



- Plan:**
- Review movement diagnostics:
    - Intervention effects
    - Island effects
    - Interactions
  - Question formation in Sinhala (crosslinguistic support)
  - Question formation in Premodern Japanese (historical support)

## 2. Intervention effects

The first kind of evidence we will look at comes from “intervention effects.” Assuming that syntactic movement is constrained to be as “short” as possible, an “intervention effect” occurs if a movement which is required for well-formedness is longer than another movement which could have occurred instead. The idea is illustrated in (3); here, X cannot move *over* Y if Y was eligible for movement, since moving Y would result in a shorter move.

- (3)
- 
- Y intervenes** for movement of X if Y is equally eligible to move, since Y is closer to the target of movement than X was.

Taking movement to be driven by a requirement of the target of movement, we can encode this as the principle *Attract Closest*, stated in (4).

- (4) ***Attract Closest***  
 Movement is motivated by the need to check a feature.  
 Only the closest element with the relevant feature is eligible for movement.

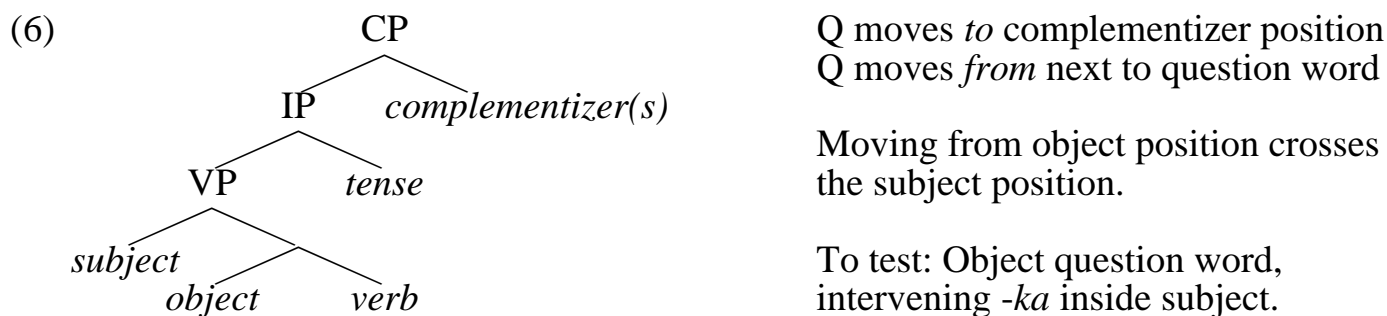
With respect to Japanese questions, this means that Q-movement is motivated by some requirement of a complementizer or complementizer-like element, and that the closest *-ka* to that complementizer moves to satisfy the requirement.

With this theory of movement in mind, we can now test to see if Q-movement exhibits the intervention effects we would expect to find if *-ka* in questions really moves from inside the clause. First, we locate other instances of *-ka*, like those in the sentences in (5). In (5a), we see that *-ka* can be used to mean ‘or’, as in *John-ka Bill* ‘John or Bill’. In (5b), we see the example from before, where *-ka* is used as part of the indefinite *dareka*, which means ‘someone’. Supposing that this *-ka* is the same morpheme as the *-ka* which is found at the end of questions, we can now test what happens if one of these other kinds of *-ka* is placed along the hypothesized path of Q-movement.

Finding intervenors for *-ka*-movement: Independent instances of *-ka*.

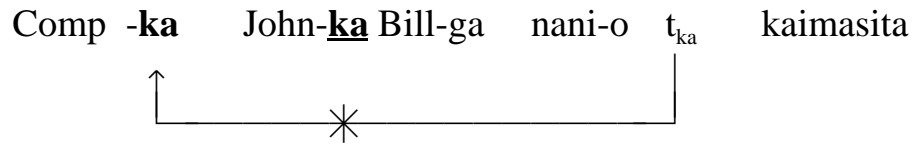
- (5) a. John-**ka** Bill-ga hon-o kaimasita. *disjunctive*  
 John-or Bill-NOM book-ACC bought.POLITE  
 ‘John or Bill bought a book.’
- b. dare**ka**-ga hon-o kaimasita. *indefinite forming*  
 someone-NOM book-ACC bought.POLITE  
 ‘Someone bought a book.’

