



Syntax of Concealed Sluicing in Bùlì

Abdul-Razak Sulemana and Ken Hiraiwa*

Abstract. Sluicing is a star example of ellipsis first observed by Ross (1969). Ross (1969) argued that sluicing results from an embedded *wh*-question clause, in which *wh*-movement is followed by deletion of everything but a *wh*-phrase. Interestingly, some languages disallow embedded *wh*-questions and instead, express them with relative clauses. In this paper, we show that Bùlì, a Mabia/Gur language spoken in Northern Ghana, exhibits rarely-discussed interesting patterns of sluicing within relative clauses and propose a phase-based explanation.

Keywords. sluicing; concealed sluicing; concealed question; ellipsis; relative clause; Bùlì; Gur/Mabia languages

1. Introduction. In this paper, we show that Bùlì, a Mabia/Gur language spoken in Northern Ghana, exhibits a rarely-discussed interesting pattern of sluicing within relative clauses, as illustrated in example (1).

- (1) Àsíbì ñà wā̄-ī, ālīgē mí zè (*āsī) [wā̄-ī- àtī -wà ɲà t̄; lá].
 Àsíbì saw NC-i but 1SG know.NEG C NC-i C 3SG saw DEM
 ‘Àsíbì saw someone, but I don’t know who. (Lit. the person (who he saw))’
 (Concealed sluicing)

We will argue that in Bùlì, sluicing takes a form of regular *wh*-movement and deletion in root questions, whereas sluicing takes a form of an elliptical relative clause in embedded questions. We call the latter *Concealed Sluicing*. We show that Concealed Sluicing involves ellipsis (just like sluicing). Syntactically, Concealed Sluicing is a relative clause, but semantically, it is a question (just like concealed questions). We propose a phase-based theory of ellipsis accounts for Concealed Sluicing in Bùlì.

The organization of this paper is as follows. Section 2 overviews *wh*-movement and sluicing. Section 3 introduces what we call Concealed Sluicing in Bùlì and describes its properties. Section 4 proposes a phase theory of ellipsis. Section 5 concludes our discussions.

2. Wh-Question and Sluicing. Bùlì belongs to the Mabia/Gur language family and is spoken in the Upper-East region of Ghana with approximately 170,000 speakers (Kröger 1992, Kenstowicz and Richards 2003, Akanlig-Pare 2005, Hiraiwa 2005, Hiraiwa et al. 2017, Bodomo et al. 2020, Sulemana 2021). It has head-initial clausal word order and head-final nominal word order. It is a noun class language with three lexical tones (high (V́), mid (V̄), and low (V̌))

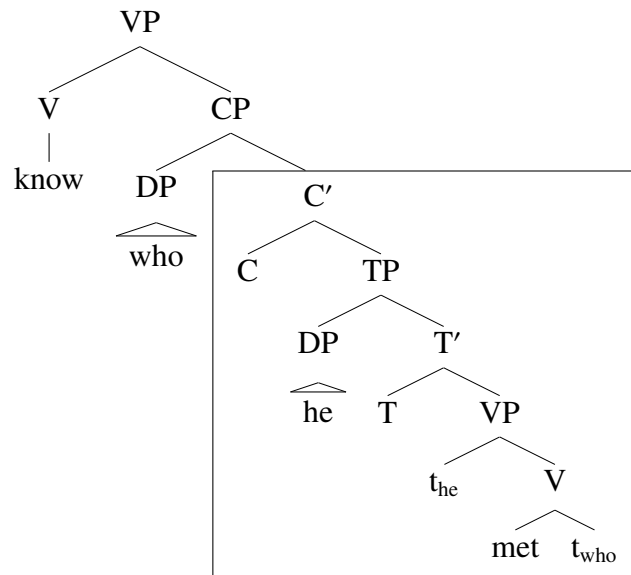
- (2) Nìpōwá dìgì lāmmú tē bí:ká.
 woman.D cook meat.D give child.D
 ‘The woman cooked the meat for the child.’

