

Sluicing in Mauritian: A Fragment-Based Analysis

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Abstract Sluicing, since Ross 1969, has been a subject of syntactic debate: is the sluice a clause with full syntactic structure (Chung et al. 1995, Merchant 2001, among others) or just a reduced fragment (Ginzburg & Sag 2000, Culicover & Jackendoff 2005, among others)? We uncover some syntactic properties of sluices in Mauritian, a French-based creole, arguing for a fragment-based analysis.

Keywords sluicing · ellipsis · *wh*-word · creole · fragment · pronoun

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1 Introduction

1.1 What is Sluicing?

Sluicing is the name of a type of elliptical clause, with incomplete syntax and only a *wh*-phrase remnant, the full interpretation of which can be recovered from some antecedent in the context (Ross 1969). Sluicing can appear in the form of reduced interrogatives (1) or as short questions (2).

- (1) a. John drinks something, but I don't know [what].
 (Ross 1969)
 b. Someone solved the problem, but [who] is not clear.
- (2) a. Speaker 1: John's been drinking again?
 Speaker 2: What? (Culicover & Jackendoff 2005:47)
 b. Speaker 1: I'm leaving soon.
 Speaker 2: When?

Sluicing can also occur as a reverse sluice, that is, in a construction where the *wh*-phrase precedes the full clause (3) or as an exophoric sluice, when the antecedent refers to the extralinguistic utterance context (4). Sprouting is another subtype of sluicing, where the *wh*-word has no explicit correlate in the matrix clause (or the preceding turn) (2a, 5).

(3) I don't know [what], but he ate something bad.

(4) [*Pointing in a shop*] "Could you tell me [how much]?"

(5) John will go to Paris, but I don't know [when].

1.2 Two Syntactic Analyses of Sluices

The syntax of sluicing has been a matter of considerable debate and one distinguishes two main analyses:

- A deletion analysis (Ross 1969, Merchant 2001, among others)
- A fragment analysis (Ginzburg & Sag 2000, Culicover & Jackendoff 2005, among others)

Under the deletion analysis, an operation deletes the sentence (S or IP) that follows the *wh*-word (6). Since the sluice has a complete underlying structure, its semantics is directly computed from the syntax.

(6) John drinks something, but I don't know [what
he's been drinking]_S.

Under the fragment analysis, the sluice is a base-generated fragment, which behaves externally as a clause (S or IP) but internally as a phrase (NP or DP) (7). The semantics is computed using information from the context.

(7) John drinks something, but I don't know [[what]_{NP}]_S.

Several arguments have been given in favour of the sentential status of sluices, which is common to both lines of analysis. As noted

by Ross (1969), they occur after verbs that only take sentential complements, like *wonder* (8), and trigger singular agreement in subject position, unlike nominal subjects (9).

- (8) a. John is meeting someone tonight, I wonder [who].
 b. I wonder [who John is going to meet tonight].
 c. *I wonder the answer/the person ...
- (9) a. Some of these problems are solvable, but [which problems] is not obvious.
 b. These problems are/*is not obvious.

As noted by Culicover & Jackendoff (2005:269), they trigger English particle placement like clausal complements (10b) and not like phrasal ones (10c).

- (10) a. He did something illegal but I never found out [what]/*[what] out.
 b. I never found out [what he did]/*[what he did] out.
 c. He never found out [the answer]/[the answer] out.

The arguments in favour of a full-fledged syntactic structure of sluices, under a deletion analysis, on the other hand, seem to be weaker.

As noted by Ross (1969), the pro-forms are not necessarily the same in the antecedent and in the sluice. For example, one has to account for “sloppy” identity: the sluice means ‘how to crane my neck’ in (11a), and ‘how to say I’m sorry’ in (11b), as well as for ‘vehicle change’ (Sag & Nykiel 2011): the sluice means ‘who is following you’ in (11c).

- (11) a. Paul knows how to crane his neck but I don’t know [how].
 (Ross 1969)
 b. I know how to say I’m sorry, and Bill knows [how], too.
 c. Speaker 1: Someone is following me.
 Speaker 2: I wonder [who].

As noted by Hoeksema (2014), the Dutch *wh*-pronoun *waar* ‘what’ is also relevant here, as an R-pronoun which occurs to the left of preposition: it is obligatory in a *wh*-interrogative clause with preposition stranding (12a), but cannot appear in the corresponding sluice (12b), where the ordinary *wh*-pronoun *wat* ‘what’ appears.

- (12) a. Marie kijkt ergens naar, maar ik weet niet
 Marie looks somewhere at, but I know not
 waar/*wat zij naar kijkt.
 what.R/*what she at looks
 ‘Marie looks at something but I don’t know at what she looks.’
- b. Marie kijkt ergens naar, maar ik weet niet
 Marie looks somewhere at, but I know not
 wat/*waar.
 what/*what.R
 ‘Marie looks at something, but I don’t know at what.’

As noted by Ross (1969) and Chung et al. (1995), island constraints, which apply to interrogative clauses, do not apply to sluices. (13) illustrates the Complex Noun Phrase Constraint, and (14), the Coordination Structure Constraint.

- (13) a. Bo talked to the people who discovered something, but we don’t know [what].
 b. *Bo talked to the people who discovered something, but we don’t know [what Bo talked to the people who discovered].
- (14) a. Terry wrote an article about Lee and a book about someone else from East Texas, but we don’t know [who].
 b. *Terry wrote an article about Lee and a book about someone else from East Texas, but we don’t know [who Terry wrote an article about Lee and a book about].

Merchant (2001) proposes that ellipsis may “repair” islands, but in a fragment analysis (7), the lack of island effects is actually predicted

since there is no underlying syntactic structure for them to apply to.