We will assume a clause structure of Japanese roughly as diagrammed in (6), abstracting away from various irrelevant details. What is important here is that the place where *-ka* moves *to* in questions is hierarchically above the subject. This means that if *-ka* were to move from next to a question word in object position, the path of movement would cross the subject. Therefore, we can test for intervention effects with object question words and intervenors—like the independent uses of *-ka* illustrated in (5)—as part of the subject.

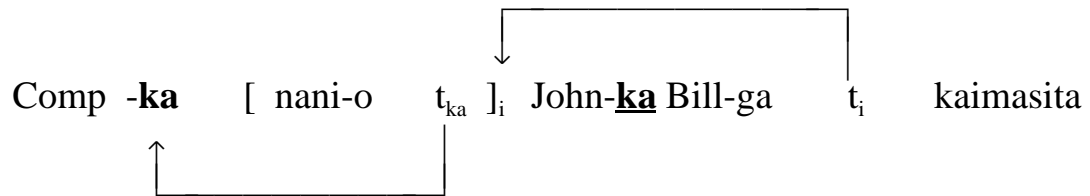


Hoji, in his 1985 thesis, tested exactly this configuration (although from a somewhat different theoretical perspective). He observed that when either disjunctive *-ka* or the indefinite *dareka* appear in *wh*-questions, the word order is restricted. In general, Japanese word order is fairly free, but in just these cases, the question word must precede the other instance of *-ka*. So, (7a) is ill-formed because *John-ka Bill* ‘John or Bill’ precedes *nani* ‘what’—that is, the other *-ka*, here the one meaning ‘or’, stands between the object position and the complementizer position. If the order of subject and object is reversed, as it is in (7b), the question is fine. Let us assume (as is standard) that this “scrambling” in (7b) that allows the object to precede the subject is movement of the object to a position higher in the tree (for example, adjunction to IP). The fact that (7b) is well-formed indicates that *-ka* can move from this higher position to the complementizer without having to cross the other *-ka* that is part of the subject.

- (7) a. ?\* John-**ka** Bill-ga nani-o kaimasita **ka?**  
 John-or Bill-NOM what-ACC bought.POLITE **Q**  
 ('What did John or Bill buy?')



- b. nani-o<sub>i</sub> John-**ka** Bill-ga  $t_i$  kaimasita **ka?**  
 what-ACC John-or Bill-NOM bought.POLITE **Q**  
 'What did John or Bill buy?'



- (8) a. ?\* dare**ka**-ga nani-o kaimasita **ka?**  
 someone-NOM what-ACC bought.POLITE **Q**  
 ('What did someone buy?')

- b. nani-o<sub>i</sub> dare**ka**-ga  $t_i$  kaimasita **ka?**  
 what-ACC someone-NOM bought.POLITE **Q**  
 'What did someone buy?'

- (9) a. dare-ga sake-**ka** beeiru-o nomimasita **ka?**  
 who-NOM sake-or beer-ACC drank.POLITE **Q**  
 'Who drank sake or beer?'

- b. ?\* [sake-**ka** beeiru-o]<sub>i</sub> dare-ga  $t_i$  nomasita **ka?**  
 sake-or beer-ACC who-NOM drank.POLITE **Q**  
 ('Who drank sake or beer?')

This is exactly what Attract Closest and the hypothesis of Q-movement led us to expect. If Q-movement starts from object position, it crosses the subject—and if, as in (7a) and (8a), the subject contains an independent instance of *-ka*, this movement will violate Attract Closest, and will be ill-formed. The intervention effects reviewed in this section therefore support the Q-movement hypothesis.

### 3. Island effects (or a lack thereof?)

Now, let us turn to look at the effect of “islands”, which serve as a second diagnostic for movement. Movement generally cannot cross island boundaries, which include relative clauses and adverbial adjuncts. This is taken to be the source of the ill-formedness of the English questions in (10)—the question word *what* has been moved *from* a position inside an island *to* a position outside the island.


- (10) a. \* What<sub>i</sub> did John meet [<sub>island</sub> the man who wrote t<sub>i</sub> ]?  
 b. \* What<sub>i</sub> did Mary leave [<sub>island</sub> after John bought t<sub>i</sub> ]?

