

Revisiting Parallel Chains: a long road to repetition

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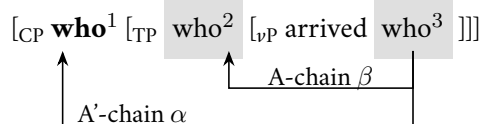
1 Introduction

- Movement in **Narrow Syntax** creates copies (Chomsky 2000, *i.a.*)
 - E.g., Successive cyclic movement, each step with different launching and landing sites
- Resolution in the **PF** (Nunes 1999, 2004) (shade = silent copies)

- (1) [CP₁ **who**¹ do [TP₁ you [_vP₁ **who**² think [CP₂ **who**³ that [TP₂ Mary [_vP₂ **who**⁴ saw **who**⁵]]]]]]
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- a. V,Comp → Spec_vP₂: CH(who⁴, who⁵) c. SpecCP₂ → Spec_vP₁: CH(who², who³)
- b. Spec_vP₂ → SpecCP₂: CH(who³, who⁴) d. Spec_vP₁ → SpecCP₁: CH(**who**¹, who²)

- **Parallel movement** and **parallel chains**: two movement steps with the **same launching site**
- Origin: Chomsky (2008)'s analysis of local *wh*-movement of subjects
 - Chain Uniformity: eliminate non-uniform A'-A-A chains in successive-cyclic movement.
 - Feature-inheritance: all [*uF*] reside on phase heads, and [*uφ*] is “donated” from phase head C → T
 - cf.* Anti-locality: avoid “too-local” movement from SpecCP to SpecTP
 - (e.g., Erlewine 2016, 2020; Bošković 2016; Newman 2020; Branan 2022; Chen and Yip 2025)
- Conditions: multiple movement-triggering features on different heads
 - *who* is attracted by [*φ/κ*(=CASE)] on T and [*WH*] on C.

- (2) Parallel *wh*-movement (≠successive-cyclic) Cf. *Who arrived?* (Chomsky 2008)



- (3) **Parallel chain formation**

Two chains α and β are related by parallel chain formation if and only if:

- Tail (α) = Tail (β), and
 - Head (α) \neq Head (β) (Kandybowicz 2008, p.115)
- PCs have been extremely successful in accounting for a wide range of movement phenomena

- (4) a. **Wh-movement**: Local *wh*-subject movement (Chomsky 2008), Icelandic *wh*-movement (Chomsky 2008; Bošković 2012), Medial-*wh* in German dialects/Romani, Afrikaans, and non-English children data (Lohndal 2017)
- b. **Predicate clefts/ Contrastive verbs**: Gengbe & Gungbe (Aboh 2006; Aboh and Dyakonova 2009), Russian (Aboh 2006; Aboh and Dyakonova 2009; Esipova 2018; Antonenko 2023), Kabiye (Collins and Essizewa 2007), Nupe (Kandybowicz 2008), Ibibio (Duncan 2016)
- c. **Object shift**: Icelandic object shift (Bošković 2012)
- d. **Floating quantifiers**: Korean FQ (Kim 2008), Japanese/English FQ (Mizoe 2013)
- **However**, there is a less-addressed **theoretical tension**.
 - In a number of works following Chomsky (2008), PCs have been argued to have a **different chain resolution algorithm** and lead to “**repetition/doubling**” effects (e.g., predicate clefts, Aboh 2006; Aboh and Dyakonova 2009; Kandybowicz 2008)
 - Yet, the motivating cases of PCs in Chomsky (2008) (beyond just local *wh*-subject movement) do not have repetition.

Overview of the talk

- **Theoretical tension.** We argue the the PF view of PCs in these works is problematic, as it
 - ❶ Contradicts the **standard theory** of linearization by Nunes (2004)
 - ❷ Misses a generalization that predicate clefts are associated with **affixes** adjacent to either *Head*(α) or *Head*(β)
 - ❸ Wrongly predicts all constructions with **PCs** as well as **overlapping chains** to involve repetition.

Overview of the talk (cont.)

- **Proposal.** We re-evaluate the status of Parallel Chains and argue that:
 - PC is a **purely syntactic** operation and bears minimal relevance to multiple pronunciation of movement chains
 - Repetition is due to **independent PF components** → successive-cyclic movement and parallel movement only differ in Narrow Syntax, but they **do not differ in chain resolution**
 - The theoretical space for repetition is thereby limited.
- To the best of our knowledge, this study is the first to demonstrate that Nunes’s chain resolution algorithm can derive varieties of movement chains without extra stipulations on the PF role of PCs.

