

## A Parameter-free Underspecification Approach to Complementizer Agreement

Acrisio Pires (University of Michigan) & Yushi Sugimoto (University of Tokyo)

**Synopsis:** The issues of linguistic variation and parametric variation have not been explored comprehensively in Minimalism (see e.g. Chomsky 1995; Chomsky et al. 2019). Two partially distinct central views of linguistic variation in Principles & Parameters/Minimalism are (i) variation comes from the lexicon (aka the Borer-Chomsky conjecture, cf. Baker 2008) or (ii) variation is spelled out through externalization (the Berwick-Chomsky conjecture, Berwick and Chomsky 2016). In this paper, we explore a third view of linguistic variation, invoking underspecification of rule ordering in narrow syntax, based on Obata et al. (2015) and related work. We compare three languages: Brazilian Portuguese (BP) and two Romance-based creoles, Haitian Creole (HC), Cabo Verdean Creole (CVC), regarding complementizer (C) realization in *wh*-questions, which has been analyzed as related to C agreement. Whereas HC and CVC require an overt complementizer in *wh*-questions in some cases, BP shows a pattern of widespread optionality. We argue that the varying systems can be accounted for by rule-ordering underspecification in the grammar.

**The complementizer *ki* in HC and CVC:** In HC and CVC, the realization of the complementizer *ki* varies depending on the type of *wh*-question. *ki* in HC is blocked with object *wh*-movement (2), but required with subject *wh*-questions (1) (Takahashi and Gračanin-Yuksek 2008, henceforth T&Y).

- |   |                                    |
|---|------------------------------------|
| (1) <i>wh</i> -subject extraction in HC (2) | <i>wh</i> -object extraction in HC |
| Kilés *( <i>ki</i> ) te wé Mari?            | Kilés Mari *( <i>ki</i> ) te wé?   |
| who COMP ANT see Mari                       | what Mari ANT see'                 |
| 'Who saw Mari?' (T&Y:229,(14b))             | Who did Mari see?' (T&Y:231,(16a)) |

T&Y propose that *when the complementizer agrees with a single goal in both wh- and phi-features, the complementizer ki is morphologically realized*. Thus, in (1), C agrees with the *wh*-subject in both *wh* and *phi*-features. In (2), on the other hand, C agrees with the subject only in *phi*-features, but with *wh*-object in *wh*-feature (assuming standard probe-goal c-command locality and interventions.)

Obata et al. (2015) assume that CVC follows T&Y's generalization, though the pattern of morphological realization of *ki* is different from HC, in that *ki* in CVC is morphologically realized in both overt *wh*-subject and *wh*-object movement, as shown in (3)-(4).

- |  |   |
|--|---|
| (3) <i>wh</i> -subject extraction in CVC | (4) <i>wh</i> -object extraction in CVC   |
| Kenhi *( <i>ki</i> ) odja João?          | Kuze *( <i>ki</i> ) nhos odja?            |
| who COMP see João                        | what COMP you see                         |
| 'Who saw João?' (Obata et al. 2015:5)    | 'What did you see?' (Obata et al. 2015:6) |

Obata et al. (2015) argue that this is because the rule ordering in CVC is different from HC; the timing of Agree is crucial. In (3), the pattern is the same as HC in (1); C agrees with the *wh*-subject with respect to both *wh*- and *phi*-features. However, in the case of object *wh*-movement (4), the rule ordering is different from HC in (2); (i) The *wh*-object first moves to the edge of the *v*-phase and (ii) due the *wh*-object being the closest goal in the edge of *vP*, C agrees with the *wh*-object in both *wh*- and *phi*-features, which results in the realization of *ki*. Thus, the *wh*-object moves first and becomes the closest goal when C undergoes Agree.

**The optionality of complementizer agreement in Brazilian Portuguese (BP):** Unlike CVC, BP shows another relevant pattern. The complementizer is optionally realized in both subject and object overt *wh*-movement questions.

- |   |  |
|---|--|
| (5) <i>wh</i> -subject extraction in BP | (6) <i>wh</i> -object extraction in BP |
| Quem (que) viu o João?                  | Quem (que) você viu?                   |
| Who (COMP) saw the João?                | who (COMP) you saw                     |
| 'Who saw João?'                         | 'Who did you see?'                     |

Two derivations are possible in each case in BP: in the *wh*-object extraction case (6), either (i) C probes down and agrees only in phi-features with the subject in [Spec, TP] and with the lower *wh*-object in *wh*-feature (so, there is no overt realization of the complementizer, the same as the HC pattern in (2)); or (ii) C agrees with the *wh*-object at the edge of the *v*-phase in both *wh*- and *phi*-features, before subject raising to [Spec, TP], leading to the realization of *que*; this matches the CVC pattern in (4). Thus, BP can vary between both the HC and CVC derivation patterns. When *wh*-subject extraction takes place in BP (5), there are also two possible derivations: either (i) subject *wh*-movement to [spec,TP] takes place first, followed by Agree with C, yielding the same overt C pattern as HC and CVC subject overt *wh*-movement (1-3); or (ii) subject *wh*-movement takes place to the *v*-phase edge, then feature inheritance takes place that splits the phi-features below the *wh*-phrase, which results in no realization of *que*, since C agrees with the subject only in *wh*-feature.

**Extension 1: *wh in-situ* in BP** the approach we propose also explains the lack of overt complementizer *que* in *wh in-situ* in BP.

- (7) Você viu quem?  
 you saw who  
 ‘Who did you see?’ (Kato 2013: 178,(7b))

In an object *wh*-in-situ question, C finds the subject to value the u-phi-features, so C agrees with the object *wh*-phrase only regarding *wh*-feature, which again results in non-realization of the complementizer (subject *wh*-in-situ is a variation of the *wh*-subject pattern in (5)).

**Extension 2: *wh*-adjuncts in BP** also show the optional complementizer *que*.

- (8) Desde quando (que) você gosta dele?  
 Since when (that) you like him  
 ‘Since when do you like him?’

However, *wh*-adjuncts do not have phi-features. We propose this modified generalization that accounts for this and the previous patterns:

- (9) *When C only agrees with a single element (meeting the requirement that it will agree in all features with a single goal), C will be morphologically realized.*

Based on this generalization, two derivations are again possible in BP: either (i) C agrees with the subject in terms of phi-features, and C agrees with the *wh*-adjunct only in *wh*-feature, yielding no realization of *que*. or (ii) phi-feature inheritance takes place from C to T, and C agrees directly only with the *wh*-adjunct (in *wh*-feature), satisfying generalization (9), therefore *que* is overtly realized.

Interestingly, CVC also shows a pattern in which the realization of *ki* with adjunct-*wh* words is optional, similar to BP, but unlike all argument *wh*-questions in CVC (3-4).

- (10) Undi (ki) bu bai?  
 where COMP you go  
 ‘Where did you go?’ (Obata et al. 2015: 5, fn8)

The derivations for both CVC options in (10) follow the same pattern as BP *wh*-adjuncts (8), so we do not go over detailed steps here.

Given the analyses above, different patterns of obligatory realization, obligatory omission as well as optionality in the realization the complementizers are accounted for under a rule-ordering approach to C agreement that does not invoke parameters, lending support to this alternative approach to syntactic variation.

**Selected References:** Obata, M., M. Baptista, and S.D. Epstein. 2015. Can crosslinguistically variant grammars be formally identical? Third factor underspecification and the possible elimination of parameters of UG. *Lingua* 156: 1-16. || Takahashi, S. and M. Gračanin-Yuksek 2008. Morphosyntax of Movement Dependencies in Haitian Creole. *Syntax* 11:2, 223-250.