1. Introduction

Based on in-depth study of Tlingit, an endangered and under-documented language of North America, Seth Cable's *The Grammar of Q: Q-Particles, Wh-Movement, and Pied-Piping* puts forth a novel syntactic and semantic analysis of wh-questions of human languages. Its central claim is that it is Q-particles not wh-words that bear the features triggering wh-fronting. The Q-based analysis brings with it the following valuable results; (i) the elimination of 'pied-piping' (chapters 2, 4, and 5), (ii) a semantics for wh-questions which correctly interprets pied-piping structures without any special mechanisms (chapters 2 and 4), (iii) a unified account of the constraints on adposition stranding and left-extraction (chapters 2 and 4), (iv) a typology of wh-question formation (chapter 3), (v) a syntax and semantics for multiple wh-questions which relates the presence of Superiority Effects to the absence of Intervention Effects (chapter 4), and (vi) a theory of the constraints on pied-piping structures (chapter 5). This book is certainly an indispensable reading not only for scholars interested in Tlingit and other Na-Dene languages but also for those seriously concerned with the syntax and semantics of wh-questions of human languages. This paper first takes an overview of the Q-based analysis of wh-questions, and then suggests a way of extending the Q-based analysis to adjunct wh-questions.
2. An Overview

2.1 The Q-based Analysis of Tlingit Wh-Questions

Contrary to the widely-accepted view that wh-fronting involves some syntactic relation between interrogative C and a wh-word, Cable argues that wh-fronting rather involves a probe-goal relation between C (more precisely, Force) and a Q-particle c-commanding the wh-word. Fronting of the wh-word is a by-product of fronting the QP projected by this Q-particle, as shown by wh-questions in Tlingit (Cable 2010:7):

(1) Daa sá i éesh al'ón?

what Q your father he.hunts.it

'What is your father hunting?'

(2) [CP [QP daa [Q sá]] [IP [DP i éesh] [VP t al'ón]]]

Since the Q-particle sá c-commands the wh-word daa 'what' and projects its own projection QP, this QP projection necessarily contains the wh-word; fronting of the QP has as a secondary consequence the appearance of the wh-word in the left periphery.

2.2 Consequences of the Q-based Analysis

Cable shows that the Q-based analysis of wh-questions brings about a number of valuable results. As space is limited, however, I will only look at two major consequences of the Q-based analysis, i.e. a typology of wh-questions and the elimination of 'pied-piping'.
2.2.1 A Typology of Wh-Questions

Cable argues that the Q-based analysis is not peculiar to Tlingit wh-questions but rather underlines the structure of wh-questions of all human languages. Languages differ depending on (i) whether the Q-particle has any phonological content or not, (ii) whether the Q-particle takes its sister as complement (Q-projection languages) or is adjoined to its sister (Q-adjunction languages), and (iii) whether movement of a Q-projection is overt or covert.

In Tlingit wh-questions like (1), the Q-particle, which has a Q-feature, is pronounced as sá. Tlingit is a Q-projection language in that the Q-particle sá takes its sister as complement, forming QP. On the assumption that this QP also bears the Q-feature, it is the first node bearing the Q-feature to be probed by the interrogative C. C agrees with this QP, which moves into the CP domain, as represented in (2). He argues that the Q-based analysis of Tlingit wh-questions can be extended to the wh-questions of the more familiar wh-fronting languages like English. English differs from Tlingit only in that the Q-particles in English are phonetically null, as shown below:

(3) [\text{\text{\text{CP [Q} \text{What Q]} [did [IP you read t]]]}]

\text{\text{\text{\text{\text{\text{Q}\text{-\text{projection}}}}}}}

The Q-based analysis can also accommodate wh-in-situ languages. He argues that the wh-in-situ languages consist of two distinct syntactic types, i.e. Sinhara-type languages and Japanese-type languages. Sinhara, a Q-projection language, differs from Tlingit
only in that QP-movement is covert. The Sinhara wh-question (4), for instance, is derived as represented in (5) (where the -e suffix which is glossed as '-E' encodes the scope of a wh-word):

(4) Chitra monǝwa dǝ gatte?

