In Bùlì, Covert Movement Licenses Parasitic Gaps

Kenyon Branan and Abdul-Razak Sulemana

1. Introduction

Parasitic gaps are constructions in which a gap that would normally be illicit may appear, provided there is a well formed gap in the sentence. An example of this is given in (1). (1a) shows, uncontroversially, that an object *wh*-phrase in English is fronted, leaving a gap in the canonical position of the object. (1b) shows, that an object *wh*-phrase cannot undergo fronting when the gap would appear in an adjuct. (1c) shows, however, that an object gap may appear in an adjunct—which is otherwise illicit—when there is a well-formed object gap also present in the sentence.

(1) **Parasitic gaps**

    a.   What did you destroy _____ after looking through these documents?

    b.   * What did you destroy these books after looking through _____?

    c.   What did you destroy _____ after looking through _____?

There is a long-standing generalization about the licensing of parasitic gaps: the movement chain that licenses a parasitic gap must be overt. Two types of theory have emerged dealing with parasitic gaps and this generalization:

#1 Theories in which this property of parasitic gaps is 'baked in'—the theory is explicitly constructed to disallow parasitic gap licensing by covertly moved elements.

Engdahl (1983), Kayne (1983), Nunes (2001), Assmann (2010), a.o.

#2 Theories in which this property of parasitic gaps is coincidental—covertly moved elements *should* be able to license parasitic gaps, but other factors conspire to keep this from happening.

Wahba (1995), Nissenbaum (2000)

In this paper, we argue that patterns of parasitic gap licensing in Bùlì suggest that the second sort of theory is on the right track—in-situ *wh*-phrases are, at least in principle, able to license parasitic gaps.

2. Overt movement, covert movement, and English parasitic gaps

As we have seen before, and see again in (2), overt movement licenses a parasitic gap.

(2) **Overtly moved *wh*-phrase licenses parasitic gap**
Which book did you say [that John read _____ [before putting a stamp on _____$_{pg}$]]

Interestingly, as we see in (3), *wh*-phrases that do not move overtly fail to license a parasitic gap. For the purposes of this discussion, we will call these *wh*-phrases "covertly moved" *wh*-phrases—we will shortly review some arguments that these *wh*-phrases do not move overtly.

(3) **Covertly moved *wh*-phrase doesn't**
*Who said [that John read which book [before putting a stamp on _____$_{pg}$]]

This is a longstanding generalization in the literature on parasitic gaps—first noted in Engdahl (1983). As a result, any theory of parasitic gap licensing must capture the generalization that in-situ, covertly moved *wh*-phrases cannot license parasitic gaps. How do we know that the lower *wh*-phrase in (2) undergoes covert movement? Several arguments to this effect have been made in the literature. The first argument has to do with the licensing of anaphors. It is well known that Ā-movement interacts with anaphor licensing in a number of ways. As we see in (4a), for instance, Ā-movement of a *wh*-phrase to the edge of an embedded clause allows a reflexive contained within the *wh*-phrase to be coindexed with an element in the matrix clause; this contrasts with (4b), where we see that an in-situ object does not have this property.

(4) **Overt movement feeds reflexive binding**

    a.   I asked Mary$_i$ [[which picture of herself$_i$] John bought _____]

    b.   * I asked Mary$_i$ [whether John bought [that picture of herself$_i$]]

In-situ *wh*-phrases appear to have similar exceptional properties when it comes to binding. As we see again in (5a), reflexives in English cannot be bound by elements outside of the clause they are in. The reflexive inside the object of the embedded clause isn't sufficiently local to the relevant element the matrix clause for the two to be coindexed. In (4b), we see that such coindexation is possible, so long as the reflexive is contained within a *wh*-phrase. Covert movement provides a way of understanding this exceptional binding property: the *wh*-phrase has moved, covertly, to a position sufficiently local to the relevant element for the anaphor within the *wh*-phrase to be bound. This position is comparable to the position that the *wh*-phrase in (4a) moves to overtly.

(5) **Covert movement has an effect on anaphor binding**

    a.   * Who told Mary$_i$ [that John bought [that picture of herself$_i$]]

    b.   Who told Mary$_i$ [that John bought [which picture of herself$_i$]]

Based on exx. from Nissenbaum (2000)

A second argument for the covert movement of *wh*-phrases comes from ACD resolution and relative clause extraposition. As we see in (6), an in-situ *wh*-phrase may contain an instance of ACD.

