

RESEARCH

Q-particles and the nature of covert movement: Evidence from Bùlì

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There are a number of intriguing issues surrounding *wh*-questions that have drawn considerable attention in the literature. Among the most commonly observed is the fact that in certain languages, *wh*-phrases move overtly from their base-generated positions to a clause-peripheral position, while in other languages the *wh*-phrases remain in-situ. A well known and contentious issue, to which this paper contributes with novel data from Bùlì, is the status of the in-situ *wh*-phrase. For instance, do in-situ phrases undergo covert movement? If so how is this movement similar or different from overt movement? I argue that Bùlì distinguishes two kinds of *wh*-in-situ phrases: one undergoes covert movement, a movement that I claim is comparable in many ways to overt *wh*-movement, while the other one does not. The key to this observation is the presence of an overt Q-particle in the language. Whenever the Q-particle is absent, the signs of movement disappear. This provides a very transparent set of arguments in favor of the mixed view that sometimes you have movement of *wh-in-situ* and other other times you do not.

Keywords: Bùlì; *wh*-in situ; Q-particles; Covert movement

1 Introduction

Many languages have *wh-in-situ*. The right analysis of the behavior of the *wh*-phrases in situ is, however, controversial. Different analyses have been suggested: one possibility is that the *wh*-in-situ phrase moves covertly (Huang 1982a; b; Nishigauchi 1990; Aoun et al. 1993; Richards 1997; Nissenbaum 2000). Another possibility is that it doesn't move covertly (Tsai 1994; Watanabe 2001), but some special semantic treatments yield an interpretation similar to when it moved. Sometimes it has been suggested (Pesetsky 2000; Beck 2006; Cable 2007; 2010; Kotek 2014) that both movement and special semantic treatments are available for *wh-in-situ*. The debate, when focused on languages like English, is muddled by various complications where some but not all *wh*-phrases show signs of movement including island effects. I am going to argue that *wh-in-situ* in Bùlì provides a very transparent set of arguments in favor of the mixed view that sometimes you have movement and other other times you do not.

In this paper, I examine *wh*-questions in Bùlì, a Mabia (Gur) language spoken in Ghana, in which the *wh*-phrase stays in-situ.¹ In the example in (1), the *wh*-word, *b^wā* 'what' stays in-situ and is preceded by the particle *ká* in (1a) while in (1b) it is not preceded by *ká*. Following earlier analysis of questions (Hagstrom 1998; 2004; Cable 2007; 2010), I will argue that the *ká* is an instance of overt Q.

¹ Unless otherwise indicated, the data for this paper come from a combination of my own intuitions, and consultation with other native speakers. The working language for consultation with other speakers was in both Bùlì and English.

- (1) a. Bí:ká ðìg *(ká) b^wā:?
child.DEF cook Q what
'What did the child cook?'
- b. (Ká) wānā ālì ðìg b^wā:?
Q who ALI cook what
'Who cooked what?'

I argue that when the *wh-in-situ* has a Q-morpheme as in (1a), it undergoes covert movement and when it doesn't have a Q-morpheme as in (1b), there is no movement. Thus Bùlì has two ways of interpreting *wh-in-situ* phrases. This is reminiscent of *wh-in situ* in Vietnamese (Bruening & Tran 2006) where it has been argued that *wh-in situ* phrases can be interpreted either by covert movement or by unselective binding without movement.² Island and binding effects correlate perfectly with this, thus providing strong arguments for both ways of treating of *wh-in-situ*. Also, the properties I am attributing to covert movement in the language completely match the properties that overt movement has cross linguistically.

The paper is structured as follows: First, in section 2, I provide some background on basic clause structure and the nature of *wh*-questions of Bùlì. In section 3, I provide a brief background to the approach I adopt in this paper, and present the diagnostics that show that *ká* is Q in the language in the sense of Hagstrom (1998; 2004) and Cable (2007; 2010). In section 4, I present the diagnostics that show that the *ká*-phrase undergoes covert movement and exhibits the same properties as overt movement. Finally in section 5, I provide a short conclusion.

2 Background

Bùlì is a strict SVO language:

- (2) a. Bí:ká ðìg lāmmú.
child.DEF cook meat.DEF
'The child cooked the meat.'
- b. *Bí:ká lāmmú ðìg.
child.DEF meat.DEF cook
'The child cooked the meat.'
- c. *Lāmmú bí:ká ðìg.
meat.DEF child.DEF cook
'The child cooked the meat.'

The in-situ strategy for *wh*-questions is illustrated in (3). Notice three things in particular: first, the question words appear in-situ i.e. in their non-peripheral canonical positions. Second, there is final vowel lengthening to indicate the clause is a question. This final vowel lengthening is also present in yes/no questions in the language. Finally, in single in-situ questions, the particle *ka* obligatorily precedes the question word or question containing phrase (multiple *wh*-questions and the distribution of *ka* will be discussed later on in section 4). I gloss this particle as 'Q' for reasons discussed below.

- (3) a. Bí:ká ðìg *(ká) b^wā:?
child.DEF cook Q what
'What did the child cook?'

² I would like to thank an anonymous reviewer for drawing my attention to this paper.

- b. Bí:ká t̀è *(ká) wānā lāmmú:?
child.DEF give Q who meat.DEF
'Who did the child give the meat?'
- c. Bí:ká òìg lāmmú *(ká) bē:?
child.DEF cook meat.DEF Q where
'Where did the child cook the meat?'
- d. Bí:ká òìg lāmmú tē *(ká) wānā:?
child.DEF cook.DEF meat.DEF give Q who
'Who did the child cook the meat for?'

Besides permitting *wh* in-situ, Bùlì also permits constructions like (4) in which the *ká*-phrase is found in clause-initial positions. In clause-initial position, *ká* is optional. In these constructions, however, local subject *wh*-phrases are obligatorily followed by the particle *ā̀lì* (4a) and non subjects are obligatorily followed by *ātì*. See (Ferreira & Ko 2003; Hiraiwa 2003; 2005) for more on these morphemes.

- (4) a. (Ká) wānā *(ā̀lì) òìg lāmmú:?
Q who ALI cook meat.DEF
'Who cooked the meat?'
- b. (Ká) b^wā *(ātì) bí:ká òìgì:?
Q what ATI child.DEF cook
'What is it that the child cooked?'