Case assignment in sluices has been considered an argument in favour of an underlying verb, but Jacobson (2016) argues that, in fact, deletion-based approaches face intrinsic problems accounting for this. As pointed out by Ross (1969), in German, the sluice must be accusative if the antecedent verb is *sehen* ‘see’ (15a), and dative with an antecedent verb like *schmeicheln* ‘flatter’ (15b), which are known as “connectivity” effects. This is why Ginzburg & Sag (2000) and Culicover & Jackendoff (2005) in their fragment analysis proposed mechanisms for ensuring syntactic parallelism constraints between the fragment head (*wen* or *wem* ‘who’) and its salient correlate (*jemanden* or *jemandem* ‘someone’) (see section 3 below).

- (15) a. Er hat jemanden gesehen, ich weiss nicht
 he has someone-ACC seen, I know not
 wen/*wem.
 who-ACC/*DAT
 ‘He has seen someone, I don’t know who.’
- b. Er will jemandem schmeicheln, ich weiss nicht,
 he wants someone-DAT flatter, I know not
 wem/*wen.
 who-DAT/*ACC
 ‘He wants to flatter someone, I don’t know who.’

However, as pointed out by Kim (2015), case-marking is not obligatory in Korean direct sluices, be it syntactic (16a) or semantic case (16b).

- (16) a. Speaker 1: Mimi-ka nwukwunka-lul manna-ss-e.
 Mimi-NOM someone-ACC meet-PST-DECL
 ‘Mimi met someone.’
 Speaker 2: Nwukwu?/Nwukwu-lul?
 who/who-ACC
- b. Speaker 1: Mimi-ka nwukwunka-lopwuthe senmwul-ul
 Mimi-NOM someone-SRC gift-ACC
 pat-ass-e.
 receive-PST-DECL
 ‘Mimi received a gift from someone.’
 Speaker 2: Nwukwu?/Nwukwu-lopwuthe?
 who/who-SRC
 ‘Who?/From whom?’

Preposition omission has been taken as another argument for a syntactic analysis of the sluice with an underlying full clause. According to Merchant’s (2001) generalization, preposition omission under sluicing is possible only in those languages that allow for preposition stranding in regular *wh*-interrogatives (e.g., English, Norwegian). In this approach, there are two sources for (17a), one with preposition stranding (and preposition deletion) (17b), one with pied-piping (17c).

- (17) a. Peter was talking with someone, I don’t know who/with whom.
 b. I don’t know who Peter was talking with.
 c. I don’t know with whom Peter was talking.

However, counterexamples exist in many languages, which allow preposition omission in sluices, but not preposition stranding: for example, Polish (Sag & Nykiel 2011), Romance (Fernández et al. 2007), Indonesian (Sato 2011), and Korean (Kim 2015). French allows for preposition omission in sluices (18a), but not in full interrogatives (18b). Notice that an alternative source, with clefting, as proposed

by van Craenenbroeck (2010), is not possible in this case (18c).

- (18) a. Paul travaille sur quelque chose, je ne sais pas (sur) quoi.
 ‘Paul works on something, I don’t know (on) what.’
 b. Je ne sais pas sur quoi il travaille/*quoi il travaille sur.
 ‘I don’t know with what he works/what he works with.’
 c. *Paul travaille sur quelque chose, je ne sais pas quoi c’est/
 c’est quoi.
 ‘Paul works on something, I don’t know what it is/it is what.’

Thus, a simple deletion-under-identity approach seems to face more problems than it solves. We show that Mauritian data favour a sentential analysis, while bringing more arguments against a deletion approach.

2 Mauritian Sluices

Mauritian is a French-based creole spoken in Mauritius, with no official status and a recent written form (Hookoomsing 2004, Carpooran 2011). We rely on Baker 1972, Henri 2010, Syea 2012, and Hassamal 2017 for its clausal syntax.

Little work has been done on ellipsis in creoles, with the exception of Costa et al. 2012, and we do not know of any on Mauritian. We rely on fieldwork surveys and on the few corpora available, such as the works of the Mauritian writer Dev Virahsawmy (<https://boukiebanane.com/>).

2.1 Verb-Form Alternation and Sluicing

The conjugation of Mauritian verbs displays two alternating forms: a long form and a short form (Baker 1972), with some 30% of verbs exhibiting syncretism. This morphological alternation (Bonami et al. 2011) depends on syntactic and discursive factors (Henri & Abeillé 2008, Henri 2010). For example, the short forms *manz* ‘eat’ and *koz* ‘speak’ are used before a canonical phrasal complement (19) and the long forms *manze* ‘eat’ and *koze* ‘speak’ are used otherwise (20)

(Baker 1972, Henri 2010).¹

- (19) a. Mo'nn manz [pom] yer.
 1SG-PERF eat.SF apple
 'I ate apples yesterday.'
- b. Mo koz [ek Pol].
 1SG speak.SF with Pol
 'I speak with Pol.'
- (20) a. Mo'nn manze/*manz yer.
 1SG-PERF eat.LF/*SF yesterday
 'I ate yesterday.'
- b. Li'nn koze/*koz yer.
 3SG-PERF speak.LF/*SF yesterday
 'He spoke yesterday.'

In *wh*-interrogatives, the *wh*-phrase is usually extracted in a left-peripheral position (21) and the long forms *manze* 'eat' and *koze* 'speak' are used. But it can also occur in situ, without an echo interpretation (Syea 2017) and the short forms *manz* 'eat' and *koz* 'speak' are used (22).