(6) ***Wh*-in-situ licenses ACD**
    Which girl invited which student that John didn't Δ?   *Pesetsky (2000)*

This of course contrasts with an in-situ object that is non-quantificational, as shown by (7).

(7) **Definite DPs do not license ACD**
    ?? Which girl invited that student that John didn't Δ?

If the *wh*-phrase undergoes covert movement, but the definite DP does not, this is what we expect. Covert movement of the *wh*-phrase out of the antecedent for ellipsis resolves the infinite regress problem that we see with ACD; (7) is ungrammatical because the definite DP cannot undergo this sort of covert movement.

Similarly, the ability of an in-situ *wh*-phrase to be construed with an extraposed relative clause suggests that the in-situ *wh*-phrase undergoes covert movement.

(8) **Extraposed relative clause is late merged to a higher copy of *which student***
    Which girl invited which student yesterday [~~which student~~ that John knows]?

Fox (2002) suggests that extraposition of relative clauses is contingent on covert movement. If this is right, the availability of extraposition in (8) suggests that the in-situ *wh*-phrase has moved, in much the same way that the availability of ACD does.

A third argument comes from focus intervention effects. In some languages, *wh*-phrases may not appear in the scope of focus operators such as *only*, as we see from Japanese in (9).

(9) **Focus intervention in Japanese**
*Hanako-sika nani-o yoma-nai no?
Hanako-only what-acc read-neg Q

'What did only Hanako read?'

One analysis of this effect [Pesetsky (2000), Beck (2006), Cable (2010), Kotek (2014)] involves proposals that there might be more than one way for in-situ *wh*-phrases to be interpreted. One way that apparently in-situ *wh*-phrases might be interpreted is through covert movement to the position at which they take scope; another is through some other mechanism [feature movement, for Pesetsky (2000), focus alternatives, for Beck (2006), Cable (2010), and Kotek (2014, to appear), a.o.]. Under these theories, only the latter sort of interpretive mechanism leads to the ungrammaticality that we see in (9). (9), then, is bad because the in-situ *wh*-phrase appears in the scope of the focus operator—given the assumption that Japanese makes use of a mode of interpretation for *wh*-phrases that does not make use of covert movement, which would bring the *wh*-phrase out of the scope of the focus operator.

We can see that, in English, overtly moved *wh*-phrases are not subject to the intervention effect. This is what we expect: the *wh*-phrase has moved overtly outside the scope of the focus operator.

(10) **No focus intervention with overtly moved *wh*-phrase**
What did only you give _____ to Mary?

Japanese *wh*-in-situ contrasts with English *wh*-in-situ, as shown by (11).

(11) **No focus intervention with [Superiority respecting] *wh*-in-situ**
What did only you give _____ to who?

Covert movement allows us to make sense of the difference between (10) and (11)—English *wh*-phrases undergo covert movement, and therefore are not actually in the scope of focus operators to their left.

In this section, then we have seen that in-situ *wh*-phrases share a number of properties with ex-situ *wh*-phrases. They exhibit similar interactions with anaphors. They both allow ACD and extraposition. And they both are not sensitive to the focus intervention effect. This suggests that in-situ *wh*-phrases undergo [covert] movement to a position comparable to ex-situ *wh*-phrases. However, we also saw that they differ in one respect: ex-situ *wh*-phrases license parasitic gaps, but in-situ *wh*-phrases do not.

3. Bùlì allows parasitic gap licensing by in-situ *wh*-phrases

In this section, we will establish that Bùlì does indeed have parasitic gap constructions, and that the gap may be construed with an in-situ *wh*-phrase, which undergoes covert movement. To do that, we will need to introduce some basic facts about Bùlì. Then we will establish that in-situ *wh*-phrases undergo covert movement s] and show that the parasitic gap constructions are otherwise like those of English.

Bùlì is a Mabia language spoken primarily in Sandema, a northeastern district of Ghana. It is an SVO language with optional *wh*-in-situ, as shown below.

(12) *Bi:ka dig lammu*
child cook meat

'The child cooked meat'

(13) *ka bwa ati bi:ka digi:*
KA what ATI child cook

'What did the child cook?'