The scope of an in-situ *wh*-phrase is not clause bound, as (5) shows.

- (5) a. Fì wè:nì ā̀yìn bí:ká òìg *(ká) b^wā:?
2SG say C child.DEF cook Q what
'What did you say the child cooked?'
- b. Fì pá:-chīm mì òìg *(ká) b^wā:?
2SG think 1SG cook Q what
'What do you think I cooked?'
- c. Fì pá:-chīm mì tē *(ká) wānā lāmmú:?
2SG think 1SG give Q who meat.DEF
'Who do you think I gave the meat?'

In embedded questions, the *wh*-phrase remains in-situ (6). The complementizer *āsì* is used in embedded questions. Note that this is different from the complementizer *ā̀yìn*, used in declarative sentences as in (5) above.

- (6) a. Mary bèg ā̀sì John òìg *(ká) b^wā:.
Mary ask C John cook Q what
'Mary asked what John has cooked.'
- b. Mary à-bā ā̀sì John òìg *(ká) b^wā:.
Mary IMPF-wonder C John cook Q what
'Mary wonders what John has cooked.'

In the following sections, I will examine these patterns in more detail. To lay the foundation for the main point of the paper, I will argue in the following sections that *ká* is the Bùlì counterpart of the Q-morpheme identified in languages such as Sinhala and Japanese (Hagstrom 1998; 2004; Kishimoto 2005), and Tlingit (Cable 2007; 2010). I will show

that the in-situ *wh*-phrase headed by *ká* undergoes covert movement which, I argue, is comparable in many ways to overt movement.

3 Wh-in-situ in the context of the Q-theory of questions

Cable (2007; 2010) argued that *wh*-phrases are embedded inside a functional layer which, following previous authors (Hagstrom 1998; Kishimoto 2005), he referred to as Q(uestion)-particle.³ Cable argued that Q, rather than *wh*, is the actual target of so-called *wh*-movement. This particle has gone unnoticed in many languages because it is phonologically covert. He argues that the fronting of *wh*-phrases in “*wh*-fronting” languages is not due to a property of the *wh*-word itself, as has been traditionally assumed, but rather due to the Q-particle. When this Q-particle, which heads its own projection (QP), is fronted, it has the secondary effect of fronting the *wh*-word. Couched in the framework of “probes” and “goals” as developed within the Minimalist Program (Chomsky 1995), the interrogative C head bears an uninterpretable instance of the interpretable Q-feature borne by Q. The interrogative C finds and Agrees with the interpretable Q, valuing its uninterpretable Q-feature. This Agreement relation then triggers movement of the goal, the QP, into the projection of C. Because the QP necessarily contains the *wh*-word, it follows that movement of the QP into the projection of C implies movement of the *wh*-word into the projection of C. Let us see how this proposal works for Tlingit below. In this language, the *wh*-word is always sentence initial and is always followed by the Q-particle *sá*, which either directly follows the *wh*-word or *wh*-containing phrase.

(7) *Tlingit* (Cable 2010)

- a. Daa *sá* i éesh al’óon?
what Q your father he.hunts.it
‘What is your father hunting?’
- b. [_{IP} [_{DP} i eesh] [_{VP} [_{QP} [_{DP} daa] sa] al oon]] base structure
- c. [[_{QP} [_{DP} daa] sa]_i C [_{IP} [_{DP} i eesh] [_{VP} t_i al oon]]] QP-fronting as *wh*-movement

The derivation for (7a) is given in (7b)–(7c), where (7b) is the base structure from which the final structure, (7c), is derived. As shown in (7b) above, the Q-particle *sá* heads its own projection, labeled “QP” and takes the *wh*-word as its complement. The interrogative C head bears an uninterpretable instance of the interpretable Q-feature borne by *sá*. The interrogative C probes for an interpretable instance of this Q-feature on *sá*. It agrees with the particle, then triggers movement of the goal, the QP headed by *sá*, into the projection of C. Because the *wh*-word is contained within the QP, its movement into the CP necessarily implies the movement of the *wh*-word. In addition to the syntax, the Q-particle has certain distributional properties including: it attaches to nominals, cannot occur inside islands and may not separate a DP from a functional head that selects it. This analysis of the Tlingit Q-particle will serve as a model for our analysis of *ká* in Bùlì.

3.1 Wh-in-situ in Bùlì and the theory of Q

In this section, the distribution and properties of Bùlì *ká* are compared with the Q-particles of other languages including *sá* in Tlingit (Cable 2007; 2010), *da* in Sinhala, and *ka* in Japanese (Hagstrom 2004; Kishimoto 2005) leading to the conclusion that *ká* is Q in Bùlì. As will be illustrated below, *ká* only attaches to nominals, and may not separate a DP from a functional head that selects it. The relevance of this particle to the discussion in

³ This label is somewhat misleading because the particle is not restricted to only questions.

this paper is seen in section 4 where I argue that the *ká* headed phrase undergoes covert movement.

Before considering the distribution of *ká*, a quick note on the claim that it attaches to nominals. This immediately raises a question of what the categories of wh-phrases are in the language, especially “where”, “why”, and “when”. Their composition suggests they are all nominals. As shown in (8), there are nominals corresponding to “direction”, “body”, and “day” in the meaning equivalent of *bē-gēŋ* ‘where’, *b^wān-ŋíŋ* ‘why’ and *dā-dīnā* ‘when’ respectively.⁴ As will be shown later in the discussion, nominal constructions like “relative” clauses, and “because” clauses permit *ká* to appear at their edge while non-nominal clauses including “if-clauses” and “without” clauses do not.

Returning to the distribution of *ká*, like Q in Tlingit and Sinhala, it is obligatory in a wh-question, as seen in (8).

- (8) a. *Bí:ká ðìg *(ká) b^wā:?*
 child.DEF cook Q what
 ‘What did the child cook?’
- b. *Bí:ká ðìg lāmmú *(ká) bē-gēŋa?*
 child.DEF cook meat.DEF Q what-direction
 ‘Where did the child cook the meat?’
- c. *Bí:ká ðìg lāmmú *(ká) b^wān-ŋíŋa?*
 child.DEF cook meat.DEF Q what-body
 ‘Why did the child cook the meat?’
- d. *Bí:ká ðìg lāmmú *(ká) dā-dīnā:?*
 child.DEF cook meat.DEF Q day-which
 ‘When did the child cook the meat?’