So let us suppose that movement can never cross island boundaries. In the context of the claim I am making in this talk, that Japanese *-ka* moves to its surface position from inside the clause, we would expect that putting an island boundary along the path of movement should render a question ill-formed, much like in (10a). However, at first sight, this seems *not* to be the case. For example, Japanese has no difficulty with questions that have question words inside islands, as shown in (11). So, in (11a), the question word *nani* ‘what’ is inside a relative clause, but the question is well formed.

#### Japanese allows question words inside islands

- (11) a. Taroo-ga [<sub>island</sub> Hanako-ni **nani**-o ageta hito-ni ] aimasita **ka**?  
 Taroo-NOM Hanako-DAT **what**-ACC gave man-DAT met.POLITE Q  
 ‘What did Taro meet the man that gave *t* to Hanako?’  
 b. Taroo-ga [<sub>island</sub> Hanako-ga **nani**-o yomu maeni ] dekakemasita **ka**?  
 Taroo-NOM Hanako-NOM **what**-ACC read before left.POLITE Q  
 ‘What did Taro leave before Hanako read *t*?’

Given our assumptions, we can only conclude that in (11), Q-movement does *not* cross the island boundary—that is, that *-ka* does not move to its surface position from *inside* the island. Rather, what movement there is must have taken place from *outside* the island. This scenario is illustrated in (12); *-ka* moves from outside the island to its clause-final position.

- (12) [<sub>island</sub> ... nani ... ] ... t<sub>ka</sub> ... ka ?  


This state of affairs verges on making islands useless as a diagnostic for movement, since if *-ka* can always move from outside the island we will never see island effects. However, it turns out that there is a way to tell where Q-movement originated, with the help of the emphatic particle *ittai*. In a simple question like (13), *ittai* before the question word *nani* adds an emphatic meaning, something like English ‘what in the world?’.

An example of the emphatic particle *ittai*

- (13) John-ga **ittai nani-o** kaimasita ka?  
 John-NOM **ittai what-ACC** bought.POLITE Q  
 ‘What in the world did John buy?’

The *ittai* particle appears to have a close relation to the question particle *-ka*. It is generally possible to signal a question in Japanese solely through intonation, without a final *-ka*, as in (14a). However, a question like (14b) with *ittai* sounds much worse when it lacks *-ka*.

*ittai* requires presence of *-ka*—without *ittai*, *-ka* can sometimes be dropped.

- (14) a. Taroo-ga nani-o tabeta?  
 Taroo-NOM what-ACC ate  
 ‘What did Taro eat?’
- b. ?? Taroo-ga **ittai** nani-o tabeta?  
 Taroo-NOM **ittai** what-ACC ate  
 (‘What in the world did Taro eat?’)

The position of *ittai* by the question word (where Q-movement is hypothesized to start) and its apparent connection to the ‘Q’ particle *-ka* suggests a diagnostic use to which *ittai* can be put. Specifically, *ittai* seems to “mark” the place from which Q-movement occurred—*ittai* seems to get “left behind” when *-ka* moves. This means that we can use *ittai* to test directly what happens if Q-movement crosses an island boundary. Consider the questions in (15), which are the questions from (11) but with *ittai* added next to the question word inside the island. Since *ittai* gets “left behind” when *-ka* moves, this configuration implies that Q-movement must have crossed an island boundary (starting from inside, ending up outside) in (15), and so these questions are ill-formed, as we would expect.

**Hypothesis:** *ittai* gets left behind when *-ka* moves

*ittai* inside an island  $\Rightarrow$  *-ka* moved out of the island  $\therefore$  ill-formed

- (15) a. \* Taroo-ga [ <sub>island</sub> Hanako-ni **ittai nani-o** ageta hito-ni ]  
 Taroo-NOM Hanako-DAT **ittai what-ACC** gave man-DAT  
 aimasita **ka**?  
 met.POLITE **Q**  
 (‘What in the world did Taro meet the man that gave *t* to Hanako?’)

- b. \* Taroo-ga [<sub>island</sub> Hanako-ga **ittai nani-o** yomu maeni ]  
 Taroo-NOM Hanako-NOM **ittai what-ACC** read before  
 dekakemasita **ka?**  
 left.POLITE **Q**  
 ('What did Taro leave before Hanako read *t*?)