Sluicing is a star example of ellipsis first observed by Ross (1969). Ross (1969) argued that sluicing in (3) results from an embedded *wh*-question clause, in which *wh*-movement is followed by deletion of everything but a *wh*-phrase (see Merchant 2001, among many others).

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(3) John met someone yesterday, but I don't know [_{CP} who -he -met -t_{DP}].

(4)



However, it has been sporadically noted in the literature that there are languages that do not allow embedded wh-questions (Igbo (Goldsmith 1981; 369–370), Adyghe (Caponigro and Polinsky 2011; 95, 99), Gungbe (Lipták and Aboh 2013), Dagaare (Bodomo and Hiraiwa 2018).) In such languages, sluicing cannot take a form of elliptical wh-question. Rather it takes an interesting form of relative clause with ellipsis, as reported by Liptak and Aboh (2013) for Gungbe, a Kwa language.

(5) Gungbe (Lipták and Aboh 2013; 105–106)

a. Kòfí ná yró mè dɛ̀ àmón má nyón [mè dɛ̀ wɛ̀].

Kofi FUT call person IND but 1SG.NEG know person REL F

‘Kofi will call someone, but I don’t know who (Lit. the person who).’

b. Kòfí ná x̀d̀ nú dɛ̀ àmón má nyón [nú dɛ̀ wɛ̀].

Kofi FUT buy thing IND but 1SG.NEG know thing REL F

‘Kofi will buy something, but I don’t know what (Lit. the thing which).’

Bodomo and Hiraiwa (2018) observes that sluicing in Dagaare, a Mabia/Gur language, is also expressed by an elliptical relative clause.

(6) Dagaare (Bodomo and Hiraiwa 2018)

a. N wong [ka nee kanga da la loo-velaa kanga] kyɛ, n ba boŋg [nee
1SG hear.PERF C person IND buy.PERF F car-good IND but 1SG NEG know person
na nang la].

DEN C F

‘I heard that someone bought a good car, but I don’t know who (Lit. the person which).’

b. N wong [ka Dakoraa da la bon-velaa kanga], kyɛ n ba boŋg [bone na
1SG hear.PERF C Dakoraa buy.PERF F thing-good IND but 1SG NEG know thing DEM
nang la].

C F

‘I heard that Dakoraa bought something good, but I don’t know what (Lit. the thing

which).’

All of these languages share the common property: a wh-question is expressed with a relative-clause-like construction. And in Gungbe and Dagaare, such relative-clause-like constructions involves ellipsis. In the following sections, we examine how sluicing is expressed in Bùlì.

3. Concealed Sluicing in Bùlì.

3.1. WH-QUESTIONS AND RELATIVE CLAUSES IN BÙLÌ. Bùlì is an optional A-bar movement language. A wh-phrase is preceded by the focus particle *ka* optionally in ex-situ wh-questions and obligatorily in in-situ wh-questions (Sulemana 2019).

- (7) a. **(Ká) bwā_i** *(àtī) bí:ká ògì: t_i?
 F what c child.D cook
 ‘What did the child cook?’ (Wh-movement)
- b. Bí:ká ògì: *(**ká) bwā_i**?
 child.D cook F what
 ‘What did the child cook?’ (Wh-in-situ)
- (8) a. **(Ká) bwā_i** *(àtī) fì wè:nì àjīn bí:ká ògì: t_i?
 F what c 2SG say c child.D cook
 ‘What did you say that the child cooked?’ (Long-distance wh-movement)
- b. Fì wè:nì àjīn bí:ká ògì: *(**ká) bwā_i**?
 2SG sat c child.D cook F what
 ‘What did you say that the child cooked?’ (Long-distance wh-in-situ)

All A-bar constructions are island-sensitive (Ferreira and Ko 2003, Hiraiwa 2005, Sulemana 2019). Wh-movement out of an island, overt or covert, is prohibited as shown in (9).