Secondly, the particle *ká* must c-command a wh-phrase. It can be directly prefixed to the wh-word, as the above examples show, or it can be attached to a larger wh-containing phrase, as the (a) examples in (9)–(11) show. If the Q doesn’t precede the wh-phrase, the constructions are ill-formed.

- (9) a. *Azuma dà ká gbáŋ ālì b^wā:?*
 Azuma buy Q book CONJ what
 ‘Azuma bought a book and what?’
- b. **Azuma dà gbáŋ ālì b^w ā ká?*
 Azuma buy book CONJ what Q
 ‘Azuma bought a book and what?’
- (10) a. *Asouk dà ká wān gbáŋa:?*
 Asouk buy Q who book
 ‘Whose book did Asouk buy?’
- b. **Asouk dà wān ká gbáŋa:?*
 Asouk buy who Q book
 ‘Whose book did Asouk buy?’
- (11) a. *Asouk dà ká Azuma b^w ā:?*
 Asouk buy Q Azuma what
 ‘What belonging to Azuma did Asouk buy?’

⁴ *bē-gēŋ* is sometimes shortened as *bē*. I will therefore use the short form in the rest of the paper.

- b. *Asouk dà **Azuma b^w ā: ká?**
 Asouk buy Azuma what Q
 ‘What belonging to Azuma did Asouk buy?’

One important property of Q-particles observed in many languages is that, although a *wh*-phrase is allowed inside a complex-DP, the Q-particle must appear at the edge of the island (Hagstrom 1998; Kishimoto 2005; Cable 2007; 2010). This same property can be observed for Bùlì. *Ká* cannot appear inside but must appear at the edge of the complex DP.

- (12) a. *Fí á-yáalí [núrpók wāi ālì dà **ká** b^wā lá:?
 2SG IMPF-love woman REL.PRO C buy Q what PRT
 ‘You love the woman who bought what?’
- b. *Fí á-yáalí [núrpók [**ká** [wāi ālì dà b^wā lá:?
 2SG IMPF-love woman Q REL.PRO INFL buy what PRT
 ‘You love the woman who bought what?’
- c. Fí á-yáalí **ká** [núrpók [wāi ālì dà b^wā lá:?
 2SG IMPF-love Q woman REL.PRO C buy what PRT
 ‘You love the woman who bought what?’

I argue, based on the distributional similarities of *ká* to the Q-particles *da* in Sinhala, *ka* in Japanese and *sá* in Tlingit, that *ká* is Q in Bùlì, and, as such, it should be given an analysis parallel to the Q-particles in these languages.

Despite these similarities, there are some points of divergence among the languages in terms of distribution and function of their Q-particles. The Q in Bùlì only attaches to nominals, and, unlike its counterpart in Tlingit, it does not also appear on *wh*-words to mark indefinites. It can also be used in declarative sentences to mark focus. The selectional requirement of Q thus independently rules out (12b), where Q is attached to the relative clause, and explains why the Q-particle cannot appear at the left-edge of the matrix clause, as in (13b), or subordinate clause, as in (13c)–(13d), unlike in Tlingit where Q can mark subordinate clauses.

- (13) a. Bí:ká òg *(ká) b^wā:?
 child.DEF cook Q what
 ‘What did the child cook?’
- b. *Ká [bí:ká òg b^wā:?
 Q child.DEF cook what
 ‘What did the child cook?’
- c. *Fì wè:nì āyīn ká bí:ká òg b^wā:?
 2SG say C Q child.DEF cook what
 ‘What did you say the child cooked?’
- d. *Fì wè:nì ká āyīn bí:ká òg b^wā:?
 2SG say Q C child.DEF cook what
 ‘What did you say the child cooked?’

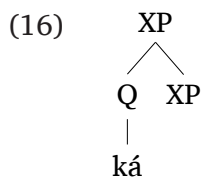
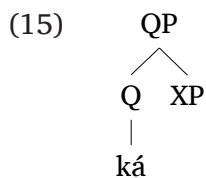
Another point of divergence is that, in Bùlì, there can be at most one instance of *ká* per question, even in multiple *wh*-questions, (14), (again unlike Tlingit, which can have multiple Q-particles in multiple *wh*-questions).

- (14) a. John tē bí:ká lām.
 John give child.DEF meat
 ‘John gave the child meat’.

- b. John tè **ká** wān b^wā:?
John give Q who what
'Who did John give what?'
- c. *John tè **ká** wān **ká** b^wā:?
John give Q who Q what
'Who did John give what?'

Cable (2007; 2010) draws a distinction between Q-projection languages (15) and Q-adjoining languages (16). Only in a Q-projection language will movement triggered by a Q probe yield phrasal movement of the type usually called *wh*-movement.

The Q-particle is barred from appearing in certain environments in Q-projection languages: (i) between a *wh*-possessor and the possessed NP, (ii) between a *wh*-determiner and its NP complement or (iii) between a pre or postposition and its complement. To the extent that these constructions are replicable in Bùlì, we should observe similar restrictions on the distribution of *ká* if the language is a Q-projecting language. As will be shown below, similar restrictions are observed for the distribution of *ká*.



In possessive constructions, *ká* cannot appear between a possessor NP and a possessed *wh*-phrase (17).

- (17) a. Asouk dà **ká** Azuma b^w ā:?
Asouk buy Q Azuma what
'What belonging to Azuma did Asouk buy?'
- b. *Asouk dà Azuma **ká** b^w ā:?
Asouk buy Azuma Q what
'What belonging to Azuma did Asouk buy?'

It cannot appear between a *wh*-determiner and its NP complement (18).

- (18) a. Bí:ká òg ká lām būna:?
child.DEF cook Q meat which
'Which meat did the child cook?'
- b. *Bí:ká òg lām **ká** būna:?
child.DEF cook meat Q which
'Which meat did the child cook?'

It cannot also appear between a preposition and its complement (19b), nor can it precede the preposition (19c). Example (19c) contrasts with the distribution of Q in Tlingit, which allows Q to take a preposition as its complement.

- (19) a. Fì chèn̄j alī bí:ká.
 2SG go P child.DEF
 ‘You went with the child.’
- b. *Fì chèn̄j alī ká wānā:?
 2SG go P Q who
 ‘Who did you go with?’
- c. *Fì chèn̄j ká alī wānā:?
 2SG go Q P who
 ‘Who did you go with?’