¹The long form can also be used with a postverbal phrasal complement in the case of verum focus (Henri 2010). We ignore it here.

- (i) Me Pol inn MANZE pom-la ! 'But Paul DID eat the apple!'

Some postverbal adverbs also trigger the short form and can be analysed as complements (Hassamal 2017, Hassamal et al. 2019):

- (ii) Pol dans bien.
 Paul dances.SF well
 'Paul dances well.'

- (21) a. [Ki gato] to'nn manze/*manz yer ?
 which cake 2SG-PERF eat.LF/*SF yesterday
 'Which cake did you eat yesterday?'
- b. [Ek kisannla] to'nn koze/*koz ?
 with whom 2SG-PERF speak.LF/*SF
 'With whom did you speak?'
- (22) a. To'nn manz [ki gato] ?
 2SG-PERF eat.SF which cake
 Lit. 'You ate which cake?'
- b. To'nn koz [ek kisannla] ?
 2SG-PERF speak.SF with whom?
 Lit. 'You spoke with whom?'

Interestingly, the long form must occur before a sentential complement (23).

- (23) a. Mo panse/*pans [(ki) li pe ale].
 1SG think.LF/*SF (that) 3SG PROG go
 'I think that (s)he is leaving.'
- b. Mo pa trouve/*trouv [si Pol pe koze].
 1SG NEG see.LF/*SF if Paul PROG speak
 'I do not see whether Paul is speaking.'

Like other subordinate clauses, a *wh*-interrogative clause triggers the long form of the main verb (24a), unless preceded by a phrasal complement (24b). On the other hand, if the phrasal complement follows the sentential complement, the matrix verb is in long form (24c). This is why Henri (2010) analyzes sentential complements as extraposed, and triggering the extraposition of following complements as well.

- (24) a. Pol inn manz gato, me mo pa'nn trouve/*trouv
 Paul PERF eat.SF cake, but 1SG NEG-PERF see.LF/*SF
 [ki gato li'nn manze].
 which cake 3SG-PERF eat.LF
 'Paul has eaten a cake, but I did not see which cake he ate.'
- b. Pol inn manz gato, mo demann [mwa] [ki gato
 Paul PERF eat.SF cake, 1SG ask.SF 1SG which cake
 li'nn manze].
 3SG-PERF eat.LF.
 'Paul has eaten a cake, I wonder which cake he ate.'
- c. Pol inn manz gato, mo demande/*demann [ki
 Paul PERF eat.SF cake, 1SG ask.LF/*SF which
 gato li'nn manze] [ar tou dimounn].
 cake 3SG-PERF eat.LF to everybody.
 'Paul has eaten a cake, and I ask everyone which cake he ate.'

Interestingly, a sluice also triggers the long form of the main verb (25a), unless preceded by another complement (25b).

- (25) a. Pol inn manz gato, me mo pa'nn trouve/*trouv
 Paul PERF eat cake, but 1SG NEG-PERF see.LF/*SF
 [ki gato].
 which cake
 'Paul has eaten a cake, but I did not see which cake.'
- b. Pol inn manz gato, me mo demann/*demande
 Paul PERF eat cake, but 1SG ask.LF/*SF
 [mwa] [ki gato].
 1SG which cake
 'Paul has eaten a cake, but I wonder which cake.'

Hence, the sluice behaves like a clausal complement.

2.2 *Wh*-Words and Sluicing

As in French, most Mauritian *wh*-words can occur fronted (26) or *in situ* (27), for example, *kisannla* ‘who’, *kouma* ‘how’ and *kan* ‘when’, without an echo interpretation (Syea 2012).

- (26) a. *Kisannla to’nn trouve ?*
 who 2SG-PERF see.LF
 ‘Who did you see?’
 b. *Kan to pou manze ?*
 when 2SG FUT eat.LF
 ‘When will you eat?’
- (27) a. *To’nn trouv kisannla ?*
 2SG-PERF see.SF who?
 ‘Who did you see?’
 b. *To pou manze kan ?*
 2SG FUT eat.LF when
 ‘When will you eat?’

However, for the inanimate ‘what’, two forms, *ki*² and *kiete*, occur in a complementary distribution: *ki* must be fronted (28a), while *kiete* appears *in situ* (28b) or in isolation (28c).

- (28) a. *Ki/*Kiete to pou manze ?*
 what 2SG FUT eat.LF
 ‘What will you eat?’

²There are other uses for the form *ki* in Mauritian (Alleesaib 2008, Véronique 2007): the determiner (‘which’) (i), the complementizer (‘that’) (ii), and the discourse particle (‘what?!’) (iii).

- (i) *Ki gato to pou manze ?* ‘Which cake will you eat?’
 (ii) *Li’nn dir ki li pou vini.* ‘He said that he will come.’
 (iii) Speaker 1: *Mo’nn aret fime.* ‘I stopped smoking.’
 Speaker 2: *Ki ?!!* ‘What?!’

- b. To pou manz kiete/*ki ?
 2SG FUT eat.SF what
 ‘You will eat what?’
- c. Speaker 1: Pol inn manz brinzel.
 Paul PERF eat.SF eggplant
 ‘Paul ate eggplant.’
 Speaker 2: Kiete/#Ki ? ‘What?’

Similarly, the locative ‘where’ has several forms in Mauritian: *kot*, *kote* and *kotsa*. *Kot* and *kote* are in complementary distribution: *kot* must be extracted (29a), while *kote* must be in situ (29b) or in isolation (29c).

