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## Weak and strong interrogatives in Mauritian<sup>1</sup>

### Abstract

We show that Mauritian, a French-based creole, has an alternation between weak and strong forms for inanimate ('what') and locative ('where') interrogatives. We rely on corpus data (Virahsawmy, Lalit) and intuitions of native informants.

Since weak forms must be extracted and strong form *in situ*, this may be a challenge for movement-based approaches (Chomsky 1977). We show how it can be handled in a HPSG grammar, using a three value WEAK feature. We extend the analysis to two other French-based creoles.

### 1. Weak and strong interrogative pronouns

#### 1.1 Weak and strong inanimates<sup>2</sup>

In Mauritian interrogatives, the *wh*-phrase usually occurs in a left peripheral position (1a), and the verb long form (LF) is used, but it can also occur *in situ*, without an echo interpretation (Syea 2013), and the verb short form (SF) is used (Henri 2010):

- (1) a. *Ki gato to 'nn manze ?* 'Which cake did you eat?'  
Which cake 2SG PERF eat.LF ?  
b. *To 'nn manz ki gato ?* 'You ate which cake?'  
2SG PERF eat.SF which cake ?

The interrogative *ki* can be a discourse particle or a determiner (1), but it can also be a pronoun ('what') with a constrained distribution: it must be subject or extracted (2) and alternates with *kiete* which must be *in situ* (3a) or pied-piped (3b).

- (2) a. *Ki/\*Kiete to pou manze ?* 'What will you eat?'  
what 2SG FUT eat.LF ?  
b. *Ki/\*Kiete pase la ?* 'What happens here?'  
what happen.LF here ?  
(3) a. *To pou manz kiete/\*ki ?* 'You will eat what?'  
2SG FUT eat.SF what ?  
b. *Avek kiete/\*ki li ekrir ?* 'With what does he write?'  
With what 3SG write.SF

We analyse *ki* as a weak form and *kiete* as a strong form, like the personal pronouns: *mo* ('I'), *to* ('you')/ *mwa* ('me'), *twa* ('you')(4) (Syea 2000). Only the weak forms can be subject (2b)(4a), only the strong forms can be complement (3a)(4b). Only the strong forms can be modified (4c) or coordinated (5), or stand alone (6).

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<sup>2</sup> French also has two forms for the inanimate interrogative: a weak form *que* (extracted) (a) and a strong form *quoi* (*in situ*) (b), with a more complex distribution: none can be subject or embedded, and *que* must cliticize to the verb (Obenauer 1977).

- a. *Que /\*Quoi manges-tu ?* 'What do you eat?' b. *Tu manges quoi/\*que ?* 'You eat what?'  
c. *\*Quoi / \*Que s'est passé ?* 'What happened?'  
d. *\*Je sais que/ quoi tu manges.* 'I know what you eat.'

- (4) a. *Mo/\*Mwa pou vini.* 'I will come.'  
 1SG FUT venir.LF  
 b. *Pol inn trouv twa/\*to.* 'Paul has found you.'  
 Paul PERF find 2SG.  
 c. *Nek mwa/\*mo inn vini.* 'Only I came.'  
 only 1SG PERF come.LF
- (5) a. *Kisannla ou kiete/\* ou ki inn fer twa sanz lide?*  
 Who or what PERF make.SF 2SG change.SF idea ?  
 'Who or what made you change your mind ?'  
 b. *Zan ek mwa/ \*ek mo.* 'John and me'  
 Jean and 1SG
- (6) a. Spk1– *Kisannla pou vini ?* 'Who will come?'  
 Who FUT come.LF  
 Spk2– *Mwa/\*Mo.* 'Me.'  
 1SG  
 b. Spk1– *Pol inn manz kitsoz.* 'Paul ate something.'  
 Pol PERF eat.SF something.  
 Spk2– *Kiete/#Ki ?* 'What?'

In embedded interrogatives, *ki* is used (7) unless it is a verbless sluice, and *kiete* must be used (8):

- (7) *Mo trouve [ki/\*kiete Pol inn manze].*  
 1SG see.LF what Paul PERF eat.LF  
 'I see what Paul ate.'
- (8) *Pol inn manz kitsoz me mo pa 'nn trouve [kiete/\*ki].*  
 Paul PERF eat.SF something but 1SG NEG PERF see.LF what  
 'Paul has eaten something but I did not see what.'

## 1.2 Weak and strong locatives

Mauritian also has two forms for locative interrogatives ('where')<sup>3</sup>, in complementary distribution, both coming from the French noun *côté* ('side'): *kot* must be extracted (9a) and *kote* in situ (9b) or in isolation (10).

- (9) a. *Kot/\*Kote to pou ale?* 'Where will you go?'  
 Where 2SG FUT go.LF  
 b. *To pou al kote/\*kot?* 'You will go where?'  
 2SG FUT go.SF where ?
- (10) Spk1– *Pol inn al deor.*  
 Pol PERF go.SF abroad  
 'Paul went abroad.'  
 Spk2– *Kote/\*Kot ?* 'Where?'