• Road map

§2: A PF role of PCs?

§3: A theoretical challenge

§4: Repetition by PF triggers

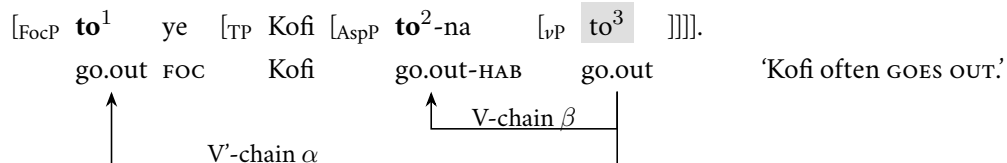
§5: PCs and overlapping chains without repetition

§6: Conclusion

2 A PF role of PCs?

- In the **PF**, PCs are held responsible for the doubling effects in predicate clefts in Gengbe, Gungbe, Russian, Kabiye, Nupe, etc.
- A verb can be attracted by Asp and Foc as in (5).
 - Empirical motivation: the fronted verb is in bare form, without affixes
 - Theoretical motivation: avoid excorporation from complex head (Baker 1988)

(5) Predicate clefts in Gengbe via PCs (Aboh and Dyakonova 2009, 1054)



- (5) mirrors (2), if we assume with Koopman (1984) in that predicate clefts involve V'-chains.
- It has been proposed that chains (precisely, movement dependencies) with different heads are resolved **independently** in the PF, despite sharing the same tail.
 - V-chain α : **to**², **to**³
 - V'-chain β : **to**¹, **to**³
- In Nunes (2004)'s terms—which the above work usually cites—PCs are treated as *separate nontrivial chains* here.
- No explanation is given to why the same repetition effects are not observed in every case of PCs.

3 A theoretical challenge

- In Nunes (1999, 2004)'s theory of linearization of movement chains, Form Chain does not track derivational history.
 - it *cannot* know if the copies were created by successive-cyclic or parallel movement!

(6) A nontrivial chain CH(X,Y) requires: (Nunes 2004:91)

- ①. X and Y are nondistinct;
 - ②. X c-commands Y;
 - ③. X has a feature checked by (the head of) X's sister and Y has a corresponding unchecked one.
- Applying Form Chain to PCs, e.g., (7) ...

→ PCs are indeed *not separate chains, but rather, linked chains in the PF*.

- Single copy pronunciation of *who*¹ in (2) is the default,
- which should apply to predicate clefts (e.g., *to*¹ in (5)) equally

(7) [_{CP} Who¹_[wh,φ,k] C_[wh] [_{TP} who²_[wh,φ,±i] T_[φ,k] [_{vP} ...who³_[wh,φ,k]]]] CH(**who**¹, **who**²)—CH(who², who³)

- To reconcile the conflict, one would need to:
 - (i) alter the definition of nontrivial chains and moreover,

(ii) re-analyze (2) **as well as** other PC cases without repetition (see §5) as successive-cyclic*

→ at the cost of giving up Chain Uniformity and Anti-locality.

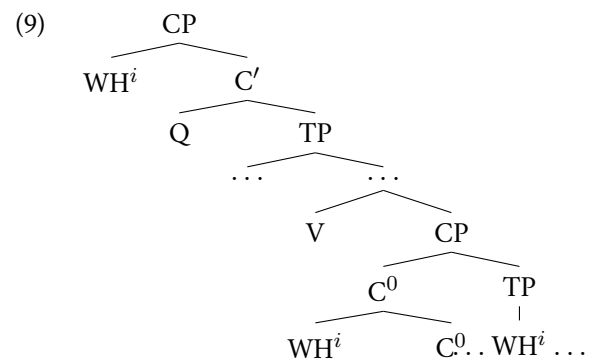
*Alternatively, one can also bundle C and T, so there is only one movement step to the bundled SpecC/TP. See Erlewine (2020) and references therein, also Bošković (2024)'s A/A'P. This line of approaches only resolves the tension with local *wh*-subject movement, but not with other PCs cases without repetition.

4 Repetition by independently motivated PF considerations

4.1 The role of affix in predicate clefts with doubling

- The PF/repetition role of PCs is undesirable and unnecessary.
- Indeed, existing apparatus like Nunes's **Morphological Fusion** already sufficiently derive doubling in **successive-cyclic** movement like German *wh*-copying (Nunes 2004).

(8) German (from McDaniel 1986)
Wen glaubt Hans **wen** Jakob gesehen hat?
 whom thinks Hans wen Jakob seen has
 'Who does Hans think Jakob saw?'