The data from (17)–(19) show that *ká* is restricted from appearing in the structural positions that the Q in Q-projecting languages are also banned from occurring. This is thus evidence that the language is a Q-projection language.

As the discussion shows, *ká* must precede the *wh*-phrase, it cannot occur inside an island, and it may not separate a DP from a functional head that selects it. We also saw that *ká* heads its own projection i.e it can either directly take a *wh*-phrase or a *wh*-containing phrase as its complement (Q-projection language). Since *ká* has the same range of restrictions as Q, I conclude that *ká* is Q. This serves as the background for next section where I argue that *ká* diagnoses covert movement.

4 Covert vs. overt movement

Do in-situ phrases undergo covert *wh*-movement? If so, how is this movement different from overt *wh*-movement? I argue that there are two kinds of *wh*-in situ in the language: the first kind undergoes covert movement while the second kind does not. Covert movement occurs in situations where the in-situ phrase is preceded by the question particle *ká*; the *wh*-in situ does not undergo movement when the Q-particle is missing. The evidence for the split comes from islands, scope, binding theory and the absence of intervention effects. For instances where movement is observed, I argue that there are no differences between covert and overt phrasal *wh*-movement.

4.1 Covert movement of the *ká*-phrase

In this section, we look at the *wh*-in situ immediately preceded by *ká* which I argue undergoes covert movement. Does this phrase show the properties that are diagnostics of movement? I present evidence from islands, binding theory, the absence of intervention effects, and, arguably, scope that answers this question in the affirmative. I show that this covert movement is comparable in many ways to the overt movement of languages like English.

Studies over the years have converged on several properties for diagnosing whether a syntactic operation involves movement. A stable diagnostic for movement is island-sensitivity. If the *ká*-phrase involves any kind of movement, then we expect the *ká*-phrase to show island sensitivity. This expectation is borne out, as shown earlier in (12), repeated as (20), and (21). Although *wh*-phrases are allowed inside an island, attaching the particle *ká* to the *wh*-phrase inside the island renders the construction ungrammatical (20a). It must appear at the edge of the island (20b).

- (20) *Complex DP island-relative clause*
- a. *Fí á-yáalí [núrpók wāi ālì dà ká b^wā lá:?
 2SG IMPF-love woman REL.PRO C buy Q what PRT
 ‘You love the woman who bought what?’

- b. Fí á-yáalí **ká** [núrpók wāi ālì dà b^wā lá:?
 2SG IMPF-love Q woman REL.PRO C buy what PRT
 ‘You love the woman who bought what?’

When a wh-phrase is coordinated with another element, *ká* must precede the entire conjunction phrase, (21b). Placing it immediately before the wh-phrase in the second conjunct, (21a), results in ungrammaticality. This is consistent with earlier studies which show that covert movement obeys the CSC (Ruys 1992).

- (21) *Coordinate structure Constraint*
 a. *Azuma dà [gbáj ālì **ká** b^wā:?
 Azuma buy book CONJ Q what
 ‘Azuma bought a book and what?’
 b. Azuma dà **ká** [gbáj ālì b^wā:?
 Azuma buy Q book CONJ what
 ‘Azumah bought a book and what?’

An adjunct “because” clause behaves like a nominal: the because has the final particle *la*: a determiner-like particle found with relative clauses and *jīŋ* ‘body’ which is the same form we find with the wh-word “why” in the language. All these factors suggest that it is nominal. As a result *ká* cannot appear inside, (22b), but may appear at its edge, (22c).

- (22) *Because-clause*
 a. Bì:ká à lā [John ali dà gbájká la jīŋ.]
 child.DEF IMPF laugh John ALI buy book.DEF PRT body
 ‘The child is laughing because John bought the book’.
 b. *Bì:ká à lā [John ali dà **ká** b^wā la jīŋ] a?
 child.DEF IMPF laugh John ALI buy Q what PRT body
 ‘The child is laughing because John bought what?’
 c. Bì:ká à lā **ká** [John ali dà b^wā la jīŋ] a?
 child.DEF IMPF laugh Q John ALI buy what PRT body
 ‘The child is laughing because John bought what?’

Also, *ká* cannot appear inside an “If-clause”, (23), or “Without-clause”, (24). It cannot appear at the edge of these clauses because of the subcategorization restriction that it appears with nominals.

- (23) *If-clause*
 a. *Asouk lí dígí lām ās Apita dīn wé:ní āyīn Azuma dà **ká** b^wā?
 Asouk FUT cook meat if Peter PRT say C Azuma bought Q what
 ‘What is it that Asouk will cook meat if Peter says Azuma bought?’
 b. *Asouk lí dígí lām **ká** āsī Apita dīn wé:ní āyīn Azuma dà b^wā?
 Asouk FUT cook meat Q if Peter PRT say C Azuma bought what
 ‘What is it that Asouk will cook meat if Peter says Azuma bought?’
- (24) *Without-clause*
 a. *Azuma g^wà ālī-ān dà **ká** b^wā:?
 Azumah sleep without buy Q what
 ‘What did Azuma sleep without buying?’

- b. *Azuma g^wà ká ālī-ān dà b^wā:?
Azumah sleep Q without buy what
'What did Azuma sleep without buying?'

Assuming that complex DP phrases, coordinate structures, conditionals and adjunct clauses are islands for movement, these observations support the claim that there is covert movement involved in these constructions.

A second piece of evidence for covert movement comes from Binding Theory. Nissenbaum (2000) shows that covert wh-movement feeds condition A of the binding theory. Consider the data in (25) from Nissenbaum (2000). The covert phrasal movement of the in-situ wh-phrase in (25a) licenses the anaphor. In contrast, since there is no such movement in (25b), the anaphor is not licensed resulting in the ungrammaticality of the sentence.

- (25) *English* (Nissenbaum 2000: 126)
a. Who_i thinks Mary was looking at which picture of himself_i?
b. *Who_i thinks Mary was looking at a picture of himself_i.

In-situ wh-phrases in Bùlì can feed condition A of the binding theory. Consider the examples in (26). The anaphor needs an antecedent within the same clause in order to be licensed, (26a)–(26b). When the antecedent fails to c-command the anaphor, the result is ungrammatical, (26c).