- (29) a. Kot/*Kote to pou ale ?
 where 2SG FUT go.LF
 ‘Where will you go?’
- b. To pou al kote/*kot ?
 2SG FUT go.SF where
 ‘You will go where?’
- c. Speaker 1: Pol inn al deor.
 Paul PERF go.SF abroad
 ‘Paul went abroad.’
 Speaker 2: Kote/*Kot ? ‘Where?’

The third form *kotsa* is unconstrained and can occur as fronted (30a), in situ (30b) or in isolation (30c).

- (30) a. Kotsa to pou ale ?
 where 2SG FUT go.LF
 ‘Where will you go?’
- b. To pou al kotsa ?
 2SG FUT go.SF where
 ‘You will go where?’

- c. Speaker 1: Pol inn al deor.
 Paul PERF go.SF abroad
 'Paul went abroad.'
 Speaker 2: Kotsa ? 'Where?'

Interestingly, only the in situ forms, *kiete* 'what' (31a) and *kote* 'where' (31b), are allowed in sluicing, whereas only the fronted forms *ki* (32a) and *kot* (32b) are allowed in full subordinate clauses.

- (31) a. Pol inn manz kitsoz, me mo pa'nn trouve
 Paul PERF eat.SF something, but 1SG NEG-PERF see.LF
 [kiete]/*[ki].
 what
 'Paul ate something, but I didn't see what.'
- b. To'nn ferm li dan enn kaso, mo pa kone
 2SG-PERF close.SF 3SG in IND jail, 1SG NEG know.LF
 [kote]/*[kot].
 where
 'You locked him/her in a jail, I do not know where.'
 (Dev Virahsawmy, *Toufann*, Act 1, Scene 7)
- (32) a. Mo pa'nn trouve [ki/*kiete Pol inn manze].
 1SG NEG-PERF see.LF what Paul PERF eat.LF
 'I didn't see what Paul ate.'
- b. Mo pa kone [kot/*kote to'nn ferme li].
 1SG NEG know where 2SG-PERF lock 3SG
 'I do not know where you locked him/her.'

While use of the matrix verb long form with sluices is fully parallel to what we find with clausal complements, the data above challenge a deletion analysis with an underlying clause with a fronted *wh*-word (6). An underlying structure with a *wh*-word is not appealing, since, as English, Mauritian does not allow for an embedded interrogative clause with an in situ *wh*-element (33), outside echo uses.

- (33) a. *Mo pa'nn trouve, Pol inn manz kiete.
 1SG NEG-PERF see.LF Paul PERF eat.SF what
 Intended: 'I didn't see what Paul has eaten.'
- b. *Mo pa kone, Pol inn al kote.
 1SG NEG know.LF, Paul PERF go.SF where
 Intended: 'I do not know where Paul went.'

Another tentative deletion analysis could be based on an underlying cleft construction, as proposed by van Craenenbroeck (2010) for Dutch. It is true that clefts only allow for strong *wh*-forms (34).

- (34) a. Se kiete/*ki ki'nn kase ?
 it what that-PERF break.LF
 'It is what that has broken?'
- b. Se kote/*kot ki to pe ale ?
 it where that 2SG PROG go.LF
 'It is where that you are going?'

But this line of analysis would not apply to indirect sluices:

- (35) a. *Mo pa'nn trouve, se kiete.
 1SG NEG-PERF see.LF it what
 Intended: 'I didn't see what it is.'
- b. *Mo pa kone, se kote.
 I NEG know it where
 Intended: 'I don't know where it is.'

It would also leave unexplained the possibility of preposition omission in sluices (36a), which is not possible in clefts (36c) nor in full *wh*-clauses (36b). Like French, Mauritian is a non-preposition stranding language (36d) (see also Sag & Nykiel 2011, Nykiel 2013 for a criticism of Merchant's (2001) generalization).

- (36) a. Pol inn koz ek enn kamarad, me mo pa
 Paul PERF speak.SF with IND friend, but 1SG NEG
 kone (ek) kisannla.
 know.LF (with) who.
 ‘Paul has spoken with a friend but I do not know (with)
 whom.’
- b. Mo pa kone *(ek) kisannla li’nn koze.
 1SG NEG know.LF *(with) whom 3SG-PERF speak.LF
 ‘I do not know with whom (s)he spoke.’
- c. Se *(ek) kisannla ki li’nn koze ?
 it *(with) whom that 3SG-PERF speak.LF
 ‘It is with whom that (s)he spoke?’
- d. *Kisannla Pol inn koz/koze ek ?
 who Paul PERF speak.SF/LF with
 ‘Who did Paul speak with?’

We thus conclude that the hybrid syntactic behaviour of Mauritian embedded sluices raises a challenge for syntactic analysis: on the one hand, they behave like clauses, triggering the matrix verb’s long form; on the other hand, they only comprise in situ *wh*-words, unlike full embedded clauses. This may be a problem for deletion-based analyses.³ We show how it can be accounted for in a fragment-based approach.

³As noted by a reviewer, a deletion analysis could use extra prosodic constraints. However, it is not the case that *ki* ‘what’ and *kot* ‘where’ are always sentence initial (i), nor are *kiete* ‘what’ and *kote* ‘where’ always sentence-final (ii), and the sluice is not necessarily preceded by a prosodic boundary. (We do not consider prosody any further here.)

(i) Me ki li’nn manze ? ‘But what did he eat?’

(ii) Li’nn manz kiete exacteman ? ‘What exactly did he eat?’