→ PLC: Pronounce Lower Copy :)

(Bošković and Nunes 2007)

- We propose that **doubling in predicate clefts is not due to PC *per se* but rather should be reduced to PF processes** like Nunes's Fusion or, Morphological Merger (Embick and Noyer 2001).
 - For example, in Gengbe, predicate clefts with doubling involve an (aspectual) suffix in the middle copy *-na* in (10)

(10) Predicate clefts in Gengbe via PCs (=5); Aboh and Dyakonova 2009, 1054

[_{FocP} **to**¹ ye [_{TP} Kofi [_{AspP} **to**² **-na** [_{VP} **to**³]]]].

go.out FOC Kofi go.out-HAB go.out 'Kofi often GOES OUT.'

- Similarly, Nupe predicate clefts involve a nominalization prefix in the higher copy *bi-*, as in (11).

(11) Predicate clefts in Nupe via PCs

'It was CUTTING that Musa did to the meat.'

Bi- ba¹ Musa **ba**² **ba**³ nakàn o.
 RED.NOM-cut Musa cut meat FOC

(Kandybowicz 2008:109)

- In both cases, the doubling effects follow naturally from Fusion/m-Merger of the verbs and these affixes, which renders the copies distinct, invalidating Form Chain (cf. criterion ①).

(12) Fusion invalidates Form Chain

In (5). [V]+[HAB]→[V,HAB] (=tona)

→ CH(to¹, to³) + tona

In (11).[N]+[V]→[N,V] (=biba)

→ biba + CH(ba², ba³)

- These copies (to²/ba¹) are not contained in any nontrivial chains and are thus exempted from Chain Reduction, yielding repetition.

→ It is thus unnecessary to attribute any PF effect to PC.

4.2 Further support: Bulgarian and Russian

- **Attributing doubling in predicate clefts to Fusion/m-Merger** has at least two desirable consequences.
- First, it predicts that in the absence of Fusion/m-Merger (i.e., no affix on the verbs), predicate clefts come with no doubling. This is borne out in Bulgarian (Embick and Izvorski 1997; Harizanov 2019).

(13) Bulgarian predicate fronting without doublinga. Šte sām **pročel** knigata.

will be.1s.prs read the.book

‘I’ll have read the book.’

b. **Pročel** šte sām knigata.

- Second, it provides a way to understand an interesting pattern in Russian predicate clefts (Aboh and Dyakonova 2009, p.1039).

(14) -to is optional when V1 and V2 differ in forms in Russian**Videt’**(-to) ja ee davno ne **videla**, ...

see.INF(-PTCL) I.NOM her.ACC long NEG see.PST.FEM.S

‘As for seeing her, it’s been a long time since I saw her, ...’

(15) -to is obligatory when V1 and V2 are identical in forms in Russian**Slomalas’**(-to) ona **slomalas’**, ...

break.PST.FEM.S(-PTCL) she.NOM break.PST.FEM.S

‘As for breaking, it did break, ...’

5 PCs and overlapping chains without repetition

- Moreover, many genuinely PC-derived constructions show no repetition at all, e.g.,

- English local *wh*-subject movement in (2);
- Icelandic agreement intervention (Chomsky 2008);
- Icelandic quantifier floating (Bošković 2012)
- Recall that under the PF view of PCs, they are always “separate” chains that should be resolved independently
 - Wrongly predicts repetition whenever two chains share the same tail
- Such a construal of “separate” chains by PCs would undesirably extend to cases involving what we call **overlapping chains (OCs)**, where the *Tails* of two chains overlap.
- These cases can also be regarded as a subtype of PCs, instantiated in
 - **subextraction** ($Tail(\alpha) \in Tail(\beta)$) α containing the highest copy
 - **remnant movement** ($Tail(\beta) \in Tail(\alpha)$)
- If PC comes with a PF/repetition effect, we expect that **OCs would create a great deal of doublets, since neither heads nor tails are identical.**
- However, repetition still does not necessarily arise.

5.1 Subextraction

- The highest PP copy in (16b) cannot be extracted from the middle DP copy (a subject island, cf. (16a)) but must from the lowest DP copy at the object position (not an island, cf. (16c)).
- Importantly, single copy pronunciation of PP^1 and DP^a (with a silent PP^2) follows from Form Chain & Chain Reduction (=17).

(16) English subextraction from genuine vs. derived subjects (Chomsky 2008:153)

- a. *It was [_{PP} the car (not the truck) of] which [_{DP} the driver Δ_{PP}] caused a scandal. *active*
- b. It was [_{PP} the car (not the truck) of] which [_{DP} the driver Δ_{PP}] was found Δ_{DP} . *passive*
- c. It was [_{PP} the car (not the truck) of] which they found [_{DP} the driver Δ_{PP}].