- (26) a. Amary_i à-yā: wà-dēk_{i/aj}
Mary IMPF-like 3SG-self
'Mary likes herself'
b. *Amary_i wè:ni āyīn mī à-yā: wà-dēk_i
Mary say C 1SG IMPF-like 3SG-self
'Mary said that I like herself'
c. *Amary_i doama à-yā: wà-dēk_i
Mary friends IMPF-like 3SG-self
'Mary's friends like herself'

The examples in (27) replicates the English paradigm from Nissenbaum given in (25), though the judgments in Bùlì are perhaps stronger. The ungrammaticality of (27b) is expected because the antecedent of the anaphor is found in the matrix clause while the anaphor is in the embedded clause. The grammaticality of (27a) is surprising since the antecedent and the anaphor are in different clauses. The contrast between (27a) and (27b) is expected if covert movement is involved—and importantly successive cyclicity in (27a). The covert movement of the *ká*-phrase into the matrix verb will license the anaphor. The example in (27b) is ruled out because there is no such movement. It will later be shown that we lose the Nissenbaum effects in instances where the in-situ wh-phrase does not move covertly.

- (27) a. Amary_i wè:ni āyīn mī à-yā: ká wà-dēk_i foto kuna:?
Mary say C 1SG IMPF-like Q 3SG-self picture which
'Mary said that I like which picture of herself?'
b. *Amary_i wè:ni āyīn mī à-yā: wà-dēk_i foto wa-de.
Mary say C 1SG IMPF-like 3SG-self picture DET-DEM
'Mary said that I like this picture of herself'

4.1.1 Evidence from intervention effects

Another piece of evidence for the covert movement of the *ká*-phrase comes from intervention effects. The absence of intervention effects can also diagnose covert movement of the *ká*-phrase. It has been argued that languages make use of two methods of interpreting wh-in-situ phrases: covert movement (Chomsky 1976; Huang 1982b; Pesetsky 1987; Aoun et al. 1993; Pesetsky 2000) and a non-movement strategy such as Focus-Alternatives computation (Hamblin 1973; Rooth 1985; 1992; Beck 2006; Cable 2007; 2010; Kotek 2014). Beck (2006) observes that the Focus-Alternative strategy of interpreting a wh-in-situ phrase is subject to intervention effects. If a focus operator like *only* occurs between an in-situ wh-phrase and the C that interprets it at LF, it will cause the derivation to crash (28a). This is because the focus operator makes use of both the ordinary and focus semantic value of its sister. Since the wh-phrase lacks an ordinary value, the structure is uninterpretable, and hence ungrammatical. Pesetsky (2000) explains these facts by linking the presence of intervention effects to the absence of covert movement. Covert movement is immune from intervention because the wh-phrase will move covertly above the intervener (28b) at LF, and thus will be able to obviate intervention effects.

(28) Structure of intervention

- a. *Focus-Alternatives computations*: *[C...intervener [...wh...]]
- b. *Covert movement*: [C...intervener [...wh...]]

Consider an instantiation of this schema from English. Pesetsky (2000) observes in English multiple wh-constructions that *Superiority obeying* questions are not subject to intervention while *Superiority violating* questions are subject to intervention. *Superiority-obeying* and *superiority-violating* constructions are shown in (29) and (30) respectively.

- (29) a. Who bought what?
- b. *What did who buy?

- (30) a. Which person bought which book?
- b. Which book did which person buy?

He argues that *superiority obeying* in-situ wh-phrases in English undergo LF wh-movement while in *superiority violating* structures, the in-situ phrase is interpreted via feature movement. In effect these constructions have different LF representations as shown in (31). In (31a) all the wh-phrases move to the spec C at LF. On the contrary, in (31b) only *wh₂* ‘which person’ moves to the spec of C at LF. *Wh₁* remains in-situ and is computed via feature movement.

- (31) a. [who₁ what₂ [C [_{TP} t₁ buy t₂]]] LF: Superiority-Obeying
- b. [which book₂ [C [_{TP} which person₁ buy t₂]]] LF: Superiority-Violating

Pesetsky (2000) proposes that when an in-situ wh-phrase such as *wh₁* in (31b) does not undergo covert movement, it is interpreted via Focus-Alternative computations and that it is this strategy that is subject to intervention. Thus, in the *superiority obeying* constructions, (32) and (33a), all the wh-phrases move covertly. As a result, adding an intervener will not affect the interpretability of the sentences. On the other hand, because *which girl* remains in-situ in (33b) and is interpreted via focus alternative computation, adding an intervener above it will result in an uninterpretable structure, and hence the ungrammaticality of the sentence.

- (32) a. Who did only John introduce to whom?
 b. Which children didn't buy which book?
- (33) a. Which girl did only Mary introduce to which boy?
 b. *Which boy did only Mary introduce which girl to?

Movement, whether overt or covert, which takes the wh-phrase outside the c-command domain of an intervener solves the problem of intervention. As shown in (32) and (33) for English, covert movement of the phrase prevents intervention. In many other languages including Korean, overt movement obviates intervention. Consider the following examples from Korean. The sentence in (34a) is ungrammatical because the intervener *only* c-commands the wh-phrase. Contrast this sentence with (34b) where the intervener is absent and (34c) where the wh-phrase moved past the intervener.

- (34) *Korean* (Beck 2006: 3)
- a. *Minsu-man nuku-lû-l po-ss-ni?
 Minsu-only who-ACC see-Past-Q
 'Who did only Minsu see?'
- b. Minsu-mun nuku-lû-l po-ss-ni?
 Minsu-Top who-ACC see-Past-Q
 'Who did Minsu see?'
- c. Nuku-lû-l Minsu-man po-ss-ni?
 who-ACC Minsu-only see-Past-Q
 'Who did only Minsu see?'

Adopting the insights of these accounts, we can diagnose covert phrasal movement in Bùlì: if the *ká*-phrase can appear below these interveners without resulting in ungrammaticality, then we conclude that covert phrasal movement has taken place. If, on the other hand, the relation between the *ká*-phrase and C is interrupted, then we diagnose Focus-Alternative computation for the wh-in-situ.

