh -phrase move to the phase's edge, but the phase must itself be Agreed with by the higher Probe which is responsible for moving the wh -phrase.

Selected references: Dikken, Marcel den. 2012. On the strategies for forming long A' -dependencies: Evidence from Hungarian. CUNY, Ms. - Rackowski, Andrea, and Norvin Richards. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36: 565–599.