3 An HPSG Analysis

To reconcile the apparently contradictory properties of Mauritian sluices, we use Ginzburg & Sag's (2000) approach, which includes fragment-like analyses for sluices and short answers: on this view, fragments are unary clauses with a full sentential meaning but a minimal syntactic structure reduced to a phrase. Thus, it is expected that sluices behave externally as clauses but internally as phrases:

- (37) a. Mo trouve [[kisannla]_{NP}]_S.
 1SG see.LF who
 'I see who (will come).'
- b. Mo pa kone [[kote]_{Adv}]_S.
 1SG NEG know.LF where
 'I do not know where (he went).'
- c. To'nn trov [kisannla]_{NP}?
 2SG-PERF see.SF who
 'You saw who?'
- d. Pol inn al [kot]_{Adv}?
 Paul PERF go.SF where
 'Paul went where?'

Notice that *wh*-words used as sluices in (37a,b) differ from their ordinary use. When they are ordinary nominal or adverbial complements, they trigger the short form of the verb (37c,d).

3.1 Sluices as Fragments

Ginzburg & Sag (2000) rely on a cross-classification of clauses. Clauses come in different types (e.g., declarative or interrogative), and with different constituents (e.g., with a verbal head or not), as in figure 1.

Like verbal clauses, fragments may be declarative (for short answers) or interrogative (for short questions and sluices). Unlike full clauses, they are head-only clauses with a non-verbal head-daughter (DTRS) and a propositional content (CONT) inherited from the context (CTXT). Despite their non-verbal head, they have a verbal HEAD

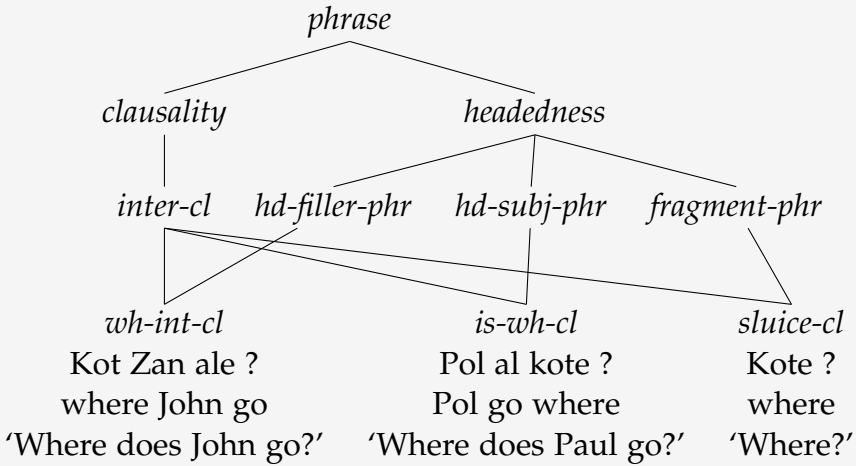


Figure 1 Cross-classification of clauses

feature, like verbal clauses. We follow Ginzburg (2012) for the fragment’s content: the propositional content is that of the maximal question under discussion (MAX-QUD), in which a variable x associated with the bare *wh*-phrase substitutes for the variable associated with its antecedent and is then abstracted away:

$$(38) \text{ fragment-phr} \Rightarrow \left[\begin{array}{l} \text{CAT} [\text{HEAD } verb] \\ \text{CONT} [\lambda x. [p([x])] ([3])] \\ \text{CTXT} \left[\begin{array}{l} \text{MAX-QUD} [?\exists x p(x)] \\ \text{SALIENT-UTT} \left\{ \left[\begin{array}{l} \text{CAT } [2] \\ \text{CONT} [\text{INDEX } i] \end{array} \right] \right\} \end{array} \right] \\ \text{DTRS} \left\langle \left[\begin{array}{l} \text{CAT } [2] [\text{HEAD} \neq verb] \\ \text{CONT } [3] [\text{INDEX } i] \end{array} \right] \right\rangle \end{array} \right]$$

A sluice-clause inherits from interrogative clauses and from fragment-phrases (see figure 1):

$$(39) \text{ sluice-cl} \Rightarrow \text{interrog-cl} \ \& \ \text{fragment-phr} \\ \left[\text{DTRS} \left\langle [\text{NON-LOC } [\text{WH } \{ [\text{INDEX } i] \}]] \right\rangle \right]$$

The head-daughter is coindexed with a salient constituent (SAL-UTT),

deor ‘abroad’ in (40), *kitsoz* ‘something’ in (41), with which it shares its syntactic features (CAT), hence the parallelism constraints.

- (40) Speaker 1: Pol inn al deor.
 Paul PERF go.SF abroad
 ‘Paul went abroad.’
 Speaker 2: Kote/*Kot? ‘Where?’
- (41) Pol inn manz kitsoz, me mo pa’nn trouve
 Paul PERF eat.SF something, but 1SG NEG-PERF see.LF
 kiete/*ki.
 what
 ‘Paul ate something, but I didn’t see what.’

As in English, the head-daughter of the fragment may be prepositional (42a), nominal (42b) or adverbial (42c). As the propositional content is inherited from the context (the previous clause or previous turn), they are interpreted as full clauses: ‘With whom did Paul speak?’ (42a), ‘Who will come?’ (42b), ‘How many apples did Paul buy?’ (42c).

- (42) a. Speaker 1: Pol inn koz ek enn kamarad.
 Paul PERF speak.SF with IND friend
 ‘Paul spoke with a friend.’
 Speaker 2: (Ek) kisannla? ‘(With) whom?’
- b. Speaker 1: Bann dimounn pe vini.
 PLUR people PROG come.LF
 ‘Some people are coming.’
 Speaker 2: Kisannla? ‘Who?’
- c. Speaker 1: Pol inn aste pom.
 Paul PERF buy.SF apple
 ‘Paul bought apples.’
 Speaker 2: Komie? ‘How many?’