We consider that the same weak/strong distinction applies to the interrogative adverb 'where'. In embedded clauses, only *kot* is allowed (11a), and only *kote* in a verbless sluice (11b).

- (11) a. *Mo pa kone, [kot/\*kote to 'nn ferm li].*  
 1SG not know.LF [where 2SG PERF lock.SF 3SG]  
 'I don't know where you locked him.'

<sup>3</sup> A third form *kotsa* ('where') does not have these restrictions and behaves like other wh- words.

- b. *To 'nn ferm li dan enn kaso, mo pa kone [kote/\*kot].*  
 2SG PERF lock.SF 3 SG in IND jail, 1SG NEG know.LF where  
 'You locked him in a jail, I don't know where.' (act 1 scene 7, Toufann, Virahsawmy)

## 2. An HPSG analysis

### 2.1 The verb form alternation

To account for verb alternation, we rely on two constraints on the HEAD feature VFORM, leaving aside verum focus (Henri 2010): the verb short form requires a non empty list of complements (COMPS) while an empty COMPS list triggers the verb long form:

(12) Lexical constraints on verbs:

[HEAD [VFORM *sf*]] => [COMPS *nelist*]

[COMPS *elist*] => [HEAD [VFORM *lf*]]

Using Bouma et al. 2001's lexical analysis of extraction, words obey an argument conservation principle (13): an extracted complement has a non canonical SYNSEM and belongs to the verb's ARG-ST, but not to its COMPS list, hence the verb long form.

(13) Argument conservation principle:

word=>

$$\left[ \begin{array}{l} \text{VAL} \left[ \begin{array}{l} \text{SUBJ} [1] \\ \text{SPR} [2] \\ \text{COMPS} [3]n\text{-sent-list} \end{array} \right] \\ \text{ARG-ST} [1] \oplus [2] \oplus [3] \oplus \text{list}(\text{non-canon}) \oplus [4] \\ \text{EXTRA} [4] \end{array} \right]$$

with *n-sent-list*= non sentential list

We thus have different forms for verbs, depending on their argument realization:

*manze* ('eat') in (2a)

$$\left[ \begin{array}{l} \text{LOC} \left[ \begin{array}{l} \text{HEAD} [\text{VFORM } lf] \\ \text{VAL} \left[ \begin{array}{l} \text{SUBJ} \langle [1] \rangle \\ \text{COMPS} \langle > \rangle \end{array} \right] \\ \text{ARG-ST} \langle [1]NP[canon], NP[LOC[2]] \rangle \end{array} \right] \\ \text{NLOC} [\text{SLASH} \{ [2] \}] \end{array} \right]$$

*manz* ('eat') in (3a)

$$\left[ \begin{array}{l} \text{LOC} \left[ \begin{array}{l} \text{HEAD} [\text{VFORM } sf] \\ \text{VAL} \left[ \begin{array}{l} \text{SUBJ} \langle [1] \rangle \\ \text{COMPS} \langle [2] \rangle \end{array} \right] \\ \text{ARG-ST} \langle [1]NP[canon], [2]NP[canon] \rangle \end{array} \right] \end{array} \right]$$

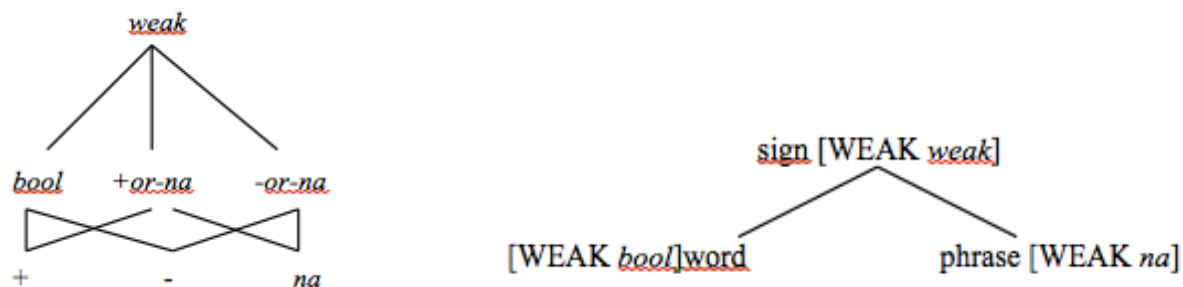
Following Henri 2010, a clausal complement is analysed as extraposed (14): it belongs to an EXTRA feature (Keller 1995, Crysmann 2003, Kay and Sag 2009) and does not appear on the verb COMPS list, hence the verb long form.

- (14) *Mo panse /\*pans (ki) li pe ale.*  
 1SG think.LF/\*SF COMP 3SG PROG go.LF  
 'I think that he will go.'

### 2.2. The weak/strong form distinction

We could use a boolean feature WEAK to distinguish between for *mo*, *to* ('I, you') which are [WEAK+], *mwa*, *twa* ('me, you') which are [WEAK -] and other pronouns which can be underspecified. In this analysis, all subjects would be [WEAK +] and all complements [WEAK -], which is not very intuitive when they are standard phrases.