- (9) a. ***Ká bwā_i** àtī fì á-já:lí [núrpók wā:-ī àlī dà t_i lá:]?
 F what c 2SG IMP-love woman NC-i c buy DEM
 ‘You love the woman who bought what?’ (Complex NP island)
- b. *Fì á-já:lí [núrpók wā:-ī àlī dà **ká bwā_i** lá:]?
 2SG IMP-love woman NC-i c buy F what DEM
 ‘You love the woman who bought what?’ (Complex NP island)

Relative clauses in Bùlì can also be ex-situ and in-situ. A relativized head noun is followed by a noun class pronoun and the (indefinite) relativizing suffix *-i* and the right-edge of the relative clause is marked by the demonstrative *la*. They are island-sensitive, as shown in (10) (Hiraiwa 2003, 2005 and Hiraiwa et al. 2017).

- (10) a. Mí dà [**gbǎng-kā:-ī** àtī Chomsky òmàsìrì t_i lá].
 1SG buy book-NC-i c Chomsky write DEM
 ‘I bought the book that Chomsky wrote.’ (Left-headed RC)
- b. Mí dà [Chomsky àlī òmàsìrì **gbǎng-kā:-ī** lá].
 1SG buy Chomsky c write book-NC-i DEM
 ‘I bought the book that Chomsky wrote.’ (Head-internal RC)
- c. Mí dà [**gbǎng-kā:-ī** [Chomsky àlī òmàsìrì t_i lá]].
 1SG buy book-NC-i Chomsky c write DEM
 ‘I bought the book that Chomsky wrote.’ (Left-dislocated RC)

With this in mind, let us look at “sluicing” in Bùlì.

3.2. CONCEALED SLUICING. Unlike (3) in English, however, the verb *ze* ‘not know’ in Bùlì disallows embedded ex-situ wh-questions and embedded sluicing, while it allows embedded in-situ wh-questions, as shown in (11).¹

- (11) a. (Context)
 Àsíbì jà wā̄-ī,
 Àsíbì saw NC-i
 ‘Àsíbì saw someone,’
 b. *ālīgē mí zè [āsī **ká wānā**_i àtī wà jà t_i].
 but 1SG KNOW.NEG C F who c 3SG saw
 ‘but I don’t know who he saw.’ (*Embedded wh-ex-situ question)
 c. *ālīgē mí zè [āsī **ká wānā**_i -àtī -wà jà t_i].
 but 1SG KNOW.NEG C F who c 3SG saw
 ‘but I don’t know who (he saw).’ (*Embedded sluicing)
 d. ālīgē mí zè [āsī wà jà **ká wānā**].
 but 1SG KNOW.NEG C 3SG saw F who
 ‘but I don’t know who he saw.’ (Embedded wh-in-situ question)

Instead, their sluicing counterpart is realized with an elliptical relative clause in (12c) derived from a full relative clause (12b), as depicted in (12d). Thus, we call it *Concealed Sluicing*.

- (12) a. (Context)
 Àsíbì jà wā̄-ī,
 Àsíbì saw NC-i
 ‘Àsíbì saw someone,’
 b. ālīgē mí zè (*āsī) [**wā̄-ī** àtī wà jà t_{DP} **lǎ**].
 but 1SG KNOW.NEG C NC-i c 3SG saw DEM
 ‘but I don’t know the person who he saw.’ (Full RC)
 c. ālīgē mí zè (*āsī) [**wā̄-ī lǎ**].
 but 1SG KNOW.NEG C NC-i DEM
 ‘but I don’t know who (Lit. the person (who he saw)).’ (Concealed sluicing)
 d. ālīgē mí zè (*āsī) [**wā̄-ī** -àtī -wà jà -t_{DP} **lǎ**].