Chitra what Q bought-E

'What did Chitra buy?' (Kishimoto 2005: 3)

(5) [CP [QP monǝwa [Q dǝ]] [IP Chitra [VP t gatte]]]

Japanese differs from Sinhara only in that Japanese is a Q-adjunction language. Since the Q-particle ka in Japanese is adjoined to its sister, the node immediately dominating Q and its sister is not a QP but is of the same type as the sister of Q. Hence, attraction of the Q-feature into the CP domain entails that only the Q-particle ka moves, leaving its sister in its original position. The derivation of the Japanese wh-question (6), for example, proceeds as represented in (7):

(6) John-wa nani-o kaimasita ka

John-TOP what-ACC bought Q

'What did John buy?'

(7) [CP [IP John-wa [VP [DP [DP nani-o] t] kasimasita] [Q ka]]]

\[ \text{Covert QP-fronting} \]

\[ \text{Covert Q-movement} \]

2.2.2 Elimination of 'Pied-Piping'

The Q-based analysis enables us to eliminate the concept of 'pied-piping'. In Tlingit, the Q-particle sá always marks the right edge of what is 'pied-pied' as shown in (8) (Cable 2010: 8):
Aadóo yaagú sá ysiteen?

'Whose boat did you see?'

Under the Q-based analysis of 'pied-piping', the derivation of (8) proceeds as represented below:

(9) [CP [QP [DP Aadóo yaagú] [Q sá]] [IP [CP pro] [VP t ysiteen]]

The 'pied-piping' structure is simply a case where the Q-particle sá has as its sister a phrase larger than the maximal projection of the wh-word, i.e. the DP aadóo yaagú 'which boat' in (9). By adopting such an analysis, we can assume the null hypothesis that if an operation targets the features of a given lexical item, i.e. Q in wh-fronting, it applies only to the maximal projection of that lexical item, i.e. QP in this case.

He further argues that the Q-based analysis also explains 'limited pied-piping' in languages like English. In English-type languages, neither 'piped-piping' past islands nor 'pied-piping' past lexical categories is permitted (Cable 2010: 144):

(10) a.* [DP A book [CP that who wrote]] did you buy?

b.* I wonder [CP [NP pictures of whom] John bought]?

This is in contrast with languages like Tlingit where pied-piping is not 'limited':

(11) [NP [CP Wáa kwligeyi] xáat ] sá i tuwáa sigóo

He claims that in 'limited pied-piping languages', the Q-particle
must agree with the wh-word. Q/Wh-Agreement, however, is blocked
by the island in (10a) and the Phase Impenetrability Condition in
(10b) given that every lexical projection (VP, NP, AP) is complement
to a phase head (v, n, a).

3. Adjunct Wh-Questions

Although Cable discusses the wh-questions of various languages
in great detail, it only deals with wh-questions with argument
wh-words like who and what but not with those with adjunct wh-words
like why. This section investigates adjunct wh-questions, pointing
out that there are differences between argument wh-questions and
adjunct wh-questions. I will show that the differences can be
accommodated under the Q-based analysis if we assume that an adjunct
wh-word and its associated Q-particle are stored as a single unit
in the lexicon. If the analysis to follow is on the right track, it
constitutes further support for the Q-based analysis of
wh-questions.

3.1 Adjunct Wh-Questions in Q-Adjunction Wh-in-situ Languages

As mentioned in section 2.2.1, the Q-based analysis claims that
the Q-particles of Q-adjunction wh-in-situ languages like Japanese
are initially merged at a clause-internal position and subsequently
undergo overt movement to the clause peripheral position.¹ Since
Japanese does not have Q/Wh-Agreement, a wh-word can be dominated
by islands within the sister of Q (see section 2.2.2). Cable (2010:

¹Alternatively, the Q-particle can be initially merged in the clause-peripheral
position. It should be noted that the discussion to follow holds irrespectively
of whichever analysis is adopted.
225) points out that this prediction is borne out by the well-known fact that a wh-word can be buried within an island, presenting the following example where the wh-word dare 'who' is buried within the Complex NP (see also Huang 1982, Nishigauchi 1990, Lasnik and Saito 1992, Watanabe 1992, Ishii 1997):

(12) Kimi-wa [[dare-ga kaita] hon]-o t] yomimasita ka
    you-TOP who-NOM wrote book-ACC read Q

Lit. 'You read [the book that who wrote].'