(17) a. [_{PP} **of the car**¹] ... [_{DP} **the driver of the car**²] ^a ... [_{DP} **the driver of the car**³] ^b ...

- b. $CH(PP^1, PP^2) - CH(PP^2, PP^3), CH(DP^a, DP^b) \rightarrow$ only PP^1 & DP^a pronounced

5.2 Remnant VP movement

- Remnant VP movement is known to have variations in how much materials are doubled:
 - languages like German only pronounce the verb once (den Besten and Webelhuth 1990)

(18) A remnant movement analysis of Participle-Auxiliary order in German

[_{VP} t_i **Gelesen**] hat Hans [_{DP} das Buch]_i nicht t_{VP} ❶ DP movement; ❷ VP movement

read has Hans the book not

‘Hans has not read the book.’

- Languages like Hebrew pronounce the verb twice as in (19) (Landau 2006:37)

(19) Hebrew phrasal-infinitive fronting

[_{VP} **liknot**_i et ha-praxim], hi **kanta**_i.

❶ V movement; ❷ VP movement

to-buy ACC the-flowers she bought

‘As for buying the flowers, she bought.’

- In the German case in (18), no Fusion or m-Merger applies, as both DP and VP are phrasal elements.
- In the Hebrew case in (19), copies resist deletion for PF constraints (=20), cf. Landau 2006).

(20) a. [_{VP} **buy**¹ **flowers**]^a ... [_{TP} **buy**²-T ... [_{VP} **buy**³ **flowers**]^b]

\uparrow \uparrow
 ν P-chain α ν -chain β

b. CH(**buy**¹, **buy**²)—CH(**buy**², **buy**³), CH(**ν P**^a, **ν P**^b)

c. Stray Affix Filter → **buy**²; Intonation_{Top} → **ν P**^a

- Such variations are not surprising given languages differ in Externalization/PF, but would otherwise be, if repetition were PC-driven.

6 Conclusion

- We **restricted** PC’s role to Narrow Syntax.
- In the **PF**, (i) successive-cyclic, (ii) parallel, and (iii) overlapping chains are resolved in the **same** way
- All take a long road to **repetition**, via independent PF constraints
- No different, stipulative resolution algorithm is needed.
- **The theoretical space for repetition is thereby limited.**

Types of chains	Head	Tail	E.g.	PF	Repetition
Successive cyclic	Head(α) \neq Head(β)	Tail(α) \neq Tail(β)	<i>wh</i> -obj. mvt. (1)	N/A	✗
			<i>wh</i> -copying (8)	Fusion	✓
Identical PCs	Head(α) \neq Head(β)	Tail(α) = Tail(β)	local <i>wh</i> -subj. mvt. (2)	N/A	✗
			predicate clefts (5/10), (11)	Fusion/m-Merger	✓
Overlapping PCs	Head(α) \neq Head(β)	Tail(α) \in Tail(β)	subextraction (16)	N/A	✗
		Tail(β) \in Tail(α)	remnant mvt. (18), (19)	SAF/Intonation ₍₁₉₎	✓ ₍₁₉₎

References

- Aboh, Enoch Oladé. 2006. “Complementation in Saramaccan and Gungbe: The Case of C-type Modal Particles.” *Natural Language and Linguistic Theory* 24 (1): 1–55.
- Aboh, Enoch Oladé, and Marina Dyakonova. 2009. “Predicate doubling and parallel chains.” *Lingua* 119 (7): 1035–1065.

