

# QUANTIFICATION: A CROSS-LINGUISTIC PERSPECTIVE

4

## Q-PARTICLES AND THE NATURE OF WH-FRONTING<sup>1</sup>

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EDITOR

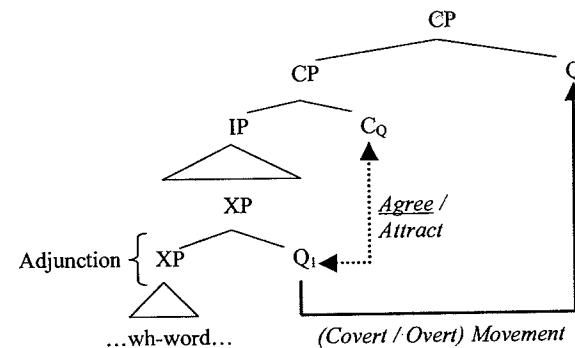
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### 1 INTRODUCTION

An operation of 'Q-movement' has been argued to be central to the formation of wh-questions in several wh-*in-situ* languages (Hagstrom 1998; Kishimoto 2005). Under this analysis, the formation of wh-questions in these languages proceeds as indicated in (1).

#### (1) Q-Movement in Wh-In-Situ Languages



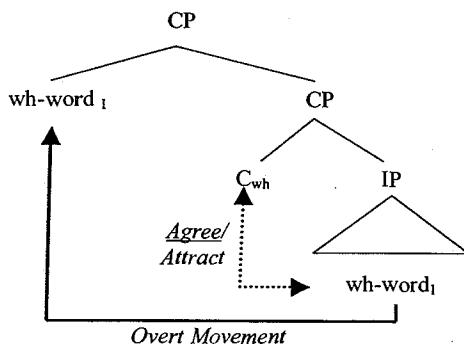
The structure in (1) represents the following claims. A wh-word is obligatorily c-commanded by a Q(uestion)-particle, which adjoins to some phrase containing the wh-word. Under this

<sup>1</sup> Please see Footnote 75 for a full list of acknowledgments.

analysis, it is the Q-particle, *and not the wh-word itself*, which is probed by and Agrees with the interrogative C head of the wh-question. More concretely, the interrogative C head bears an uninterpretable instance of the interpretable Q-feature born by the Q-particle. The interrogative C must therefore probe for an interpretable instance of the Q-feature. Upon reaching the adjoined Q-particle, the interrogative C Agrees with the particle, eliminating its own uninterpretable instance of Q. This Agreement then triggers movement of the Goal, the Q-particle, into the projection of C. In some languages (Sinhala), this movement is usually covert; in others (Japanese), this movement is always overt.<sup>2</sup>

The analysis in (1) would seem to entail that wh-questions in these *wh-in-situ* languages are syntactically quite different from wh-questions in wh-fronting languages like English. After all, it is commonly assumed that the left-peripheral position of wh-words in wh-fronting languages reflects some syntactic relationship between the interrogative C and the wh-word itself. That is, under the most common assumptions, the derivation of wh-questions in wh-fronting language proceeds roughly as follows.

## (2) Wh-Movement in Wh-Fronting Languages



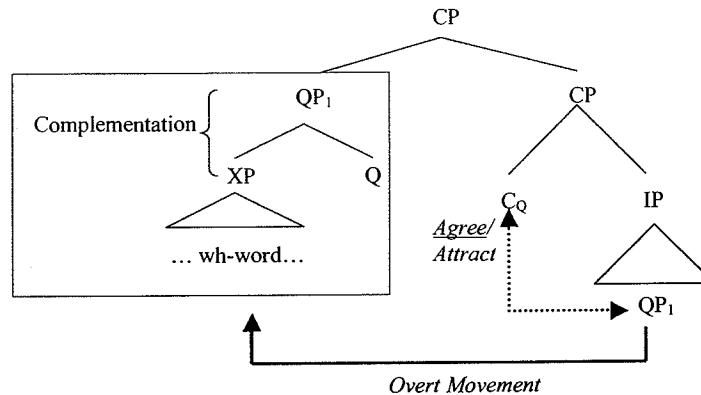
Thus, under one particular view, the interrogative C head probes and Agrees with a wh-feature of the wh-word itself. Since the wh-word is the Goal, the wh-word is then subsequently moved into the projection of the interrogative C.

