Ordering operations on an all-powerful C

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1. Overview

- This study argues against the **simultaneity** of operations that are associated with phase heads, as assumed in a version of phase theory represented by Chomsky 2007, 2008 and Richards 2007.
- Shows that different orders of *Transfer* and *Edge Feature probing* don't converge to the same result, and one order calls for a further specification of the property of Transfer. A solution to this problem brings empirical benefit.

2. Premises & Consequences

- **Transfer** sends syntactic material to the interfaces ("periodic 'forgetting'") at the phase level; the edge and nonedge (complement) of a phase are transferred separately (Richards 2007:566, 568 ex. 2; Chomsky 2004); transferred material is inaccessible to further computation (to be further specified by this study).

⇒ PIC = theorem, not axiom (PIC$_1$: Chomsky 2000:108; Richards 2011:75)

- APH: phase heads introduce all uF & EF, drive all operations (Chomsky 2007, 2008; Richards 2007, 2011)
- uFs enter unvalued (Chomsky 2001:5)
- Full Interpretation (FI): uFs must be deleted before Sem, valued for Phon (Richards 2007:566; Chomsky 2008, and refs. therein)

⇒ (uF valuation & deletion) ⊂ Transfer (Richards 2007:566, ex. 1; Epstein & Seely 2002:71–72)

⇒ uF-inheritance: C's uFs must descend to T when TP is transferred; any operations associated with uFs (e.g. subject agree and raising) happen during Transfer (Richards 2007; Chomsky 2008:149)

3. The problem of "parallel operations"

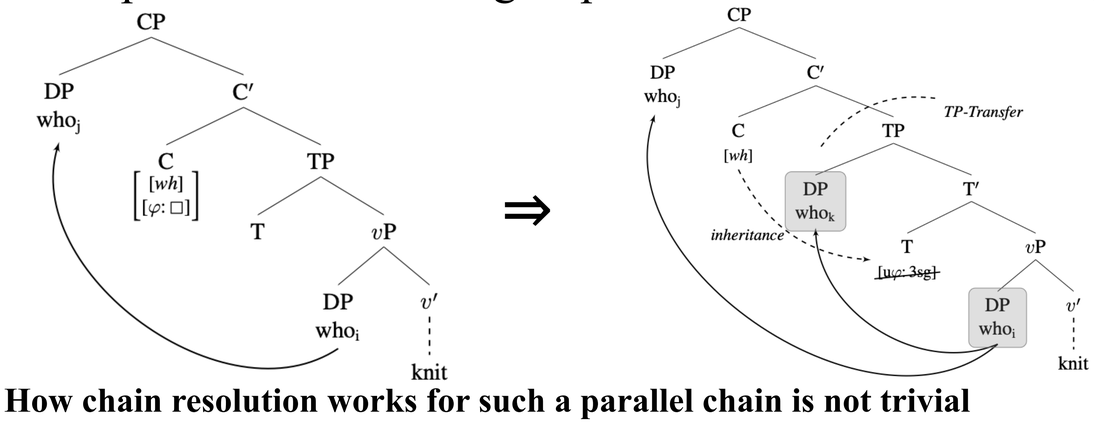
- The APH framework asserts phase-level simultaneity: operations at the phase level are "in effect simultaneous" (Chomsky 2004:123); C's EF and Agree features apply "in parallel" (Chomsky 2008:149, ex. 11); "operations are unordered with respect to each other" (Richards 2011:89, fn. 9)

- Argument: "simultaneous" is well-defined only if every order of application converges on the same result
  - If different results -> why this one but not the other?

- This study: focuses on the ordering issue between EF probing (for wh-movement, relativization etc.) and Transfer.
  - A parallel treatment by Chomsky (2008) only conforms to one possible ordering: EF probing < Transfer
  - The other possible ordering: Transfer < EF probing creates different results and reveals theoretical issues, the solution of which brings empirical benefits.
  - Such ordering might be a language specific decision

4. EF probing < Transfer

- Chomsky's (2008) parallel treatment conforms to only this order, with "parallel chain" being a special case where EA is targeted.



- **How chain resolution works for such a parallel chain is not trivial**
  ⇒ It requires much more information than "which is the leftmost node in a chain"
  ⇒ some languages might choose to avoid this order.

5. Transfer < EF probing

- If Transfer applies before EF probing: The definition of Transfer is underspecified for ordered operations at the same phase level.
  (Q) Is the transferred materials also inaccessible to subsequent operations on the same phase head?
- Why bother? "Simultaneity assumed, this problem goes away"
  ⇒ **My take**: to assume simultaneity, the results of different orders must be proved equivalent.
  ⇒ **A definite result must be calculated for each order.**

- **If yes to Q**: EF can't probe in this case. The other order is universal
- **Thought experiment:** what does it take for this order to work?
  ⇒ **Transfer** must not freeze everything for subsequent operations at the same phase level.

