

## PHONOLOGY-SYNTAX INTERLEAVING IN GUÉBIE FOCUS FRONTING

In Guébie (Kru, ISO 639-3: *gie*), a focus-fronted verbal particle shows ATR harmony with the verbal root if the verbal root is clause-final (PartSAuxOV), but not if it has moved out of the VP (PartSVO). To account for these long-distance harmony facts, we propose a novel model of the phonology-syntax interface, where the operations of movement and spell-out are interleaved. In Guébie, the spell-out of VoiceP (VceP) follows head movement, but precedes focus fronting ( $\bar{A}$ -movement), which can target a subpart of the previously spelled-out VceP. We show that the classic inverted-Y model of the grammar and the strict Phase Impenetrability Condition (PIC) must be abandoned to account for these long-distance non-continuous harmony effects. Data were collected by the authors.

DATA. Guébie has SAuxOV word order if an auxiliary (Aux) is present (1a) and SVO order if there is no Aux (1b). Following Sande (2017), we assume that the post-subject position is T, not C, because there is evidence from topics, focus, and WH-questions for a higher C-position. If Aux is present, Aux occupies T. In the absence of Aux, V moves to T. Superscripted numbers 1-4 represent four level tone heights.

- (1) a. *ɟaci*<sup>23.1</sup> *ji*<sup>3</sup><sub>T</sub> *su-wa*<sup>2.2</sup> *gbala*<sup>3.4</sup>  
 Djatchi will tree-DEF climb  
 “Djatchi will climb the tree.”
- b. *ɟaci*<sup>23.1</sup> *gbala*<sup>3.4</sup><sub>T</sub> *su-wa*<sup>2.2</sup>  
 Djatchi climb.PFV tree-DEF  
 “Djatchi climbed the tree.”

Guébie has a class of particle verbs, composed of an adposition-like particle and a verbal root. In SAuxOV contexts, the particle and the verbal root appear in the V position (2a). In SVO contexts, the verbal root moves to T, leaving the particle behind (2b). The particle may not move with the verb (2c). The particle and the verbal root show ATR harmony when syntactically adjacent (2a), but not when the verb has moved to T (2b). ATR harmony is represented with wavy underline.

- (2) a. *e*<sup>4</sup> *ji*<sup>3</sup><sub>T</sub> *ɟaci*<sup>23.1</sup> *joku*<sup>2.3</sup> *ni*<sup>4</sup>  
 I will Djatchi PART- visit  
 “I will visit Djatchi.”
- b. *e*<sup>4</sup> *ni*<sup>4</sup><sub>T</sub> *ɟaci*<sup>23.1</sup> *joku*<sup>2.3</sup> c. \**e*<sup>4</sup> *joku*<sup>2.3</sup> *ni*<sup>4</sup><sub>T</sub> *ɟaci*<sup>23.1</sup>  
 I visit.PFV Djatchi PART I PART- visit.PFV Djatchi  
 “I visited Djatchi.” intended: “I visited Djatchi.”

A focused constituent surfaces left of the subject (3a). Focusing a simple verb (no particle) is realized with doubling (3b). Focusing a particle verb is realized with particle-fronting (3c) and no doubling (3d). Fronted particles harmonize with the root in PartSAuxOV (4a), but not in PartSVO constructions (4b).