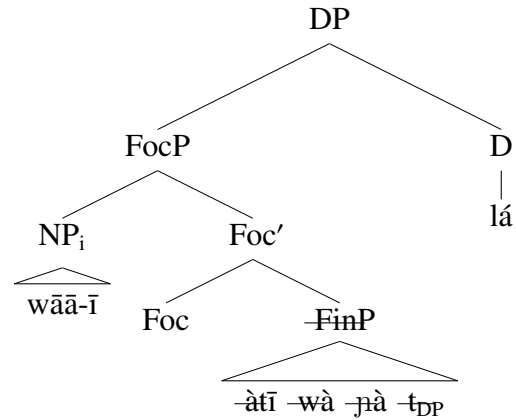
Concealed Sluicing in Bùlì has the following properties. First, Concealed Sluicing has syntax of *relative clauses* because it has exactly the same form as full relative clauses (see (12b)–(12c)) and the head noun class (NC) pronoun appears with the relativizing suffix *-i*. Second, its nominal status is confirmed by the fact that the Q-complementizer *āsī* is ungrammatical in Concealed Sluicing (see (12c)). Third, the presence of *lǎ* in Concealed Sluicing in (12c) also shows that the constituent is a DP, because it is generally required in relative clauses, but it is absent in wh-questions. Fourth, Concealed Sluicing has syntax of *sluicing* because ellipsis applies to a subpart of the structure. Finally, Concealed sluicing has semantics of *concealed question* because it is a non-wh-nominal that expresses a question.

We propose that Concealed Sluicing in (12c) is derived from relativization by deleting

¹ For indefinite pronouns such as existential quantifiers and NPIs. See Akanlig-Pare & Hiraiwa (2022) and Hiraiwa & Akanlig-Pare (2026).

FinP as in (12d), the complement of the Foc head, and present supporting evidence for it. The structure is illustrated below.

(13) The structure of Concealed Sluicing in Bùlì



3.2.1. ISLAND. Concealed Sluicing is sensitive to syntactic islands. This is predicted if Concealed Sluicing is derived from a full relative clause via ellipsis, as we have proposed. Examples (14) confirm the prediction with an adjunct island. When an underlying relative clause is illicit, its Concealed Sluicing counterpart is also illicit.

(14) a. (Context)

Mí wòm ājīn Àtīm kùlì kámá [ālī-àn tū wā:-ī já],
 1SG hear c Àtīm go.home F with-NEG meeting NC-i NEG
 ‘I heard that Àtīm went home without meeting someone,’

b. *ālīgē mí zè [wā:-ī; àtī wà kùlì [ālī-àn tū t_i] lá].
 but 1SG know.NEG NC-i c 3SG go.home with-NEG meet DEM
 ‘but I don’t know the person who he went home without meeting.’

(*Adjunct island)

c. *ālīgē mí zè wā:-ī lá.
 but 1SG know.NEG NC-i DEM
 ‘but I don’t know who (Lit. the person (who he went home without seeing)).’

(*Concealed sluicing)

3.2.2. PIED-PIPING. Concealed Sluicing exhibits pied-piping, exactly when relative clauses require it. In examples (15), when the possessor is relativized, its possessed noun must be pied-piped and this is true in Concealed Sluicing. This again indicates that the underlying structure for Concealed Sluicing is a full relative clause.

(15) a. (Context)

Mí wòm [ājīn Àsíbì dīēm tʃi:m wā:-ī gbáng],
 1SG hear c Àsíbì yesterday read NC-i book
 ‘I heard that Àsíbì read someone’s book yesterday,’

b. ālīgē mí zè [[wā:-ī gbáng]; àtī wà dīēm tʃi:m t_i lǎ].
 but 1SG know.NEG NC-i book c 3SG yesterday read DEM
 ‘but I don’t know whose book’ (Lit. he person’s book that he read yesterday)

(Relativization with pied-piping)

- c. $\bar{a}l\bar{i}g\bar{e}$ mí zè [wā:-ī gbáng lá].
 but 1SG KNOW.NEG NC-i book DEM
 ‘but I don’t know whose book’ (Lit. the person’s book)
 (Concealed sluicing with pied-piping)
- d. * $\bar{a}l\bar{i}g\bar{e}$ mí zè [wā:-ī_i àtī wà dīēm t̥i:m [t̥i gbáng] lá].
 but 1SG KNOW.NEG NC-i c 3SG yesterday read book DEM
 ‘but I don’t know whose book’ (Lit. he person’s book that he read yesterday)
 (*Relativization without pied-piping)
- e. * $\bar{a}l\bar{i}g\bar{e}$ mí zè [wā:-ī lá].
 but 1SG KNOW.NEG NC-i DEM
 ‘but I don’t know whose.’ (*Concealed sluicing without pied-piping)