In this analysis, preposition omission is handled as follows: the salient

constituent which serves as correlate can be the whole PP (*ek enn kamarad*) or the internal NP (*enn kamarad*), hence the two possible fragments in (42a).

The sharing of syntactic features ([2] in (38)) between the sluice and its correlate ensures syntactic parallelism. In case-marking languages, connectivity effects (section 1) are handled by the sharing of case features, which belong to CAT.

The sharing of syntactic features also prevents voice mismatches. In Mauritian, as in other languages, sluicing is out, as in (43b) where the sluice should be interpreted as passive with an active antecedent clause. Under our analysis, the fragment's daughter is a PP and its syntactic features fail to unify with those of the correlate *kikenn* 'someone', which is an NP in (43b).

- (43) a. Kikenn inn bat Zan, me mo pa kone [par
 Someone PERF hit John, but 1SG NEG know.LF by
 kisannla li'nn gagn bate].
 whom 3SG-PERF get.SF hit.LF
 'Someone hit John, but I don't know [by whom he was
 hit].'
- b. *Kikenn inn bat Zan, me mo pa kone [par
 someone PERF hit.SF John, but 1SG NEG know.LF by
 kisannla].
 whom.
 Lit. 'Someone hit John, but I don't know [by whom].'

3.2 An Analysis of Verb-Form Alternation

As is standard in HPSG, we use a *VFORM* feature for verb forms (Sag et al. 2003). To account for verb alternation, we rely on two constraints on verb forms, leaving aside Verum Focus (Henri 2010): the short form (SF) requires a non-empty list (*nelist*) of complements (COMPS) while an empty list (*elist*) of complements triggers the long form (LF); VAL stands for VALENCE:

(44) Lexical constraints on verbs:

$$\begin{aligned} [\text{HEAD VFORM } SF] &\Rightarrow [\text{VAL COMPS } nelist] \\ [\text{VAL COMPS } elist] &\Rightarrow [\text{HEAD VFORM } LF] \end{aligned}$$

Following Henri 2010, a clausal complement is analysed as extraposed: it belongs to an EXTRA feature (Keller 1995, Crysmann 2003, Kay & Sag 2009) and does not appear on the verb COMPS list, hence the verb long form (46c). The same analysis applies to indirect sluices.

We use a SLASH feature to record which element has been extracted, and its value must unify with that of the filler in a long-distance dependency (Pollard & Sag 1994). Using Bouma et al.'s (2001) lexical analysis of extraction, words obey an argument conservation principle (45): an extracted complement is typed as non-canonical on the argument structure (ARG-ST) of the verb. It is not realized locally, and thus does not belong but to the list of complements: the verb with an extracted complement has thus an empty COMPS list, hence the long form (46b).

(45) Argument conservation principle:

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

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

A verb lexeme thus has different forms, depending on the realization of its syntactic arguments:

(46) a. koz 'speak' (no extraction)

$$\left[\begin{array}{l} \text{HEAD } [\text{VFORM } SF] \\ \text{VAL } \left[\begin{array}{l} \text{SUBJ } \langle \boxed{1} \rangle \\ \text{COMPS } \langle \boxed{2} \rangle \end{array} \right] \\ \text{ARG-ST } \langle \boxed{1} \text{ NP}[\text{canon}], \boxed{2} \text{ PP} \left[\begin{array}{l} \text{canon} \\ \text{FORM } ek/avek \end{array} \right] \rangle \end{array} \right]$$

- b. koze ‘speak’ (extracted complement)

HEAD [VFORM LF]	}
VAL [SUBJ ⟨[1]⟩ COMPS ⟨⟩]	
ARG-ST ⟨[1] NP[<i>canon</i>], [2] PP [gap FORM <i>ek/avek</i>]⟩	
SLASH { [2] }	

- c. kone ‘know’ (with a clausal complement)

HEAD [VFORM LF]
VAL [SUBJ ⟨[1]⟩ COMPS ⟨⟩]
ARG-ST ⟨[1] NP[<i>canon</i>], [2] S⟩
EXTRA { [2] }

3.3 Weak and Strong *wh*-Words

The observation that different *wh*-forms are used fronted and in situ may be a challenge for movement-based analyses of extraction (Chomsky 1977), but not necessarily for surface-oriented approaches (Sag & Fodor 1996).

We consider that the weak/strong distinction applies to Mauritian. Weak forms are not necessarily clitics (Cardinaletti & Starke 1999), but they cannot stand alone and have a more constrained distribution than strong forms. We consider *kot* ‘where’ and *ki* ‘who’ to be weak, since they cannot occur in isolation, and *kote* ‘where’ and *ki-ete* ‘what’ to be strong, while other *wh*-words (*kotsa* ‘where’, *kisannla* ‘who’, ...) are underspecified.

We consider that words can be weak, strong or underspecified, but that the distinction is not relevant for phrases. We thus define a three-valued WEAK feature, which is *boolean* (+ or –) for words and *non-applicable* (*na*) for phrases, as seen in figure 2.

We consider a general constraint that prevents [WEAK +] elements from being heads: this applies to fragments which are head-only phrases, and thus to sluices and fragment answers.