Interestingly enough, if *ittai* appears just outside the island, as in (16), the question is well-formed. The structure of (16) is presumably just like (11a), where *-ka* moves from a position outside the island to its surface position at the end of the clause.

*ittai* just outside an island, fine (*-ka* moves from outside the island)

- (16) Taroo-ga **ittai** [<sub>island</sub> Hanako-ni **nani-o** ageta hito-ni ]  
 Taroo-NOM **ittai** Hanako-DAT **what-ACC** gave man-DAT  
 aimasita **ka?**  
 met.POLITE **Q**  
 'What in the world did Taro meet the man that gave *t* to Hanako?'

Wrapping up what we've seen in this section, Japanese allows question words inside islands, indicating that in such cases *-ka* moves from a position outside the island to its surface position. Using *ittai* to mark the launching site of *-ka*, we also saw that a question in which *-ka* is forced to move across an island boundary is ill-formed, as expected.

#### 4. Islands and intervention effects

There is another diagnostic which is sensitive to the path of Q-movement that we can use to corroborate the conclusion that *-ka* moves from outside islands containing a question word. This diagnostic is the intervention effect discussed back in section 2.

The idea is this: Recall that "intervention effects" occur when another *-ka* is along the path of Q-movement. Now, when a question word is inside an island, we hypothesized that Q-movement starts outside the island. This means that Q-movement should not cross over anything *inside* the island, and so there should be no intervention effects inside an island. Put at its most counterintuitive, a question which is ill-formed due to an intervention effect should be *improved* by embedding it in an island.

Perhaps surprisingly, this prediction is borne out. Recall the intervention case from before, repeated as (17). (17a) is ill-formed because the other *-ka*—here the particle meaning 'or'—is between *nani* 'what' and the complementizer level of the clause structure. (17b) is fine because *nani* (and thus the place from which Q-movement occurs) is scrambled to a position above the other *-ka*.

- Idea:**
- Independent *-ka* blocks Q-movement ("intervention effect")
  - Q-movement takes place from *outside* of islands.
  - Q-movement should be *insensitive* to intervenors inside an island

Recall: Paradigm showing intervention effect.

- (17) a. ?\* John-**ka** Bill-ga nani-o kaimasita **ka?**  
John-or Bill-NOM what-ACC bought.POLITE **Q**  
(‘What did John or Bill buy?’)
- b. nani-o<sub>i</sub> John-**ka** Bill-ga t<sub>i</sub> kaimasita **ka?**  
what-ACC John-or Bill-NOM bought.POLITE **Q**  
‘What did John or Bill buy?’

Now, consider (18). In (18), we have embedded the questions from (17) inside an adverbial island. Counterintuitively—but as predicted—the question improves. In particular, (18a) is a well-formed question, despite the fact that *John-ka Bill* precedes the question word *nani*. Comparing (18a) to (18b) shows that the relative order between the disjunction and the question word does not matter when they are inside an island—unlike in (17). This is simply because the path of Q-movement never crosses the subject inside the island, regardless of its order with respect to the question word.

Embed “intervention effect” in an island—becomes well-formed (order becomes free)

- (18) a. Mary-wa [<sub>island</sub> John-**ka** Bill-ga nani-o katta ato de ]  
Mary-TOP John-or Bill-NOM what-ACC bought after  
dekakemasita **ka?**  
left.POLITE **Q**  
‘Mary left after John or Bill bought what?’
- b. Mary-wa [<sub>island</sub> nani-o<sub>i</sub> John-**ka** Bill-ga t<sub>i</sub> katta ato de ]  
Mary-TOP what-ACC John-or Bill-NOM bought after  
dekakemasita **ka?**  
left.POLITE **Q**  
‘Mary left after John or Bill bought what?’

## 5. Question formation in Sinhala

**Sinhala:** Indo-European, spoken in Sri Lanka, SOV with scrambling, *wh*-in-situ.

We have now developed the proposal in considerable detail based only on the facts from Japanese. At this point, let us switch gears and consider question formation in a different language, which although unrelated to Japanese will provide support for the hypotheses we have been developing. The language we will consider is Sinhala, an Indo-European language spoken in Sri Lanka. Sinhala shares with Japanese the basic word order Subject-Object-Verb, and the ability to “scramble” the surface word order. In Sinhala as in Japanese, there is no obligatory movement of question words.