- Antonenko, Andrei. 2023. “Annual Workshop on Formal Approaches to Slavic Linguistics.” In *Formal Approaches to Slavic Linguistics (FASL 27)*, edited by Vera Griбанова, Sabrina Grimberg, Erika Petersen, Eva Portelance, and Brandon Waldon, 1–21. Ann Arbor, Michigan: Michigan Slavic Publications.
- Baker, Mark. 1988. *Incorporation*. Chicago, Illinois: University of Chicago Press.
- Bošković, Željko. 2012. “Don’t Feed Your Movements When You Shift Your Objects.” In *Ways of Structure Building*, edited by Myriam Uribe-Etxebarria and Vidal Valmala, 245–252. Oxford: Oxford University Press.
- Bošković, Željko. 2016. “On the timing of labeling: Deducing Comp-trace effects, the Subject Condition, the Adjunct Condition, and tucking in from labeling.” *The Linguistic Review* 33 (1): 17–66.
- Bošković, Željko. 2024. “Object drop in imperatives and the status of imperative subjects.” *Journal of Slavic Linguistics* To appear: 1–19.
- Bošković, Željko, and Jairo Nunes. 2007. “The Copy Theory of Movement: A view from PF.” In *The Copy Theory of Movement*, edited by Jairo Nunes and Norbert Hornstein, 13–74. Oxford: Blackwell Publishers.
- Branan, Kenyon. 2022. “Locality and antilocality: The logic of conflicting requirements.” *Linguistic Inquiry* 54 (1): 1–38.
- Chen, Fulang, and Ka-Fai Yip. 2025. “Facilitator effects in Mandarin topicalization: Evidence for a crossing-based view of antilocality.” Edited by Duygu Demiray, Roger Cheng-yen Liu, and Nir Segal. *Proceedings of the Fifty-Fifth Annual Meeting of the North East Linguistic Society (NELS-55)* 1:115–128.
- Chomsky, Noam. 2000. “Minimalist inquiries: the framework.” In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, edited by Roger Martin, David Michaels, and Juan Uriagereka, 89–156. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2008. “On Phases.” In *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, edited by Robert Freidin, Carlos Otero, and Maria Luisa Zubizarreta, 133–166. Cambridge: MIT Press.
- Collins, Chris, and Komlan E Essizewa. 2007. “The syntax of verb focus in Kabiye.” In *Selected Proceedings of the 37th Annual Conference on African Linguistics*, edited by Doris L. Payne and Jaime Peña, 192–203. Somerville, MA.
- den Besten, Hans, and Gert Webelhuth. 1990. “Stranding.” In *Scrambling and Barriers*, edited by Günther Grewendorf and Wolfgang Sternefeld, 77–92. Amsterdam: John Benjamins Publishing Company.
- Duncan, Philip T. 2016. “Parallel chain formation in Ibibio contrastive verb focus.” In *Proceedings of the 42nd Annual Meeting of the Berkeley Linguistics Society*, 87–106.
- Embick, David, and Roumyana Izvorski. 1997. “Participle-Auxiliary Word Orders in Slavic.” In *Formal Approaches to Slavic Linguistics (FASL): The Cornell Meeting 1995*, edited by Natasha Kondrashova, Wayles Browne, Ewa Dornisch, and Draga Zec, 4:210–239. Ann Arbor: Michigan Slavic Publications.
- Embick, David, and Rolf Noyer. 2001. “Movement operations after syntax.” *Linguistic Inquiry* 32 (4): 555–595.
- Erlewine, Michael Yoshitaka. 2016. “Anti-locality and optimality in Kaqchikel Agent Focus.” *Natural Language and Linguistic Theory* 34 (2): 429–479.
- Erlewine, Michael Yoshitaka. 2020. *Mandarin shì clefts and the syntax of discourse congruence*. Ms., National University of Singapore.
- Esipova, Maria. 2018. “Two Types of Verb Fronting in Russian.” In *Formal Approaches to Slavic Linguistics (FASL 26)*, 75–92. Ann Arbor, Michigan: Michigan Slavic Publications.
- Harizanov, Boris. 2019. “Head movement to specifier positions.” *Glossa: a journal of general linguistics* 4 (1): 140. 1–36.
- Kandybowicz, Jason. 2008. *The Grammar of Repetition: Nupe grammar at the syntax–phonology interface*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Kim, Yong-Ha. 2008. “Against Cyclic Linearization: Scrambling and Numeral Quantifiers in Korean.” *Language Research*.
- Koopman, Hilda. 1984. *The Syntax of Verbs*. Dordrecht, The Netherlands: Foris Publications.
- Landau, Idan. 2006. “Chain Resolution in Hebrew V(P)-fronting.” *Syntax* 9 (1): 32–66.
- Lohndal, Terje. 2017. “Medial-wh phenomena, parallel movement, and parameters.” In *Formal Grammar*, 149–173. Routledge.
- Mizoe, Emiko. 2013. “On Floating Quantifiers.”
- Newman, Elise. 2020. “Facilitator effects in middles and more.” *Glossa: a journal of general linguistics* 5:1–40.
- Nunes, Jairo. 1999. “Linearization of chains and phonetic realization of chain links.” In *Working minimalism*, edited by Samuel Epstein and Norbert Hornstein, 217–249. Cambridge, Massachusetts: MIT Press.
- Nunes, Jairo. 2004. *Linearization of Chains and Sideward Movement*. Cambridge, Massachusetts: MIT Press.