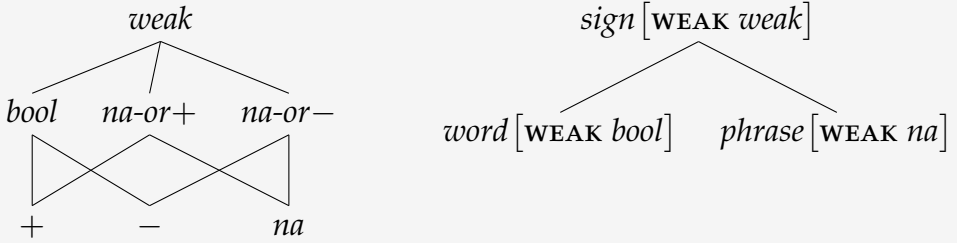


Figure 2 The values for WEAK

- *headed-phr* \Rightarrow HEAD-DTR [WEAK *na-or-*]

We consider additional constraints on Mauritian: weak forms can be fillers, while strong forms cannot.⁴ Notice that weak forms can also be subjects (47), and that with pied-piping, the strong forms are used, since they are complements of the preposition (48).

- (47) Ki/*Kiete pase la ?
 what happen.LF here
 ‘What happened here?’
- (48) a. To’nn malad akoz kiete/*ki ?
 2SG-PERF sick because what
 ‘You fell sick because of what?’
- b. Akoz kiete/*ki to’nn malad ?
 because what 2SG-PERF sick
 ‘Because of what you fell sick?’

⁴Mauritian personal pronouns also display a weak/strong distinction (Syea & Véronique 2000): *mo* ‘I’ and *to* ‘you’ must be subjects (i), whereas *mwa* ‘me’ *twa* ‘you’ must be complements (ii) or occur in isolation (iii).

- (i) Pol inn trouv twa/*to. ‘Paul has seen you.’
- (ii) Mo /*Mwa pou vini. ‘I will come.’
- (iii) Speaker 1: Kisannla pou vini ? ‘Who will come?’
 Speaker 2: Mwa/*Mo. ‘Me.’

The weak forms *ki* ‘what’ and *kot* ‘where’ are [WEAK +] and the strong forms *kiete* ‘what’ and *kote* ‘where’ are [WEAK –] while other interrogatives are underspecified [WEAK *bool*].

In HPSG, interrogative words have a specific non-local feature (Pollard & Sag 1994), which marks interrogative clauses and ensures pied piping. Following Ginzburg & Sag (2000), we also use the non-local WH feature. Simplified lexical entries for *kot/kote* ‘where’ are in (49).

- (49) *kot* ‘where’
- $$\left[\begin{array}{l} \text{CAT [WEAK +]} \\ \text{CONT } \boxed{1} \left[\begin{array}{l} \text{IND } i \\ \text{RELS } \left\{ \left[\begin{array}{l} \textit{rel-place} \\ \text{ARG } i \end{array} \right] \right\} \end{array} \right] \\ \text{NON-LOC [WH } \{\boxed{1}\}] \end{array} \right]$$
- kote* ‘where’
- $$\left[\begin{array}{l} \text{CAT [WEAK –]} \\ \text{CONT } \boxed{1} \left[\begin{array}{l} \text{IND } i \\ \text{RELS } \left\{ \left[\begin{array}{l} \textit{rel-place} \\ \text{ARG } i \end{array} \right] \right\} \end{array} \right] \\ \text{NON-LOC [WH } \{\boxed{1}\}] \end{array} \right]$$

Subjects cannot be [WEAK –] (50a), while complements and extra-posed constituents cannot be [WEAK +] (50b,c). Clefted elements, as other complements, must be strong.

- (50) a. *hd-subj-phr* ⇒ SUBJ-DTR [WEAK *na-or+*]
 b. *hd-comps-phr* ⇒ COMPS-DTR list ([WEAK *na-or–*])
 c. *hd-extra-phr* ⇒ EXTRA-DTR list ([WEAK *na-or–*])

Wh-fillers, on the other hand, cannot be [WEAK –]. We consider it a constraint on interrogative clauses, while it may be a more general constraint on fillers:

- (51) *wh-inter-cl* ⇒ FILLER-DTR [WEAK *na-or+*]

Since a full-fledged grammar of Mauritian is beyond the scope of

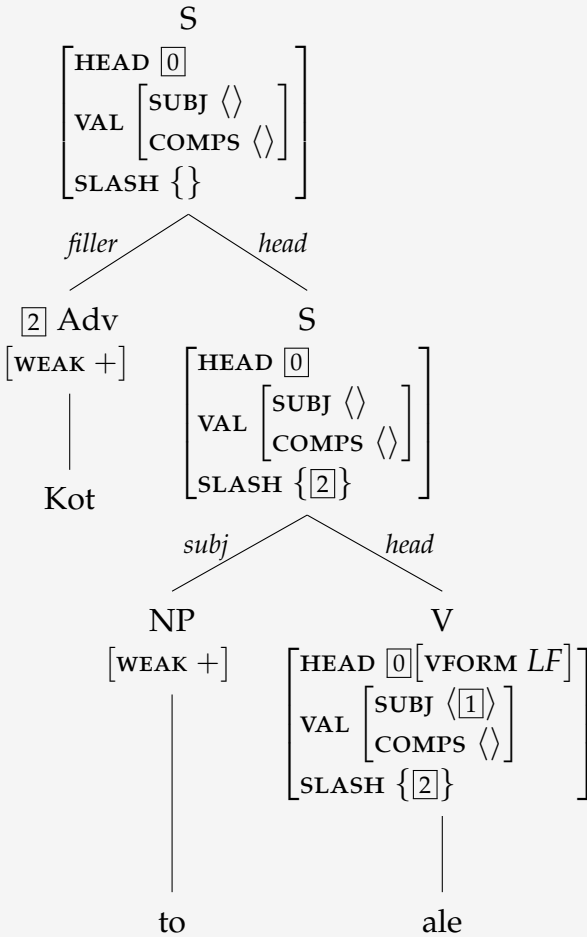


Figure 3 *Kot to ale* ? 'Where are you going?'

this paper, we provide only a few examples. Figure 3 shows an interrogative clause with a fronted *wh*-word: *Kot to ale ?* ‘Where are you going?’. This uses *hd-filler-phr* (figure 1), and the filler *kot* ‘where’ is [WEAK +]. It also uses *hd-subj-phr* and the subject *to* ‘you’ is [WEAK +], and the verb is not followed by a canonical complement (its COMPS list is empty), hence the long form of the verb *ale* ‘go’. Following Bouma et al. (2001), there is no empty category and the extracted complement is noted in the SLASH value of the verb, and it is percolated up the syntactic tree until it is unified with the local features of the filler.