3.2.3. *CONCEALED SLUICING IN NON-QUESTION ENVIRONMENTS. Concealed Sluicing cannot function as an ordinary argument DP, as shown in (16c). This is evidence that the ellipsis applied in Concealed Sluicing is only allowed in questions, just as in sluicing.

- (16) a. (Context)
 *Àsíbì jà wāā-ī,
 Àsíbì saw NC-i
 ‘Àsíbì saw someone.’
- b. àtī [wā:-ī àtī wà jà dīēm wá lá] ɕàm.
 and NC-i c 3SG see yesterday DEM came
 ‘and the person who he saw yesterday came.’ (Full RC)
- c. *àtī [wā:-ī lá] ɕàm.
 and NC-i DEM came
 ‘and he came.’ (*Concealed Sluicing)
- d. àtī wà ɕàm.
 and 3SG came
 ‘and he came.’ (Pronoun)

3.2.4. *CONCEALED SLUICING IN ROOT CLAUSES. In contrast with the embedded Concealed Sluicing that we have been examining so far, in root wh-questions in Bùlì, sluicing is grammatical, but in fact, Concealed Sluicing is prohibited.

- (17) a. A: Àsíbì jà wā:-ī dīēm wá.
 Àsíbì saw NC-i yesterday
 ‘Àsíbì saw someone yesterday.’
- b. B: **Ká wānā_i** àtī wà jà t̥i?
 F who c 3SG saw
 ‘Who did he see?’ (Root wh-question)
- c. B: **Ká wānā_i** -àtī -wà jà t̥i?
 F who c 3SG saw
 ‘Who (did he see)?’ (Sluicing)
- d. B: *[wā:-ī_i àtī wà jà t̥i lá] ?
 NC-i c 3SG saw DEM
 ‘The person who he saw?’ (*Root RC)

- e. B: *[wā:-ī -àfī -wà ɣà tɪ lá]?
 NC-i c 3SG saw DEM
 ‘The person (who he saw)?’ (*Root concealed sluicing)

This suggests that the mechanism that governs sluicing is sensitive to the root/embedded structure.

4. Proposal. We have shown that Concealed Sluicing is syntactically an elliptical relative clause, just like Concealed Question is a nominal (see Baker 1968, among others). Being syntactically a nominal, it follows that it must be case-licensed (see (12) and (17)). This is why Concealed Sluicing is grammatical in (12) but not in root clauses in (17). Being semantically a question, it follows that it is ungrammatical in non-question environments just like sluicing (see (16)).

The remaining mystery is how ellipsis is licensed in Concealed Sluicing as well as in Root Sluicing (but not in Embedded Sluicing) in Bùlì. We propose the following phase-based theory of ellipsis (see Chomsky 2004, 2008 Bošković 2014, etc.).

- (18) a. Ellipsis must be licensed by Spec-Head Agreement (SHA) (Lobeck 1995, 2006; Lobeck and Sleeman 2017).
 b. A Spell-Out domain and an ellipsis domain are the same (Bošković 2014, Hiraiwa 2016).
 c. Hence, ellipsis of a domain X is possible iff X is the complement of a phase head P and P triggers SHA.

Following Bošković (2014), we assume that an ellipsis domain corresponds to a Spell-Out domain in syntactic derivation. In English sluicing, C, the highest head of the embedded wh-question, is a phase head (phase heads are circled in the tree diagrams below).