- (3) a. *sɔkɔ*<sup>4.2</sup> *mɛ*<sup>3</sup> *ɔ*<sup>3</sup> *pa*<sup>3</sup><sub>T</sub> =*a*<sup>2</sup>  
 hole in she throw.PFV =it  
 “She threw it [into a hole]<sub>Foc</sub>.”
- b. *gbala*<sup>3.4</sup> *ɔ*<sup>3</sup> *ji*<sup>3</sup><sub>T</sub> *su*<sup>2</sup> *gbala*<sup>3.4</sup>  
 climb he will tree climb  
 “He will [climb]<sub>Foc</sub> a tree.”
- c. *joku*<sup>2.3</sup> *ɔ*<sup>3</sup> *ni*<sup>4</sup><sub>T</sub> =*ɔ*<sup>2</sup>  
 PART he visit.PFV =him  
 “He [visited]<sub>Foc</sub> him.”
- d. \**(joku*<sup>2.3</sup> *ni*<sup>4</sup> *ɔ*<sup>3</sup> *ni*<sup>4</sup><sub>T</sub> =*ɔ*<sup>2</sup> *(joku*<sup>2.3</sup>)  
 PART- visit he visit.PFV =him PART  
 intended: “He [visited]<sub>Foc</sub> him.”
- (4) a. *joku*<sup>2.3</sup> *ɔ*<sup>3</sup> *ji*<sup>3</sup><sub>T</sub> *ɟaci*<sup>23.1</sup> *ni*<sup>4</sup>  
 PART he will Djatchi visit  
 “He will [visit]<sub>Foc</sub> Djatchi.”
- b. *joku*<sup>2.3</sup> *ɔ*<sup>3</sup> *ni*<sup>4</sup><sub>T</sub> =*ɔ*<sup>2</sup>  
 PART he visit.PFV =him  
 “He [visited]<sub>Foc</sub> him.”

PREVIOUS ANALYSES. The Guébie facts prove challenging for previous analyses of predicate fronting and verb doubling (Sande and Clem, 2020). First, Guébie predicate fronting involves movement rather than base-generation: a doubled verb or fronted particle in an embedded clause can surface both at the left edges of both the embedded clause and the main clause (successive cyclicity), verb fronting is impossible out of islands, and it creates an island for WH-movement. For existing movement analyses, the two main challenges are: (i) the verb doubles when no particle is present, but not when there is a particle; (ii) fronted particles harmonize with verb roots but surface on opposite ends of the clause. Analyses that involve fronting the full VP (Koopman, 1997; Landau, 2006), relying on PF constraints to determine what gets pronounced where, are problematic for Guébie, where verb focus (3-4) is distinct from VP focus (involving a nominalized fronted verb + *do*-support). And while one could say that a silent fronted copy of the verb triggers harmony on the particle in PartSAuxOV contexts, one could not rule out harmony in PartSVO contexts. We pursue an alternative: The particle harmonizes with the verb while both are low (SAuxOPart<sub>V</sub>, but not in SVOPart where the verb has moved to T); fronting happens after the harmonization (PartSAuxOV<sub>V</sub>, cf. PartSVO). The movement of a constituent out of a previously spelled-

-out domain is unexpected in, say, phase theory (Chomsky, 2000), but necessary for Guébie.

NOVEL PROPOSAL. We propose that focus (3a')  $sɔkɔ^{4.2} me^3_{\text{Foc}} \vartheta^3 pa^3_{\text{T}} =a^2 sɔkɔ^{4.2} me^3$  fronting is  $\bar{A}$ -movement to Spec,FocP (3a').

We assume that verbal roots ( $\checkmark$ ) are complements to the category head  $v$  and head-move to  $v$ . Verb particles are phrasal (PartP) and introduced as complements to roots (5). We assume the target of verb focus is  $v$ P, which coincides with the interpretation of verb focus. We assume that  $v$  moves to the agent-introducing head Vce. Thus, when focused, the verb participates in two movement chains (Kandybowicz, 2007): head movement  $v$ -to-Vce (sometimes followed by Vce-to-T) and focus fronting  $v$ P-to-Spec,FocP. Since in each chain only the highest copy is pronounced, verb focus results in doubling (3b').