(14) *Bi:ka dig ka bwa:*
child cook KA what

'What did the child cook?'

This does not appear to involve 'fake' *wh*-in-situ, involving derivational steps of the sort in (15). See Kayne (1998), Munaro et. al (2001), Etxepare & Uribe-Etxebarria (2005), Poletto and Pollock (2009), a.o. for analyses of *wh*-in-situ along these lines.

(15) Derivation of apparent *wh*-in-situ

    a.   [. . . *wh*]

    b.   [*wh* [. . . ~~*wh*~~]]   *Front* wh-*phrase*

    c.   [[. . . ~~*wh*~~] [*wh* ~~[. . . *wh*]~~]]   *Front remnant*

Evidence against this comes from the fact that the *wh*-phrase may appear sentence medially, as we see in (16). If the remnant movement analysis were on the right track, this would mean that the second object also undergoes movement in *wh*-in-situ contexts, to a position below the landing site of the *wh*-phrase. But Bùlì has an extremely rigid word order—it lacks scrambling and passive constructions, making the presence of such a movement operation somewhat mysterious.

(16) **Wh-phrases may appear sentence medially**
    Asouk te   ka wan gbanka:
    A.   give KA who book.DEF

    'Who did Asouk give the book?'

Furthermore, the relative ordering of objects in a double object construction is fixed. Such a movement operation would not be able to apply generally, but would appear just in cases where *wh*-phrases remain in-situ, sentence medially.

Having dispensed with the possibility that Bùlì *wh*-in-situ involves 'cloaked' overt movement followed by remnant movement of the constituent that once contained the *wh*-phrase, we will turn now to the question of how *wh*-in-situ in Bùlì is interpreted. Three diagnostics suggest that these in-situ *wh*-phrases are interpreted through covert movement.

First, *wh*-in-situ in Bùlì is island sensitive in the same way that overt movement is, as we see in (17).

(17) **Wh-phrases are island-sensitive**

    a.   **ka bwa ati bi:ka   aya:li nurpok* [*wai   ali da*   ____ *la:*]
          KA what ATI child.DEF likes   woman   REL.P ALI bought   DET

        'What does the child like the woman who bought?'

    b.   **Bi:ka   aya:li nurpok* [*wai   ali da   ka bwa la:*]
          child.DEF likes woman   REL.P ALI bought KA what DET

        'What does the child like the woman who bought?'

Covert movement gives us a way of understanding this: it is not possible to move a *wh*-phrase out of an island, either overtly or covertly. This means also that covert movement in Bùlì is more restricted than covert movement in English, if we take (18) to show that covert movement in English may escape islands.

(18) **Apparent island insensitivity with English *wh*-in-situ**
    Who likes the woman who bought what?

Sulemana (ms.) presents facts about pied-piping in Bùlì that might allow us to reconcile this apparent difference between English and Bùlì. As we see in (19), a *wh*-phrase in Bùlì may appear within an island, so long as the island as a whole undergoes pied-piping.

(19) **Pied-piping of an island allows a *wh*-phrase to appear inside the island**

    a.   *ka nurpok* [*wai   ali da   bwa la:*] *ati bi:ka   aya:li*
          KA woman   REL.P ALI bought what DET   ATI child.DEF likes

        'What does the child like the woman who bought?'

b. *Bi:ka   aya:li ka nurpok [wai   ali   da   bwa la:]*
child.DEF likes KA woman   REL.P ALI bought what DET

   'What does the child like the woman who bought?'

One possibility, suggested by Sulemana (ms.), is that the structure for English (18) is comparable to that in (19b). Both would involve pied-piping of an island that contains a *wh*-phrase to avoid an island violation, the crucial difference being that the equivalent of *ka*, which marks a constituent undergoing movement, either overt or covert. The interested reader should consult Sulemana (ms.) for a more detailed account.

As second argument for covert movement of in-situ *wh*-phrases in Bùlì comes from facts about binding. *Wh*-phrases in Bùlì have exceptional binding properties comparable to English. As we see in (20), reflexives contained in an object may not be bound long-distance. As we see in (21), reflexives contained in an object *wh*-phrase may be bound long distance, both when they are fronted and—crucially—when they remain in-situ.