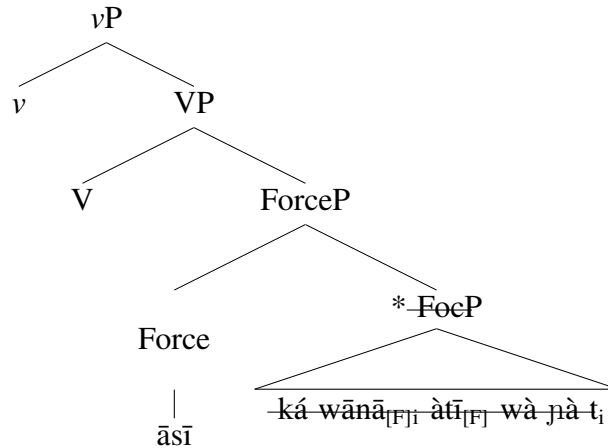
The wh-phrase in [Spec, CP] triggers SHA with C and TP becomes a Spell-Out domain and an ellipsis domain. Thus, TP can be an ellipsis domain, resulting in sluicing.



In contrast, we propose that the reason why sluicing is not acceptable in embedded wh-questions in Bùlì is because the Q complementizer *asi* exists in wh-questions in Bùlì, as shown in (20) (note that Bùlì is head-final in nominal structure and head-initial in clausal structure, like many Kwa languages are).

Being the highest head in the CP spine, this head, Force, counts as a phase head. However, the wh-phrase is in [Spec, FocP] and triggers SHA with Foc (see Sulemana 2019, Hiraiwa 2005). Hence the Spell-Out domain and the ellipsis domain do not match and sluicing is illicit.

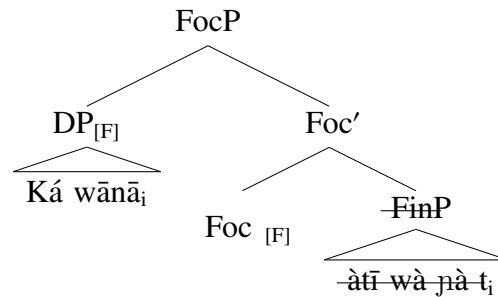
(20) *Embedded Sluicing in Bùlì



On the other hand, in root wh-questions in Bùlì, The Force head is missing and FocP is the highest functional projection.

The wh-phrase moves to [Spec, FocP] and triggers SHA with Foc. Spell-Out can apply to the whole structure (i.e. FocP) or to the complement (i.e. FinP) of the phase head Foc. The latter yields sluicing that deletes everything but a wh-phrase, as shown in (21).

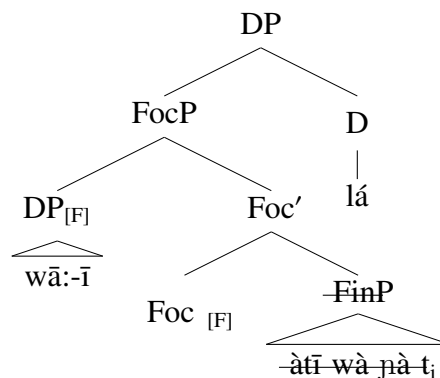
(21) Root Sluicing in Bùlì



Finally, Concealed Sluicing in Bùlì in (12c) has the structure in (22), in which the relativization complementizer *ate* (Fin), the subject DP, and the predicate are all elided, leaving the relativized head noun and the demonstrative.

Thus, we take this domain to be the complement of the phase head Foc. The relativized head noun moves to [Spec, FocP] and agrees with Foc. Thus, the FinP complement of Foc is a Spell-Out domain and hence an ellipsis domain and ellipsis within the relative clause obtains.

(22) Concealed Sluicing in Bùlì



5. Conclusion. We have shown that Bùlì has what we call Concealed Sluicing. Concealed Sluicing is derived from a left-headed relative clause, in which a relativized head noun is moved to [Spec, FocP] and the FinP complement of the phase head Foc is deleted. Concealed Sluicing has semantics of question just like Concealed Question, but syntax of nominals because it is built on a relative clause. A phase theory of ellipsis is proposed to explain why Concealed Sluicing is prohibited in root clauses and why Sluicing is prohibited in embedded questions in Bùlì.

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