Compare the declarative sentence meaning ‘Chitra bought that book’ in (19) with the related question ‘What did Chitra buy?’ in (20). There are three features to notice about the question. First, *mokak* ‘what’ in (20) appears in the same place as the object in its declarative counterpart. Second, the question word is followed by a particle *də*, which I have glossed as ‘Q’. Third, the verb appears in a special form, as indicated by the final vowel (which has changed from *-a* to *-e*).

- |      |  |   |
|------|--|---|
| (19) | Chitra ee potə gatta.<br>Chitra that book bought<br>‘Chitra bought that book.’                         | <i>Sinhala</i>  |
| (20) | Chitra <b>mokak</b> <b>də</b> gatte?<br>Chitra <b>what</b> <b>Q</b> bought-E<br>‘What did Chitra buy?’ | <p><i>Question word remains in situ.</i></p> <p><i>Question word followed by Q.</i></p> <p><i>Verb takes special “-e” form.</i></p> |

The proposal I would like to defend here is that the particle *də* in the Sinhala question in (20) directly corresponds to the particle *-ka* in Japanese questions discussed previously—with the important difference being that in Sinhala we see the particle in its pre-movement position, whereas in Japanese we see the particle in its post-movement position.

To increase the plausibility of identifying Japanese *-ka* with Sinhala *də*, let me point out two parallels between them. Recall from the beginning of this talk that in Japanese, a question word with *-ka* after it—like *dareka* in (21)—is interpreted as an indefinite, here ‘someone’, built of *dare* ‘who’ and *-ka*.

Reasons to believe Sinhala *də* corresponds to Japanese *-ka*: (a) Wh+Q = Indefinite

- |      |  |                 |
|------|--|-----------------|
| (21) | <b>dareka</b> -ga hon-o kaimasita.<br><b>someone</b> -NOM book-ACC bought.POLITE<br>‘Someone bought a book.’ | <i>Japanese</i> |
|------|--|-----------------|

Sinhala *də* has the same property. When it appears after a question word in a declarative sentence like (22), it also yields an indefinite interpretation. Here, *mokak də*, built of *mokak* ‘what’ and *də*, means ‘something’.

- |      |  |                |
|------|--|----------------|
| (22) | Chitra <b>mokak</b> <b>də</b> gatta.<br>Chitra <b>what</b> <b>Q</b> bought<br>‘Chitra bought something.’ | <i>Sinhala</i> |
|------|--|----------------|

A second point of parallelism between Japanese *-ka* and Sinhala *də* is that both are used in yes-no questions. In each language, a yes-no question can be formed by appending the corresponding particle to a declarative sentence. So, in Japanese, the question ‘Did Taro buy a book?’ in (23a) is formed by appending *-ka* to the sentence in (23b) which means ‘Taro bought a book.’ In Sinhala, the question ‘Did Chitra buy that book?’ in (24a) is formed by appending *də* to the sentence in (24b) which means ‘Chitra bought that book.’

Reasons to believe Sinhala *də* corresponds to Japanese *-ka*: (b) declarative+Q = y/n ques.

- (23) a. Taroo-ga hon-o kaimasita. Japanese  
 Taroo-NOM book-ACC bought.POLITE  
 ‘Taro bought a book.’
- b. Taroo-ga hon-o kaimasita **ka?**  
 Taroo-NOM book-ACC bought.POLITE **Q**  
 ‘Did Taro buy a book?’
- (24) a. Chitra ee potə gatta. Sinhala  
 Chitra that book bought  
 ‘Chitra bought that book.’
- b. Chitra ee potə gatta **də?**  
 Chitra that book bought **Q**  
 ‘Did Chitra buy that book?’

Accepting that Japanese *-ka* corresponds to Sinhala *də*, with the hypothesis that the surface position of Sinhala *də* reflects the pre-movement position of Japanese *-ka*, the next logical step is to look at questions involving islands. Recall that our hypothesis based on Japanese was that Q-movement occurs from outside the island in such questions. We were led to this by the fact that question words are well-formed inside islands in Japanese. In Sinhala, we also find that question words are allowed inside islands—but only if *də* appears *outside* the island. So, for example, (25a) is ill-formed because *də* appears next to the question word inside the island. (25b), on the other hand, is fine because *də* appears just outside the island. This is exactly the structure we hypothesized for Japanese, but in Sinhala we can actually see the pre-movement position of Q on the surface.