(20)   **Wh-phrases have exceptional binding properties**

a. *Ajohn we:ni [ayin ba   nya [ba-dek   foto   ]]*
J.   said   that they saw   themselves picture

   'John said that they saw a picture of themselves'

b. **Ajohn we:ni [ayin ba   nya [wa-dek foto   ]]*
J.   said   that they saw   himself picture

   'John said that they saw a picture of himself'

(21) a. [*ka wa-dek foto   kuna:*] *ati Ajohn we:ni [ayin ba   nya* _____]
KA himself picture which   ATI J.   said   that they saw

   'Which picture of himself did John say they saw?'

b. *Ajohn we:ni [ayin ba   nya [ka wa-dek foto   kuna:]]*
J.   said   that they saw   KA himself picture which

   'Which picture of himself did John say they saw?'

This is comparable to the interaction between covert movement and binding that we saw in English.

(22)   **Covert movement has an effect on anaphor binding**

a.   * Who told Mary$_i$ [that John bought [that picture of herself$_i$]]

b.   Who told Mary$_i$ [that John bought [which picture of herself$_i$]]

Based on exx. from Nissenbaum (2000)

In (21b), covert movement of the *wh*-phrase feeds binding of the reflexive within it, in much the same way that covert movement of the *wh*-phrase in (22b) feeds binding.

A third argument comes from the absence of focus intervention effects in Bùlì, demonstrated in (23). Recall our discussion of this restriction from earlier: *wh*-phrases that are interpreted through movement, either overt or covert, are not subject to this restriction. If in-situ Bùlì *wh*-phrases are interpreted via covert movement, this is expected. The *wh*-phrase moves out of the scope of the focus operator, bleeding the intervention configuration.

(23) a. *Bi:ka mɛ dig   ka bwa:*
child also cooked KA what

   'What did the child also cook?'

b. *Bi:ka ɲini dig   ka bwa:*
child only cooked KA what

   'What did the child only cook?'

Having established that Bùlì *wh*-in-situ is interpreted through covert movement, we can turn now to the question of parasitic gaps in Bùlì. To begin, we will establish that Bùlì doesn't allow *pro* in object position. This is always a worry when investigating parasitic gaps—we must establish that the apparent gap is in fact a parasitic gap, and not some other sort of null category. Since Bùlì generally lacks *pro* in object position, this suggests that the apparent gaps we will see later in this discussion are not instances of *pro*, and are indeed null categories of the sort seen in English parasitic gap constructions.

(24) a. *Ajohn ka:si gbanka*
          J. destroyed book

      b. **Ajohn ka:si* _____
          J. destroyed

      'John destroyed the book'   'John destroyed it/*pro*'

Having established that Bùlì lacks *pro* in object position, which would be a potential confound for any apparent parasitic gap construction, we can turn now to the identification of a context in which a parasitic gap might appear. We saw earlier that parasitic gaps in English may appear in certain temporal adjuncts.[1] There is a class of adjuncts in Bùlì that are comparable to *without* adjuncts in English, as we see in (25). As shown in (25a-b), these adjuncts are islands for covert and overt extraction of *wh*-phrases, in much the same way that comparable adjuncts in English are. Likewise, as we see in (25c), null pronominals are not licensed in the object position of these adjuncts.

(25) **Adjunct islands in Bùlì**

      a. **[ka bwa] ati AJohn fali foto [ali an karimi _____ ya]*
              KA what   ATI J.   filed photo   without read   neg

          'What did John file the photo without reading?'

      b. ** AJohn fali foto [ali an karimi [ka bwa] ya]*
              J.   filed photo   without read   KA what   neg

          'What did John file the photo without reading?'

      c. **AJohn fali foto [ali an karimi _____ ya]*
              J.   filed photo   without read   neg

          'John filed the photo without reading (the photo/it).'

We now have all of the pieces we need to investigate parasitic gaps in Bùlì. We have established that *wh*-in-situ and ex-situ behaves more or less identically to *wh*-in-situ and ex-situ in English. We have also shown that there are contexts comparable to the contexts in English where parasitic gaps might be licensed. And we have defeased a potential confound involving null pronominals. As we see in (26a), Bùlì has parasitic gaps when there is over *wh*-movement. More interestingly, and crucially differing from English, *wh*-in-situ in Bùlì may also license parasitic gaps.