4.1.2 Detecting intervention

The presence of *ká* and covert-phrasal movement of the *ká*-phrase make a prediction concerning intervention effects: placing an intervener between the wh-word and the Q-particle *ká* should trigger intervention. We can test this prediction with a Complex DP island where it is possible to fit interveners between *ká* and the wh-phrase. While it is possible to have an intervener above the island, (35a), it is not possible to have an intervener within the island, (35b–35d).

- (35) a. Fí **kàn** yáalí **ká** [núrpók wāi ālì dà **b^wā** lá:?
 2SG NEG love Q woman REL.PRO C buy what PRT
 'You don't love the woman who bought what?'
- b. *Fí á-yáalí **ká** núrpók wāi **mē** ālì dà **b^wā** lá:?
 2SG IMPF-love Q woman REL.PRO also C buy what PRT
intended: 'You love the woman who also buy what?'
- c. *Fí á-yáalí **ká** núrpók wāi ālì **kàn** dà **b^wā** lá:?
 2SG IMPF-love Q woman REL.PRO C NEG buy what PRT
intended: 'You love the woman who didn't buy what?'
- d. *Fí á-yáalí **ká** [núrpók wāi **ɲi:ɲi** ālì dà **b^wā** lá:?
 2SG IMPF-love Q woman REL.PRO only C buy what PRT
intended: 'You love only the woman who bought what?'

- e. **Ká** wānā ālì dāg [núr wāi ālì **kàn** dà gbánká lá:ʔ] sàg wānā
 Q who INFL point [man REL.PRO INFL NEG buy book PRT] show who
 ‘Who showed the man who didn’t buy the book to who?’

The acceptability of (35a) makes two relevant points: first the relation between *ká* and the wh-word is not interrupted because the intervener *kàn* is above both the particle and the wh-phrase; second, the *ká*-phrase, in this instance *ká* and its complement (the island) will covertly move across the intervener, thus obviating intervention effects. The ungrammaticality of (35c)–(35d) is predicted because the relation between the wh-phrase and its licenser is interrupted by an intervener. An intervener within an island where it does not c-command the in-situ wh-phrase is grammatical, (35e), however.

In-situ wh-phrases immediately preceded by *ká* are not subject to intervention effects: wh-phrases are permitted under the c-command domain of focus-related elements like *only*, *also* and *negation* as shown in (36). Overt movement over these elements is fine as expected, (37).

- (36) a. John **mē** dīg ká b^{wā}:ʔ
 John also cook Q what
 ‘What did John also cook?’
 b. John **àn** dīg ká b^{wā}:ʔ
 John NEG cook Q who
 ‘What did John not cook?’
 c. John **ɲi:ɲi** dīg ká b^{wā}:ʔ
 John only cook Q what
 ‘What did only John cook?’
- (37) a. (Ká) b^{wā} ātì John **mē** dīgì:ʔ
 Q what C John also cook
 ‘What did John also cook?’
 b. (Ká) b^{wā} ātì John **àn** dīg ya?
 Q what C John NEG cook PRT
 ‘What did John not cook?’
 c. (Ká) b^{wā} ātì John **ɲi:ɲi** dīgì:ʔ
 Q what C John only cook
 ‘What did only John cook?’

We conclude from (36) that the *ká*-phrase has covertly moved above the intervener, thus obviating intervention effects. To illustrate, a construction like (36a) will have as an LF (38). Crucially, the wh-phrase is above the intervener, thus obviating intervention.

- (38) [_{CP} [ká b^{wā}]₁ [_C [_{TP} John **mē** dīg_{ti}]]] LF: *showing covert movement*

Finally, the reader may be wondering whether wh-in situ in these constructions has wide scope with respect to other elements. Example (39) shows that this is indeed possible if scope is determined by movement. In the sentence below, the in-situ wh-phrase can take wide scope over the quantifier. Although several accounts of wide scope (such as those involving focus alternative computation) derive these scope properties without movement, a combination of factors including island sensitivity and the absence of intervention effects for the *ká*-phrase strongly suggests movement. The wide scope reading of the wh-phrase is possible if the wh-phrase moves above the universal quantifier (Aoun & Li

1993). Since there is no indication of overt movement in (39), we can reason this has taken place covertly.

- (39) Wāi-mē:nā ðìg *(ká) b^{wā}:?
 person-all cook Q what
 ‘What did every one cook?’
 ‘For each person y, what is the x st y cooked x.’
 ‘What is the x st everyone cooked x.’

As demonstrated, the *ká* headed phrase, though in-situ, behaves like overtly moved phrases in being sensitive to the same islands and in being able to obviate intervention effects, among others. The conclusion drawn from this is that the *ká* headed phrase undergoes covert movement, which is comparable to the overt movement we observe for overt movement languages like English and Bùlì, as we will see below in section 4.3.

4.2 *Ká-less phrases do not move*

In the preceding section, we looked at the first kind of wh-in-situ phrase, the one preceded by *ká*, and I argued that the *ká*-phrase undergoes covert movement. In this section, we take a look at the second kind of wh-in-situ, the one without *ká*. At this point, there are two possibilities that might, in theory, be attested with the *ká*-less in situ phrase: either (a) they pattern like in situ wh-phrases with *ká* and show signs of undergoing covert movement, or (b) they do not show such signs, and therefore could be concluded not to undergo covert movement. The evidence leads to the conclusion that (b) is correct.

Ká-less wh-phrases occur in multiple questions. In multiple wh-questions, *ká* appears to the left of the highest wh-containing phrase, (40).

- (40) a. Ajohn tè **ká** wān b^{wā}:?
 John give Q who what
 ‘Who did John give what?’
 b. (**Ká**) wānā ālì ðìg b^{wā}:?
 Q who ALI cook what
 ‘Who cooked what’
 c. (**Ká**) b^{wā} ātì wānā ðìgì:?
 Q what C who cook
 ‘What is it that who cook?’

Having multiple *ká*, (41a), or placing it on the lowest wh-phrase, (41b), results in ungrammaticality. An open question for the current account is why there is one *ká* which appears on the highest wh-phrase.⁵

- (41) a. *Ajohn tè **ká** wān **ká** b^{wā}:?
 John give Q who Q what
 ‘Who did John give what?’
 b. *Ajohn tè wān **ká** b^{wā}:?
 John give who Q what
 ‘Who did John give what?’