This is why we redefine WEAK with three values: + or – for words, and non-applicable (*na*) for phrases (Lukasiewicz 1970), with two subtypes : *+or-na*, *-or-na*. It is not a HEAD feature, since it is not shared between a phrase and its head.



We assign [WEAK +] to *mo* (I), *to* (you) and [WEAK -] to *mwa*, *twa*, other personal pronouns (*li* ‘he/she’...) are underspecified ([WEAK *boolean*]). Similarly, we assign [WEAK +] to *ki* (‘what’), *kot* (‘where’), [WEAK -] to *kiete*, *kote* and other wh-words (*kisannla* ‘who’...) are underspecified (*boolean*).

We propose three constraints on headed-phrases that rely on linear precedence: (15a) weak forms cannot be heads: they cannot stand alone (in a head-only phrase), nor be modified (in a head-adjunct phrase); (15b) weak forms must precede the HD-DTR (they can be subjects or fillers); (15c) strong forms must follow the HD-DTR (they can be complements or extraposed):

- (15) a. *headed-phrase* => HEAD-DTR [WEAK *-or-na*]
- b. *headed-phrase* => HEAD-DTR < [WEAK *-or-na*]
- c. *headed-phrase* => [WEAK *+or-na*] < HEAD-DTR

For interrogatives, we use the non local feature WH (Ginzburg & Sag 2001), which marks the filler of wh-interrogative clauses and ensures pied piping.

The fact that different wh- forms occur fronted and *in situ* may be a challenge for movement-based analyses of extraction. In a lexicalist HPSG analysis (Bouma et al 2001, Sag 2011), the filler’s WEAK feature belong to the FILLER-DTR but not to the COMPS list nor to the COMPS-DTR.

## 2.3 Sluices and short answers

We analyse sluices as base-generated fragments (Ginzburg & Sag 2001, Ginzburg 2012), with a salient utterance (SAL-UTT) in the context: they behave externally as clauses but internally as head-only phrases.

*fragment-clause* => *headed-phr* &

$$\left[ \begin{array}{l} \text{CAT HEAD [verb]} \\ \text{SS} \left[ \begin{array}{l} \text{CTXT SAL – UTT} \left\{ \left[ \begin{array}{l} \text{CAT [2]} \\ \text{CONT [IND i]} \end{array} \right] \dots \right\} \end{array} \right] \\ \text{HD – DTR} < \left[ \begin{array}{l} \text{CAT [2] } \neq \text{verb} \\ \text{CONT [IND i]} \end{array} \right] > \end{array} \right]$$

Since wh- words in sluices are HEAD-DTR, they cannot be [WEAK +], and the same holds for personal pronouns in fragment answers. Wh- words used as sluices are the head of a fragment clause (in EXTRA) and follow the matrix verb long form (16a); they differ from their *in situ* uses. In (16b) *kote* is an adverbial complement (in COMPS) hence the interrogative strong form and the verb short form:

- (16) a. *Mo pa kone* *[[kote]<sub>Adv</sub>]<sub>S</sub>*  
           1SG NEG      know.LF *[[where]<sub>Adv</sub>]<sub>S</sub>*

‘I do not know where (he went).’

b. *Pol inn al [kote]<sub>Adv</sub> ?* ‘Paul went where?’

Pol PERF go. SF [where]<sub>Adv</sub>?

### 3. Weak and strong interrogatives in other French based creoles

Some other French-based creoles also have two forms for the interrogative inanimate ‘what’ (Veronique 2007). We gathered data from informants showing that Seychellois has *ki*, which must be subject or extracted (17) and *kwa* must be *in situ* (18).

(17) a. *Ki /\*Kwa ou oule?* ‘What do you want?’

What 2SG want?

b. *Ki’n arive ?* ‘What happened?’

What PERF happen

(18) *Ou oule kwa /\*ki?* ‘You want what?’

2SG want what ?

Our informants pointed a similar alternation for Guadeloupean ‘what’: *ka* must be subject or extracted (19a,c) and *kisa in situ* (19b)

(19) a. *Ka / \*Kisa ou vlé ?* ‘What do you want’

What 2SG want?

b. *Ou vlé kisa /\* ka ?* ‘You want what?’

2SG want what ?

c. *Ka’y /\*Kisa’y pasé ?* ‘What happened?’

What PERF happen

In embedded contexts, they both display the same asymmetry as Mauritian. In full embedded interrogatives, the weak form must be used, and the strong form must be used in sluices.

### Conclusions

We propose to extend the weak/strong distinction from personal pronouns to wh-interrogatives in Mauritian and two other French-based creoles. Like weak pronouns, weak interrogatives cannot be modified, coordinated nor stand alone

In questions, weak forms must be extracted, and strong forms *in situ*, which may be a challenge for movement approaches to questions (Chomsky 1977); they are naturally handled in HPSG lexicalist analyses of extraction (Bouma et al 2001, Sag 2011).

The fact that the weak form must be used in full clauses, and the strong form in sluices and fragment answers, is also a challenge for deletion-based approaches to ellipsis (Merchant 2001, 2004). They are easily handled using the fragment-based analysis of Ginzburg et Sag 2001, Sag and Nykiel 2011, Ginzburg 2012.

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