(26) **Overt and covert movement licenses parasitic gaps**

      a. *Ka gbaŋ kana$_i$ ati AJohn fa:li _____$_i$ [ali an karimi _____$_i$ ya]*
          KA book which ATI J.   filed   without reading   neg

          'Which book did John file without reading?'

      b. *AJohn fa:li ka gbaŋ kana$_i$ [ali an karimi _____$_i$ ya]*
          J.   filed KA book which   without reading   neg

          'Which book did John file without reading?'

These parasitic gaps are comparable to English parasitic gaps in a number of ways. For instance, as we see in (27), they cannot be licensed by a subject.

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[1]They may appear in a variety of other contexts as well, with varying degrees of acceptability. See Engdahl (1983) for an enumeration of these contexts, with corresponding acceptability judgements.

(27) **Wh-subjects do not license parasitic gaps**

    a.   *Ka wana ali fa:li gbanka*
        KA who ALI filed book

      'Who filed the book?'

    b.   * *Ka wana ali fa:li gbanka* [*ali ge AJohn an tu* _____ *ya*]
          KA who ALI filed book.DEF   without J.   neg meet   neg

      'Intended: Who filed the book without John meeting _____'

Furthermore, these parasitic gaps are themselves island sensitive, as in English. This is suggestive of an approach to parasitic gap licensing involving movement of a null operator, which we will adopt in the section to follow. The important point, for now, is that there is another parallel between English parasitic gaps and Bùlì parasitic gaps.

(28) **Parasitic gaps are themselves island sensitive**

    a.   * Which book did you read _____

                     [without first meeting the person [who wrote _____]]

    b.   *[*ka gbaŋ kana_i*] *ati AJohn karimi* _____ [*ali an nya* [*nurpok wai da*
         KA book which   ATI J.   read   without seeing   woman rel.pro buy

        _____ *la*] *ya*]
           det   neg

      'Intended: Which book did John read without seeing the woman who bought (it)'

    c.   * *AJohn karimi* [*ka gbaŋ kana_i*] [*ali an nya* [*nurpok wai da* _____ *la*]
        J.   read   KA book which   without seeing   woman rel.pro buy   det

        ya]
        neg

      'Intended: Which book did John read without seeing the woman who bought (it)'

The upshot of this section is this: Bùlì presents a clear challenge to Engdahl's generalization, since it has *wh*-in-situ with covert movement properties, which also license parasitic gaps. We have here established that *wh*-in-situ in Bùìì involves covert movement, and that the parasitic gap constructions in Bùlì are similar in several ways to English *wh*-in-situ. This begs the question: why should Bùlì allow parasitic gap licensing by in-situ *wh*-phrases, contrasting with English?

## 4. Implications for theories of parasitic gaps, and an account of Bùlì

In this section, we will discuss the implications of the facts presented in the previous section for theories of parasitic gap licensing, and construct an account of parasitic gap licensing that will allow us to capture this apparent point of cross-linguistic variation. We will see that the proposal made for Bùlì leads us to expect certain facts about relative clause extraposition and ACD, and that this expectation is borne out. Recall, from the outset of our discussion, that there are two classes of theories of parasitic gaps.

  #1 Theories in which this property of parasitic gaps is 'baked in'—the theory is explicitly constructed to disallow parasitic gap licensing by covertly moved elements.

  #2 Theories in which this property of parasitic gaps is coincidental—covertly moved elements *should* be able to license parasitic gaps, but other factors conspire to keep this from happening.

The facts we have just seen in the previous section from Bùlì suggest that the second class of theory is more likely to be on the right track. In this section, we will construct a theory that will allow for this variation, and identify the crucial factor that divides Bùlì from English. Our starting point is an account

of parasitic gap licensing from the second class: Nissenbaum (2000). Nissenbaum assumes that there is null operator movement in adjuncts that contain parasitic gaps. This, along with a modified definition of Predicate Abstraction, allows a moved *wh*-phrase to saturate both gaps. Nissenbaum (2000) proposes that the following structure is at play in parasitic gap constructions.