Sinhala: Question words allowed in islands—but **only** if *də* is outside.

- (25) a. \* [island Chitra **monəwa də** kanə koṭə ] Ranjit pudumə unee ?  
 Chitra **what Q** ate when Ranjit surprise became-**E**  
 (‘Ranjit was surprised when Chitra ate what?’)
- b. [island Chitra **monəwa** kanə koṭə ] **də** Ranjit pudumə unee ?  
 Chitra **what** ate when **Q** Ranjit surprise became-**E**  
 ‘Ranjit was surprised when Chitra ate what?’

Tying this all together, the pattern in (25) suggests that, although *də* appears in its “pre-movement” position, there still *is* a movement relation between the surface position of *də* and the edge of the clause. That is, the reason that *də* cannot be separated from the edge of the clause by an island boundary is that *də* moves, just like *-ka* in Japanese—except that while Japanese *-ka* moves overtly, Sinhala *də* moves “covertly.”

This is where the special verb form that appears in Sinhala questions comes in. Recall that in questions, the verb appears in a special form, ending in “-e”. Our assumption

about movement has been that it is motivated by the need to “check a feature” or satisfy a requirement at the landing site of movement. So, in questions, there is some requirement of the complementizer system that movement of Q can satisfy. In Sinhala, the special verbal suffix *-e* can be viewed as an overt morphological realization of this “unchecked feature”—it indicates that there will be a “covert movement” to satisfy the requirement it reflects.

- (26) The Sinhala *-e* verbal form is a morphological reflection of an unchecked feature in the complementizer system (the feature which drives movement of *də*).

## 6. Premodern Japanese *kakari-musubi*

It is worth pointing out that we can find, in the history of Japanese itself, evidence of a stage which is striking similar to modern Sinhala. That is, Japanese seems to have historically changed from a language with “covert Q-movement” to the present-day language with “overt Q-movement.”

In Premodern Japanese, questions often took a form referred to as *kakari-musubi*, where *-ka* would surface next to a question word and the verb would surface in a special (attributive) form. An example is given in (27). The question particle is the familiar *-ka*, here attached to the question word *tare* ‘who’. The verbal suffix glossed as ‘M’ (for *musubi*) appears in these questions, quite parallel to the *-e* suffix in Sinhala.

Premodern Japanese: Q next to question words, verb takes special (*musubi*) form.

- (27) **tare-ka** mata hanatatibana-ni omoi-idemu. *Premodern Japanese*  
**who-Q** again flower.orange-DAT remember-M  
 ‘Who will again remember (me) at the time of the mandarin orange flower?’  
 (*Shin Kokin Wakashū* [1205]:3)

Although we of course do not have access to native speaker judgments of Premodern Japanese, there are some recorded cases in which question words appear inside islands—and in these cases, *-ka* appears not next to the question word inside the island but rather just outside the island. An example showing this is given in (28). Again, this is just like the behavior of *də* in modern Sinhala.

As in Sinhala, Q appears just outside of islands.

- (28) [<sub>island</sub> **ika** yoo naru kokorozasi aramu hito-ni ]-ka awamu to obosu.  
**how** kind is love have person-DAT-Q wed that think-M  
 ‘[What kind of love]<sub>i</sub> do you think you would want to marry a person that has <sub>i</sub>?’  
 (*Taketori Monogatari* [c. 900])

## 7. Summary and conclusion

Let me end at this point with a reiteration of the proposal. In Japanese and Sinhala *wh*-questions, there is a question particle which moves from a clause-internal position to a clause-peripheral position. This movement begins from a position next to the question word except if that question word is in an island, in which case the movement begins just outside the island.

(29) “Q-movement”— In *wh*-questions (Japanese, Sinhala), ‘Q’ moves.



## References and pointers to (some of many) previous discussions in the literature

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Relating *dareka* and *dare...ka*: Kuroda (1965), Ogawa (1976), Nishigauchi (1990).  
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