An initial point that suggests that a *ká*-less in situ wh-phrase doesn’t undergo covert movement is that it can occur inside an island, (42). As has been noted above, the in-situ

⁵ The same observation is made for D-linked questions: *ká* must always appear on the highest wh-containing phrase.

phrase with *ká* is island sensitive since movement out of islands is generally barred. The fact that the *ká*-less phrase is allowed inside an island could be taken as evidence that it doesn't undergo covert movement.

(42) *Complex DP island-relative clause*

(Ká) wānā ālì à-yāli gbáŋ kái wānā ālì dà lá:?
 Q who ALI IMPF-love book REL.PRO who C buy PRT
 Literally: 'Who loves the book that who bought?'

Another suggestive piece of evidence that the *ká*-less phrase does not undergo movement comes from binding theory. Relying on a previous observation that covert movement can feed condition A of the binding theory, we noted that the in-situ phrase with *ká*, can feed condition A of the binding theory. A related question is: can the wh-phrase without *ká* feed condition A of the binding theory? It should be able to feed the binding theory if it involves movement just like its counterpart with *ká*.

Multiple questions are possible in embedded clauses, (43). In (43b), there is only one wh-phrase *ká wà-dēk_i foto kuna* 'which picture of herself' in the embedded clause. Because this wh-phrase is preceded by the Q-particle *ká*, it moves covertly into the matrix clause, thereby licensing the anaphor. Example (43c), on the other hand, involves a multiple question. In this construction, the Q-particle *ká* is on the wh-phrase *ká núr bānā* 'which people', and it is that phrase which moves covertly. The anaphor in the second wh-containing phrase is not licensed in this context. We can explain this by arguing that the inability of an antecedent in a matrix clause to license an anaphor in an embedded wh-phrase without *ká* is because it does not involve movement, hence the ungrammaticality of the sentence.

- (43) a. Amary_i pā-chīm bísāŋá tē ká wān b^{wā}:?
 Mary think child.DEF.PL give Q who what
 'Who does Mary think the children gave what?'
 b. Amary_i pā-chīm bísāŋá tē nūrmà ká wà-dēk_i foto kuna:?
 Mary think child.DEF.PL give man.DEF.PL Q 3SG-self picture which
 'Which picture of herself does Mary think the children gave to the people?'
 c. *Amary_i pā-chīm bísāŋá tē ká núr bānā wà-dēk_i foto kuna:?
 Mary think child.DEF.PL give Q man which 3SG-self picture which
 'Which people does Mary think the children gave which picture of herself?'

Another argument for the non-movement of the *ká*-less wh-phrase comes from intervention. We saw that placing an intervener above a wh-phrase preceded by *ká* doesn't trigger intervention. In multiple wh-contexts where the second wh-phrase is not preceded by *ká* and doesn't move, we might predict intervention effects. This is indeed the case, as shown in (44) below.

- (44) a. *Ajohn àn tē ká wān b^{wā}:?
 John NEG give Q who what
 'Who did John not give what?'
 b. *Ká wānā ālì kàn dìg b^{wā}?
 Q who INFL NEG cook what
 'Who did not cook what?'
 c. (Ká) b^{wā} ātì wānā àn dìgì yā:?
 Q what C who NEG cook PRT
 'What is it that who did not cook?'

Although the *ká*-phrase can move across the intervener in (44a), the second *wh*-phrase will not, resulting in an intervention effect. In example (44b) where negation is below Wh_1 and above Wh_2 , the result is ungrammatical, as an instance of an intervention effects. Example (44c) shows that if all the *wh*-phrases are above the intervener we do not get intervention effects. Note that this extends to other interveners including “only” and “also”.

We have seen in this section that there are basically two kinds of *wh*-in-situ in the language: the one preceded by *ká* and the one without a *ká*. As argued in the previous section, drawing from different kinds of evidence, the in-situ *wh*-phrase preceded by *ká* is the only one that undergoes covert movement. The *ká*-less one, on the other hand, does not undergo any kind of movement. This is reminiscent of *wh*-in situ in Vietnamese (Bruening & Tran 2006) where it has been argued that *wh*-in situ phrases can be interpreted either by covert movement or by unselective binding without movement. In Vietnamese, however, the covert movement strategy occurs in matrix questions when there is no question particle, while unselective binding (lack of movement) is employed when there is a question particle and in embedded questions generally.

4.3 The left-peripheral *ká*-phrase

In this section, we turn to constructions like (45), repeated from (4), where the *ká*-phrase is found at the left-periphery of the clause. I show that, as far as *wh*-movement is concerned, Bùlì is a language where both overt and covert movement behave nearly identically except for the phonology—with both interacting with Islands, intervention effects, and binding theory in perfectly identical ways, once extraneous factors like linear precedence are taken into account.

In these constructions, as noted earlier, the *wh*-phrase is obligatorily followed by *ātì* if the *wh*-phrase is a non subject, (45a)–(45b), and *ālì* if it is a local subject.

- (45) a. (Ká) b^wā *(ā̀tì) bí:ká ò̀gì:?
 Q what ATI child.DEF cook
 ‘What is it that the child cooked?’
- b. (Ká) wānā *(ā̀tì) bí:ká ò̀gì lāmmú tē:?
 Q who ATI child.DEF cook meat.DEF give
 ‘Who is it that the child cooked the meat for?’
- c. (Ká) wānā *(ā̀lì) ò̀gì lāmmú:?
 Q who ALI cook meat.DEF
 ‘Who cooked the meat?’

I follow Ferreira & Ko (2003) and Hiraiwa (2003; 2005) in assuming that these constructions involve overt movement of the goal to the Spec of the probe, *ātì*, thus making overt movement optional in the language. The fact that the gap can be found several clauses away and is subject to islands is evidence that this construction involves movement.

The gap can be found several clauses away. The *wh*-phrases originate from within the embedded clauses in (46).

- (46) a. (Ká) b^wā *(ā̀tì) fì wè:nì ā̀yìn bí:ká ò̀gì:?
 Q what ATI 2SG say C child.DEF cook
 ‘What did you say the child cooked?’
- b. (Ká) b^wā *(ā̀tì) fì pá:-chīm mì ò̀gì:?
 Q what ATI 2SG think 1SG cook
 ‘What do you think I cooked?’

Like the in situ construction discussed above, the left-peripheral Q behaves like movement, sensitive to familiar islands as seen in (47)–(51).