Under the Q-based analysis, (12) can be derived via movement of the Q-particle ka from the base position outside the Complex NP to the clause-peripheral position. Apart from the Complex NP Constraint, a wh-argument is also immune from the Adjunct Condition, as shown in (13):

(13) John-wa [[nani-o yonde kara] t] dekakemasita ka
    John-TOP what-ACC read after went-out Q

Lit. 'John went out [after he read what].'

Although the lack of the Adjunct Condition effect in Q-adjunction wh-in-situ languages is not discussed in this book, nor is the case where the Q-particle appears outside the adjunct in wh-fronting languages with overt Q-particles like Tlingit, it is reasonable to claim that (13) is derived via movement of the Q-particle ka from outside the adjunct to the clause-peripheral position.

It is not the case, however, that wh-elements in-situ in Q-adjunction wh-in-situ languages never exhibit any island effects. As pointed out by, among others, Huang (1982), Fukui (1988), Lasnik
and Saito (1992), and Ishii (1997), unlike wh-arguments, the wh-adjunct naze 'why' in Japanese is subject to the island constraints:

(14)*John-wa [Bill-ga naze Mary-ni watasita tegami]-o
   John-TOP Bill-NOM why Mary-DAT gave letter-ACC
   sagasiteimasu ka
   looking-for Q
   Lit. 'John is looking for [the letter which Bill gave to Mary why].'

(15)*John-wa [Bill-ga naze totuzen okoridasita kara]
   John-TOP Bill-NOM why suddenly got-angry because
   totemo odoroiteimasu ka
   very be-surprised Q
   Lit. 'John is very surprised [because Bill suddenly got angry why].'

The sensitivity of the wh-adjunct naze 'why' to the island constraints prima facie constitutes evidence against the Q-based analysis, since nothing would prevent the Q-particle ka from originating outside the island and then moving to the clause-peripheral position in (14, 15).

I argue that the wh-adjunct naze 'why' is inherently interrogative in that it is directly combined with a Q-particle, and 'wh-adjunct + Q' is stored as a single unit in the lexicon. This property of the wh-adjunct naze 'why' enables us to accommodate the island effects under the Q-based analysis. Since the Q-particle ka
is required to originate next to the wh-adjunct naze 'why', it undergoes overt Q-movement from within the complex NP or the adjunct to the clause-peripheral position. Hence, (14, 15) violate the island constraints, as schematically represented in (16):

(16) ... [Island ... naze (why) t ... ] ... ka (Q)

There is independent evidence to show that 'wh-adjunct + Q' forms a single unit in the lexicon. It is well-known that Japanese wh-arguments can have a non-interrogative reading as well as an interrogative reading as shown in (17):^2

(17) Japanese
   a. Dare-ka (who-KA) 'someone'
   b. DAre-mo (who-MO) 'everyone'
   c. daRE-MO (who-MO) 'anyone'

Based on this fact, it has been claimed that wh-arguments in Japanese lack their own quantificational force and the particles provide the quantificational force to the wh-arguments. The wh-adjunct naze 'why', on the other hand, can only be used as an interrogative expression. The Japanese wh-adjunct naze 'why' cannot co-occur with the existentially-quantified particle ka (18a), the universally-quantified particle mo (18b), or the negative polarity particle mo (18c) (Ishii 1997: 294-297):

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^2 The universally-quantified particle -mo is isomorphic with the negative polarity particle -mo, though they have different pitch patterns. As extensively discussed by McCawley (1968), Japanese is a pitch-accent language and an accent falls on the last syllable of a stretch of high-pitch tones. High-pitch tones are indicated by the upper case and low-pitch tones, by the lower case here and in relevant examples to follow.
(18) a. * naze-ka (why-KA) 'for some reason'
b. * NAze-mo (why-MO) 'for whatever reason'
c. * naZE-MO (why-MO) 'for any reason'

One might claim that naze-ka 'why-KA' is acceptable as exemplified by (19). As observed by Ishii (1997), however, naze-ka 'why-KA' in (19) cannot be interpreted as an existential quantifier. Rather, it functions as a kind of speaker-oriented adverbial elements, meaning 'I don't know why':

(19) John-ga naze-ka kinoo gakoo-ni kita raii

John-NOM why-KA yesterday school-to come seem

?* 'It seems that John came to school yesterday for some reason.'