Figure 4 shows an interrogative clause with an in situ *wh*-word: *To al kote?* ‘You go where?’. As in figure 3, it uses *hd-subj-phr* and the subject word *to* ‘you’ is [WEAK +]. It also uses *hd-comps-phr* and the complement (*kote* ‘where’) is [WEAK –]. The verb is followed by a complement (its COMPS list is not empty), hence the short form of the verb *al* ‘go’.

Figure 5 shows a declarative clause with a sluice complement: *Zan kone kote* ‘John knows where’. As a sentential complement, the sluice is extraposed. As a head-only phrase, its head cannot be weak, and the *wh*-word *kote* ‘where’ is [WEAK –]. The matrix verb is not followed by a canonical complement, and its form is long: *kone* ‘know’.

4 Conclusion

We have shown that Mauritian sluices exhibit hybrid syntactic properties. On the one hand, they do not trigger the short form of the matrix verb, like clausal complements and unlike phrasal complements. On the other hand, they do not have the internal structure of an interrogative clause and only comprise in situ *wh*-words. These properties challenge a syntactic deletion analysis of sluices. We show that they can be handled by a HPSG grammar following Ginzburg & Sag’s (2000) fragment-like analysis.

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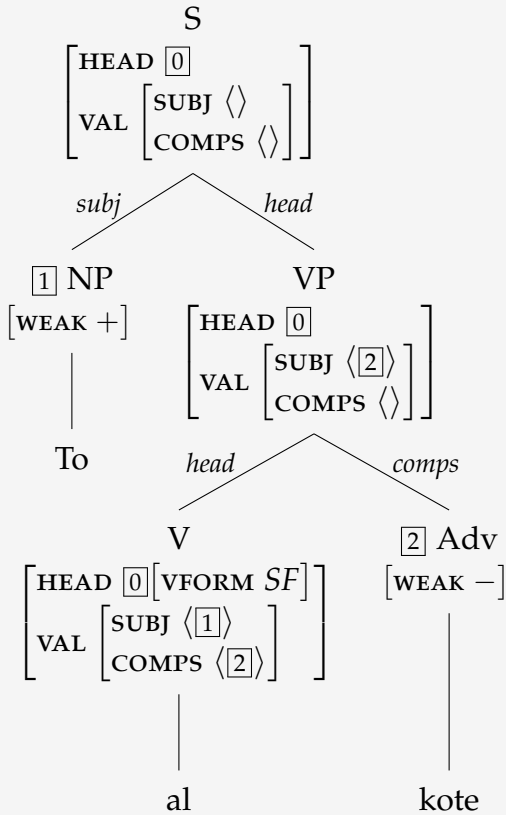


Figure 4 *To al kote ?* ‘You’re going where?’

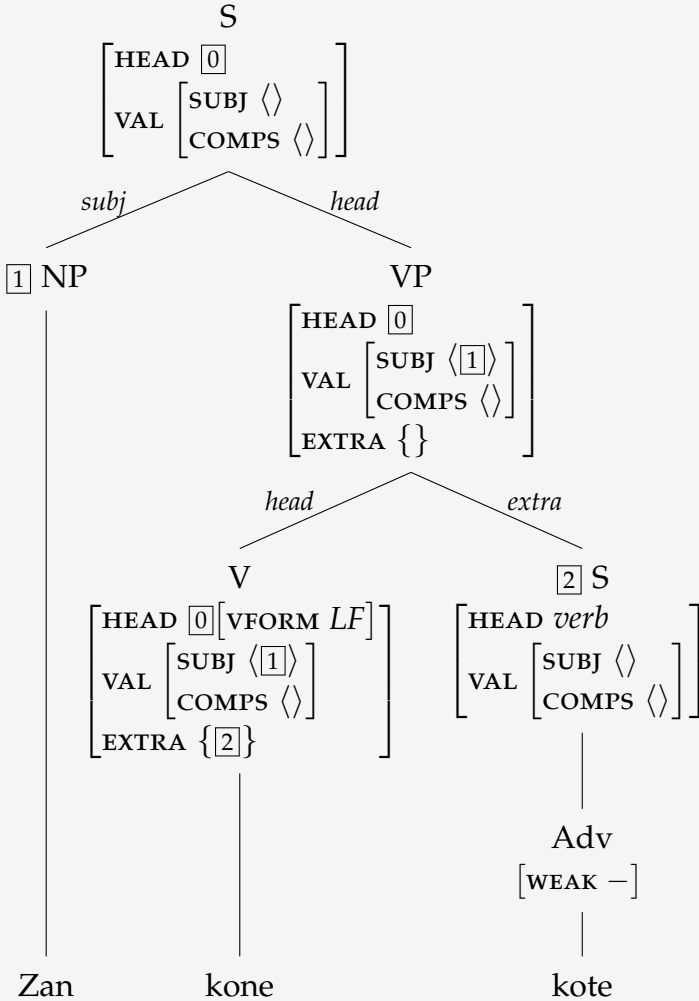


Figure 5 *Zan kone kote* 'John knows where'

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