(29) a. What did John file _____ without looking through _____

   b.
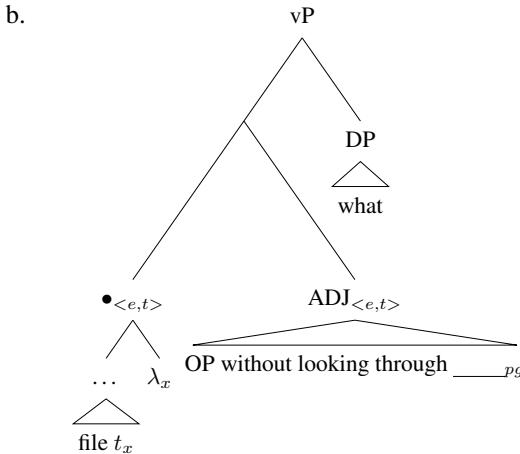
For Nissenbaum, and for us, the adjunct that contains the parasitic gap must be 'sandwiched' between a moved *wh*-phrase and the λ that binds the trace of that *wh*-phrase. A result of this is that the adjunct and its sister are of the same semantic type, and may be combined through Predicate Modification, and treated as a single property. As a result of this, the *wh*-phrase in a structure like (29) may saturate the trace both in the main clause and in the adjunct.

A covertly moved *wh*-phrase, however, cannot create the configuration in (29) when the derivation proceeds in a strictly cyclic fashion. Nissenbaum proposes that covertly moved elements must 'tuck-in' [Mulders (1997), Richards (1997)] below an overt element, under the assumption that covertly moved elements move later than overtly moved elements. This of course includes the adjunct in (29)—strictly cyclic covert movement cannot create the structure in (29), and therefore cannot license a parasitic gap.

Crucially for the account, the derivation in (30) must be blocked. If we allow late Merge into the system—and Nissenbaum (2000) presents some arguments that we must—then we will need a way to rule out derivations like (30), where late merge of an adjunct could create a parasitic gap licensing structure

(30) a. * Who filed what without looking through _____?

   b.
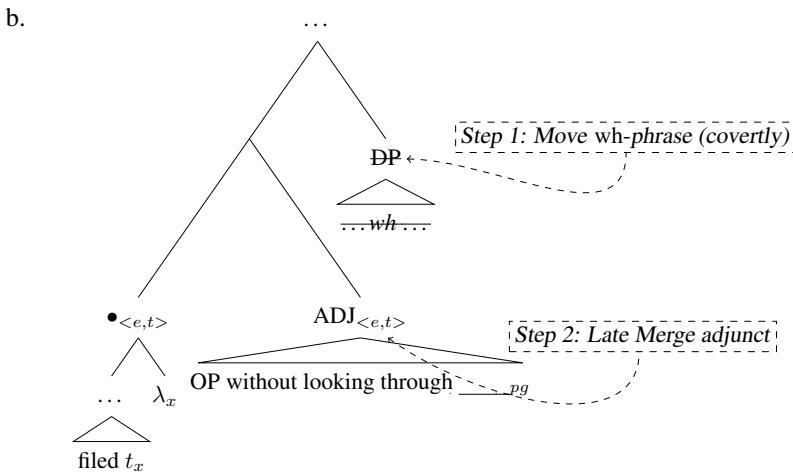
In (30), the *wh*-phrase in question has undergone covert movement, in a way that respects tucking-in. This covert movement operation is followed by late Merge of the adjunct, creating a structure that should license a parasitic gap. To block such a derivation, we follow Nissenbaum (2000) in assuming that late Merge is constrained by a restriction like (31), and Nissenbaum (2000) and O'Brien (2017) in assuming that covertly moved elements 'count' for this restriction.

(31) **Linear Edge Generalization:**
      Late Merge must target a linear edge of a phase.

(31) rules out the derivation in (30). The adjunct is not Merged at the linear edge of the vP phase, in violation of (31). The presence of the covertly moved element at the edge of the phase, in combination with (31), rules out the possibility of late Merge creating the structure in (30).

Engdahl's generalization, under this sort of account, falls out from independent restrictions on movement and Merge, namely: Tucking-in, and the LEG. The LEG allows us to understand the difference between English and Bùlì. We have just seen that a derivation that would allow covertly moved *wh*-phrases to license parasitic gaps is ruled out by the LEG: the presence of the covertly moved element at the right of the vP phase blocks late Merge of the parasitic gap containing adjunct in a position where it would otherwise be licensed. A [somewhat tentative] proposal to account for this difference is that covert movement in Bùlì targets a different position in the clause, allowing late Merge to create the parasitic gap licensing configuration.