'It seems that John came to school yesterday, but I don't know why.'

This view is supported by the fact that naze-ka 'why-KA' cannot appear within a 'true embedded context', as shown by the degraded status of (20) (Ishii 1997: 294):

(20) ?* John-wa [Bill-ga naze-ka Mary-to-no konyaku-o

John-TOP Bill-NOM naze-KA Mary-with-GEN engagement-ACC

kaisyoo sita to] uwasa siteiru

has broken that spread the rumor

'John is spreading the rumor that Bill has broken his engagement with Mary for some reason.'

This is parallel to the fact that speaker-oriented adverbs like frankly cannot appear within 'true embedded contexts':
(21)* John ordered that *frankly* you call him today.

If *naze-ka 'why-KA'* were interpreted as 'for some reason', (20) would be acceptable, since such an existential quantifier may freely appear within a 'true embedded context'.

The discussion above strongly suggests that unlike *wh*-arguments, the *wh*-adjunct *naze 'why'* in Japanese should be inherently interrogative, and '*wh-adjunct + Q'* should be stored as a single unit in the lexicon. This paves a way of accounting for the sensitivity of the *wh*-adjunct *naze why'* to the island constraints under the *Q*-based analysis.

### 3.2 Adjunct *Wh*-Questions in *Q*-Projection *Wh*-in-situ Languages

In Sinhara, a *Q*-projection *wh*-in-situ language, the *wh*-adjunct *moke de 'why Q'* is inseparable as shown in (22) (where the -*a* suffix which is glossed as '-A' represents the neutral ending) (Slade 2011: 123):

(22) a. Ranjit [Chitra *moke de aawe kiyela*] dannǝwa

Ranjit  Chitra  why  Q  came-E  that]  know-A

'Ranjit knows why Chitra came.'

b. *Ranjit [Chitra *moke aawa de kiyela*] dannǝwa.

Ranjit  Chitra  why  came-A  Q  that  know-A

'Ranjit knows why Chitra came.'

This is in contrast with the other '*wh-word + de' constructions, where the *Q*-particle *de* may be separated from its associated *wh-word* as shown in (23b) (Kishimoto 2005: 5-6):
(23) a. Ranjit [kau de aawe kiyəla] dannəwa  
    Ranjit who Q came-E that know-A  
    'Ranjit knows who came.'  

b. Ranjit [kauru aawa de kiyəla] dannəwa  
    Ranjit who came-A Q that know-A  
    'Ranjit knows who came.'  

Given our claim that 'wh-adjunct + Q' forms a single unit in the lexicon, the contrast between (22b) and (23b) can be accommodated under the Q-based analysis.

3.3 Adjunct Wh-Questions in Wh-Fronting Languages without Q/Wh-Agreement

Let us finally consider adjunct wh-questions in wh-fronting languages without Q/Wh-Agreement like Tlingit and Basque. As pointed out by Ortiz de Urbina (1986), although Basque is an overt clausal pied-piping language, the wh-adjunct zergatik 'why' cannot pied-pipe the clause containing it as shown in (24):

(24)*[[zergatik egin-da-ko] Q] lana gustantzen zaizu  
    why do-Adv-of work like AUX  
    Lit. '[The work done why] do you like?'  
    (Ortiz de Urbina 1986: 315)

This is in contrast with the other wh-words as shown in (25):

(25) [[Nor joango dela] Q] esan du Jonek  
    who go AUX said AUX John  
    'Who did you John say will go?' (Cable 2010: 154)

As mentioned in section 2.2.2, the Q-particle is base-generated as
the sister of the fronted constituent in the pied-piping structures like (24, 25). The contrast between (24) and (25) straightforwardly follows from the Q-based analysis if we assume that 'wh-adjunct + Q' forms a single unit in the lexicon.

References:
Slade, B. M. (2011) Formal and Philological Inquiries into the Nature
of Interrogatives, Indefinites, Disjunction, and Focus in Sinhara and Other Languages. Doctoral dissertation, University of Illinois at Urbana-Champaign.