(47) *Complex DP island-relative clause*

- a. *(Ká) b^wā ātí fí á-yáalí [núrpók wāi ālì dà lá:ʔ]
 Q what ATI 2SG IMPF-love woman REL.PRO ALI buy PRT
 ‘What do you love the woman who bought?’
- b. *(Ká) b^wā ātí fí á-yáalí núrpók wāi ātí Azuma pòlì āyìn
 Q what ATI 2SG IMPF-love woman REL.PRO ATI Azuma think C
 wà dà lá:ʔ
 3SG buy PRT
 ‘What is it that you love the woman who Azumah thought she bought?’

(48) *Coordinate structure Constraint*

- *(Ká) b^wā ātí Azuma dà gbáj ālì?
 Q what C Azuma buy book CONJ
 ‘What did Azuma buy a book and?’

(49) *Because-clause*

- *(Ká) b^wā ātí bí:ká à lā John ali dà la jīja?
 Q what ATI child.DEF IMPF laugh John ALI buy PRT body
 ‘What is the child laughing because John bought?’

(50) *If-clause*

- *(Ká) b^wā ātí Asouk lí díjí āsī Apita dīn wé:ní āyìn Azuma dà?
 Q what ATI Asouk FUT cook if Peter PRT say C Azuma bought
 ‘What is it that Asouk will cook if Peter says Azuma bought?’

(51) *Adjunct Island*

- *(Ká) b^wā ātí Azuma g^wà ālì-ān dà yā:ʔ
 Q what ATI Azumah sleep without buy
 ‘What did Azuma sleep without buying?’

Another piece of evidence for overt movement comes from binding theory and reconstruction. Wh-movement does not obviate binding relations from the position from which movement took place. Consider the following examples in English. An R-expression cannot co-refer with a c-commanding pronoun, (52a), so *John* in the object DP cannot co-refer with the subject pronoun. When we move the object containing the R-expression *John* to a position where the subject no longer c-commands it, it still does not make the construction better, (52b). This follows from the observation that wh-movement does not obviate binding possibilities (in this case principle C violations). This observation is easily explained under the copy theory of movement (Chomsky 1995) where a moved element leaves behind a copy of itself, rather than a trace.

- (52) a. *Who thinks He₁ likes [which picture of John₁]?
 b. *Who wonders [Which picture of John₁] he likes?

Reconstruction effects are observed for the wh-phrase in the left periphery. As expected, in (53b), moving the wh-phrase to the left does not bleed the satisfaction of principle A.

- (53) a. Wà_i nà ká wà-dēk_i fōtō kūnā:?
3SG see Q 3SG-DEK picture which
'Which picture of himself did he see?'
- b. Ká wà-dēk_i fōtō kūnā ati wà_i nà:?
Q 3SG-DEK picture which ATI 3SG see
'Which picture of himself did he see?'

It is important to note, however, that the antecedent for the anaphor must be a pronoun. The construction becomes bad if the subject is replaced by an R-expression, (54b).

- (54) a. AJohn_i nà ká wà_i-dēk fōtō kūnā:?
John see Q 3SG-DEK picture which
'Which picture of himself did John see?'
- b. *Ká wà-dēk_i fōtō kūnā ati John_i nà:?
Q 3SG-DEK picture which C John see
'Which picture of himself did John see?'

A constraint like (55) seems to be responsible for the impossibility of demonstrating reconstruction effects with R-expressions.

- (55) An R-expression may not be linearly preceded by a nominal co-indexed with it.

Other data that support (55) independent of reconstruction are given below. In all the ungrammatical cases below, an R-expression follows a co-indexed pronoun or a reflexive. Even though the pronouns and anaphors do not c-command the R-expressions in (56), the sentence is still judged to be ungrammatical.⁶

- (56) a. *Wà_i màwá à-yā: John_i.
3SG mother.DEF IMPF-like John
'His mother likes John.'
- b. Wà_i màwá à-yā: wà_i.
3SG mother.DEF IMPF-like 3SG
'His mother likes him.'

⁶ What still remains as a puzzle and needs explanation under this sketch of an account is the contrast in (i)–(ii) where there also seem to be no reconstruction effects for principle C. Perhaps what the data is teaching us is that reconstruction is not obligatory for binding principle C. A solution to this might lie in detailed investigations of reflexives and pronouns generally in the language where precedence happens to play a critical role in the licensing of anaphors as noted. I therefore leave this open for future work.

- (i) a. *Wà_i nà ká John_i fōtō kūnā:?
3SG see John Q picture which
'Which picture of John did he see?'
- b. Ká John_i fōtō kūnā ati wà_i nà:?
Q John picture which C 3SG see
'Which picture of John did he see?'
- (ii) a. *Wà_i pà ká AJohn_i gāŋ kùnā fōtō:?
3SG take Q John side which photograph
'Which side of John did he photograph?'
- b. Ká AJohn_i gāŋ kùnā ātì wà_i pà fōtō:?
Q John side which C 3SG take photograph
'Which side of John did he photograph?'

- c. Ajohn_i màwá à-yā: wá_i.
 John mother.DEF IMPF-like 3SG
 ‘John’s mother likes him.’

5 Conclusion

The paper investigated the syntax of *wh-in-situ* through the lens of Bùlì. The data presented here show that the language has a Q-particle whose distributional properties are in many ways comparable to Q-particles previously identified for Tlingit (Cable 2007; 2010), Sinhala and Japanese (Hagstrom 2004; Kishimoto 2005). It was argued that the Q-particle project, thus making the language a Q-projecting language where the Q-particle takes a complement.

The data also show that *wh-in-situ*, even within the same language, can be interpreted either via covert movement or via special semantic treatments: focus-alternative computations or unselective binding. Covert movement is, strikingly, highly similar to overt movement. If this conclusion is right, then the discussion here provides further evidence for the mixed view that both movement and special semantic treatments are available for *wh-in-situ* (Pesetsky 2000; Beck 2006; Bruening & Tran 2006; Cable 2007; 2010; Kotek 2014).

Abbreviations

ACC = accusative, C = complementizer, CONJ = conjunction, DEF = definite, DEM = demonstrative, FUT = future, IMPF = imperfective, NEG = negation, P = (pre/post)-position, PL = plural, PRT = particle, Q = question, REL.PRO = relative pronoun, SG = singular, TOP = topic

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