Stipulation (S)
Once a phase complement is transferred, only its edge (Head & Spec) remains accessible to only further operations at the same phase level.

⇒ maximize the "forgetting" aspect of Transfer, while making A'-extraction possible

Consequence of S for CP
Given such order, anything A'-moving to Spec,CP must first evacuate to Spec,TP, to remain accessible to EFs on C after TP is transferred.

⇒ Derives some empirical facts previously explained with the

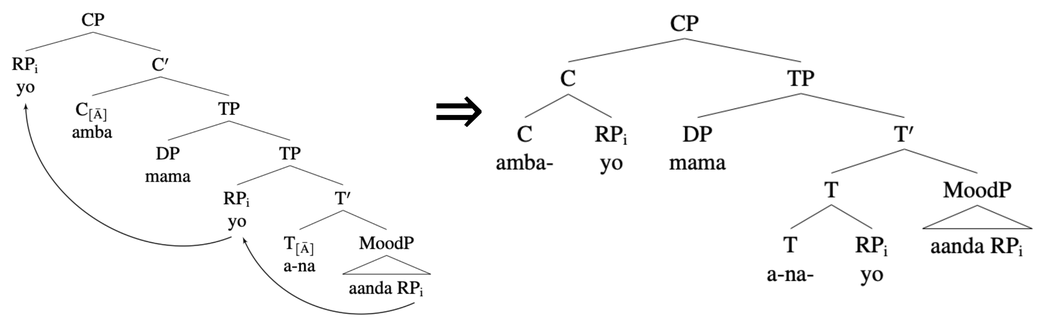
Lower Phase Conjecture (LPC: Deal 2016)
The TP complement under a relativizing CP is a phase

- LPC is **stipulated** exactly to account for an apparent cyclic stop at Spec, TP during relativization in Nez Perce, later applied to Swahili relativization by Liu (2024).

(1) *Nez Perce (Deal 2016)*
samx kex **ko-nya** *pro*$_{subj}$ 'a-sayqi-ca
shirt.NOM C RP-ACC PRO-1SG AGR-like-TAM
'The shirt that I like.'

(2) *Swahili (novel data)*
ni-na-kata chakula amba-**yo** mama a-na-**yo**-aanda
1SG-IMPF-want food C-9.RP mom 1.SM-IMPF-9.RP-prepare
'I want food that mom prepared!'

- For Swahili, the RP is a pronominal clitic that undergoes Spec-head m-merger (Matushansky 2006).



- In both cases, the copy on Spec,TP becomes visible under *some language specific morpho-phonological conditions*.
- Some "complementizer agreement" phenomena (potentially falsifying uF-inheritance), could be reanalyzed also as cyclic stop of RP at Spec,TP, followed by m-merger.

(3) *Dinka Bor (van Urk 2015)*
Yè kɔ̂ɔc-kò ɛ́-kè-cíì Áyèn ké gâam gàlàm?
be.3SG people.CS-which PST-3P-PRF.OV Ayen.GEN 3PL give.NF pen
'Which people had Ayen given a pen to?'

6. Possible reduction of S

- The "Forgetting effect" of Transfer = deletion from workspace?
- The Labeling Algorithm must classify {C, TP} as {H, XP} when it applies to CP → C's sister must persist as a set when it happens (Chomsky 2013:43; Chomsky et al. 2023)
- If it is well-motivated that the labeling of {C, TP} must be the LAST operation associated with a CP phase, then the Transfer of TP must return a minimal set-like object as C's sister: effectively {C, {Spec,TP, T' }}, rendering only the edge of TP visible to EF-probing from C ⇒ **S becomes a requirement**
- It is not trivial to reconsider LA w.r.t. my main ordering thesis here – left for future work

Selected references: Chomsky, N. (2000). MI; (2001) DbP; (2004) BEA; (2007) AUGB; (2008) OP; (2013) PoP; Chomsky, N., et al. (2023). Merge and … thesis.; Deal, A. R. (2016). Cyclicity and connectivity in …Linguistic Inquiry; Epstein, S. D. & Seely, T. D. (2002). Rule applications as cycles… In Derivation and explanation in the minimalist program; Liu, Z. (2024). Cyclic movement and chain resolution in Swahili relative clauses. Proc. LSA; Matushansky, O. (2006). Head movement in linguistic theory. Linguistic Inquiry; Richards, M. D. (2007). On feature inheritance… Linguistic Inquiry; Richards, M. D. (2011). Deriving the edge… Syntax; van Urk, C. (2015). A uniform syntax for phrasal movement… MIT dissertation.