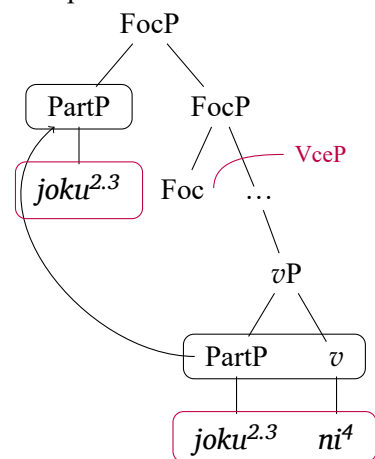
(5)  $[[joku^{2.3}_{\text{PART}} ni^4_{\checkmark}]_{vP} ni^4_v]_{vP}$  (3b')  $gbala^{3.4}_{\text{Foc}} \vartheta^3 ji^3_{\text{T}} su^2 gbala^{3.4}_{v(P)} gbala^{3.4}_{\text{Vce}}$   
 PART visit visit climb he will tree climb climb

When a particle verb is focused, (4a')  $joku^{2.3}_{\text{PART}} \vartheta^3 ji^3_{\text{T}} jaci^{23.1}$   $[[joku^{2.3}_{\text{PART}} ni^4_v]_{vP} ni^4_{\text{Vce}}]_{\text{VceP}}$  only the particle moves. We model this as anti-pied-piping, whereby only the leftmost subconstituent of the logically focused phrase fronts (Branan et al., 2020). We propose that the difference in ATR harmony between (4a) and (4b) results from the interleaving of movement and spell-out. In PartSAuxOV constructions, the verbal particle harmonizes with the verbal root (4a'). First,  $v$  moves to Vce (1). Then, VceP undergoes phonological evaluation (2). (We assume that Vce is a phase-head and therefore a spell-out domain. Following (Boskovic, 2016), we assume that heads are spelled out with their complements.) Since the verbal root is in VceP at spell-out, the particle can harmonize with it. Finally,  $v$ P-focus anti-pied-pipes the verbal particle to Spec,FocP (3).

In PartSVO constructions, the (4b')  $joku^{2.3}_{\text{PART}} \vartheta^3 ni^4_{\text{T}} =\vartheta^2 [[joku^{2.3}_{\text{PART}} ni^4_v]_{vP} ni^4_{\text{Vce}}]_{\text{VceP}}$  verbal particle does not harmonize with the verbal root (4b'). First,  $v$  moves to Vce (1). Second, Vce moves to T (2). Then, VceP undergoes phonological evaluation (3). Since the verbal root has left VceP before spell-out, there is nothing for the particle to harmonize with. Finally,  $v$ P-focus anti-pied-pipes the particle to Spec,FocP (4).

In our model, syntactic and phonological operations are interleaved. Thus, we depart from the Y-model of the grammar, in which syntax precedes phonology. To capture the facts that syntax does not refer to phonology (phonology-free syntax) and that phonology does not refer to syntactic structure (e. g. bracket erasure), we propose that morphosyntactic nodes (black boxes in the fig. to the right) are associated (with vertical lines) to phonological nodes (purple boxes), but nevertheless neither module refers to the other.

E. g., focus fronting may target the syntactic node PartP. PartP is associated with the previously spelled out (VceP) phonological node  $[joku^{2.3}]$ . Thus,  $[joku^{2.3}]$  moves to Spec,FocP along with with PartP. However, the syntactic focus fronting only refers to “PartP;” it does not refer to any phonological information. Likewise, when the particle and the verb root  $/joku^{2.3} ni^4/$  are evaluated together at VceP spell-out (yielding  $[joku^{2.3} ni^4]$ ), no phonological rule or constraint refers directly to syntactic information. Thus, despite abandoning the strict precedence of syntax over phonology entailed by classic Y-model of the grammar, our proposal captures the fact that syntax is generally blind to phonology and vice versa.



Branan, K. et al. (2020). “Anti-pied-piping.” Manuscript. National University of Singapore. Kandybowicz, J. (2007). “On fusion and multiple copy spell-out. The case of verbal repetition.” In: Koopman, H. (1997). “Unifying predicate cleft constructions.” In: *Annual Meeting of the Berkeley Linguistics Society*. Vol. 23. 2, pp. 71–85. Sande, H. (2017). “Distributing morphologically conditioned phonology: Three case studies from Guébie.” PhD thesis. UC Berkeley. Sande, H. and E. Clem (2020). “Guébie particle verbs, predicate fronting, and the syntax-phonology interface.” Manuscript.