More specifically: covert movement in Bùlì targets the left edge of vP, as in (32). This will allow a derivation in which late Merge may license a parasitic gap. After the *wh*-phrase undergoes covert movement, the adjunct which contains the parasitic gap may be late Merged at the right edge of the vP phase. This derivational step respects the LEG, allowing late Merge to create the parasitic gap licensing configuration in Bùlì. The difference between English on the one hand and Bùlì on the other, under this approach, has to do with the 'direction' of covert movement.

(32)
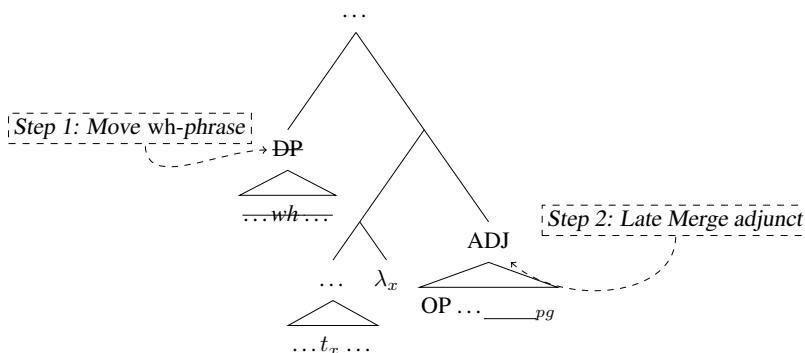
The key element of this proposal—that covert movement has 'directionality', and that there is a difference between leftward covert movement and rightward covert movement, may seem somewhat strange. It would therefore be good to see if there are other properties that correlate with the direction of covert movement. The proposal that covert movement in Bùlì is leftward captures certain facts about ACD and relative clause extraposition in Bùlì: namely, that it doesn't have them, as we see in (33).

(33) **Bùlì lacks relative clause extraposition and ACD**

   a. **A*Mary nya nurpok nwuli-nwuli [*wai   ali   da   gbanka la   ]
       M.   saw woman quickly   rel.pro ALI buy book   DET

       'Intended: Mary saw a woman quickly that bought the book.'

   b. **A*Mary da   ka mango kuna: [*kui   ati   A*John an   Δ   la   ]
       M.   bought KA mango which   rel.pro that J.   neg   DET

       'Which mango did Mary buy that John didn't?'

Recall that relative clause extraposition and ACD were diagnostics for covert movement in English. Late Merge of the relative clause to a higher, unpronounced copy of the nominal it is construed with results in the linear order for (34a) and resolves the infinite regress problem associated with ACD in (34b) [Fox (2002)]. Crucially for these accounts, covert movement is to the right, as we have schematized.

(34) a. Mary saw [[a woman] briefly]] [~~a woman~~ [that bought the book]]

  b. Which mango did Mary [buy ~~which mango~~] [~~which mango [that John didn't Δ]~~]

The comparable Bùlì sentences in (33) are correctly ruled out, given that covert movement is to the left in Buli. In (33a), there is no higher copy of the *wh*-phrase that is to the right of the adverb. Thus there is no position to the right of the adverb for the relative clause to late Merge to. The logic is similar for (33b): there is no position outside of vP for the relative clause to adjoin to that will result in that linear order. The absence of rightward covert movement in Bùlì, then, correlates with the absence of constructions that involve derivations involving rightward covert movement.

5. Recap and conclusion

This paper involved a discussion of a long-standing generalization about parasitic gaps: that they are not licensed by *wh*-in-situ. We presented novel evidence from Bùlì, a Mabia language spoken primarily in Ghana, that suggests that covertly moved *wh*-phrases may in principle license parasitic gaps. Bùlì therefore presents a clear challenge for theories of parasitic gap licensing that have Engdahl's generalization 'baked in'. This suggests that the right theory of parasitic gap licensing is one in which the generalization is derived from independent factors, which need to be subject to cross-linguistic variation. We presented such an account, and suggested that one of the relevant factors that results in this generalization holding is the direction of covert movement, showed how this would capture the difference between Bùlì and English, and noted that it correctly predicts other facts about Bùlì relative clause constructions. This of course raises many questions about the concepts of 'leftward' and 'rightward' covert movement, which we will leave a topic for future research.

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