The primary claim of this paper is that the analysis of wh-fronting in (2) is incorrect. Rather, wh-questions in wh-fronting languages are formed in a manner nearly identical to that represented in (1); their only difference from wh-questions in *wh-in-situ* languages is in the relationship between the Q-particle and its sister. Specifically, I will argue that, in all wh-

<sup>2</sup> It should be noted that the Q-particle in (1) is not part of the functional projection of the wh-word itself. As we will see, the sister of Q may contain lexical heads selecting for the wh-head. Thus, the analysis in (1) must be distinguished from the competing claim that *wh-in-situ* involves pure 'feature-movement' of [+wh] up to the projection of C.

fronting languages, the fronting of wh-words in wh-questions has the structural character represented below under (3).

## (3) Wh-Fronting as a Secondary Effect of Q-Movement



The structure in (3) represents the following claims. As with *wh-in-situ* languages, a wh-word in a wh-fronting language is associated with an obligatory Q-particle, which c-commands the wh-word. In a wh-fronting language, however, this Q-particle takes *as complement* a phrase containing the wh-word, and thus projects the category of the phrase minimally dominating Q and Q's sister. As with *wh-in-situ* languages, the interrogative C head probes for an interpretable instance of the Q-feature born by the Q-particle, *and not any feature of the wh-word itself*. In a wh-fronting language, however, the first node which the C encounters bearing this feature is the QP projected by the Q-particle, and so the C head must Agree with this QP. As with *wh-in-situ* languages, this Agreement then triggers movement of the Goal into the projection of C. In a wh-fronting language, however, since the Goal is QP, the entire QP is moved into the periphery of the clause. Because the wh-word is necessarily contained within the QP, the wh-word is fronted into the periphery along with everything else inside the QP.<sup>3</sup>

We find, then, that even in wh-fronting languages there is no direct syntactic relationship between the interrogative C and the wh-word itself. The obligatory left-peripheral position of the wh-word is a mere epiphenomenon, a by-product of the real syntactic relationship between the interrogative C and the c-commanding Q-particle.

<sup>3</sup> Again, it should be noted that, just as in (1), the Q-particle in (3) is not part of the functional projection of the wh-word, as its sister could contain lexical heads selecting for the wh-head. Thus, the proposal in (3) must be distinguished from the less interesting claim that the wh-feature of a wh-word heads its own projection within the functional projection of the wh-word. Similarly, the proposal in (3) must be distinguished from the competing proposals in Watanabe (1992), which though similar in outline, differ substantially from the account offered here in their treatment of wh-fronting languages.

The principal evidence for the analysis in (3) is taken from Tlingit, a Na-Dene language of Southeast Alaska and Northwest British Columbia. Given its special morpho-syntactic properties, the analysis in (3) is highly motivated for wh-fronting in Tlingit. Given the strong similarity of wh-fronting in Tlingit to wh-fronting in more familiar languages, the extension of the analysis in (3) to all wh-fronting languages is thereby motivated. This analysis of wh-fronting suggests a novel typological theory of wh-questions, under which wh-*in-situ* may have two quite different structural natures.

It will be shown that the analysis in (3) has important consequences for the theory of pied piping. In brief, all apparent instances of ‘pied piping’ may be analyzed as cases in which the complement of Q properly contains the wh-word. Pied-piping structures may thus be straightforwardly derived from general principles of phrasal movement, and one need not appeal to special mechanisms of feature-percolation.

We will see that the analysis in (3) entails a particular view regarding the quantificational structure of wh-questions in wh-fronting languages, one in which *no* wh-words are scope-bearing logical operators, a view common in the literature on wh-questions in wh-*in-situ* languages (Cheng 1991, Hagstrom 1998, Shimoyama 2001). This view has the interesting consequence that reconstruction is not necessary for the proper interpretation of wh-questions containing pied piping.

Finally, there exists in Tlingit an independently visible condition preventing the phrasal projection of the Q-particle from intervening between functional heads and phrases selected by those functional heads. It will be shown that this limit on the placement of Q-particles is sufficient to derive both (i) the apparent island-hood of certain positions (e.g. complement of P, specifier of D), and (ii) the inability for certain phrasal projections to be pied-piped (e.g., VP and any other projection along the ‘functional spine’ of the clause). Moreover, it is shown that the proposed theory of wh-*in-situ* correctly predicts that certain wh-*in-situ* languages allow Q-particles in environments not tolerated by wh-fronting languages.

## 2 THE NATURE OF WH-FRONTING IN TLINGIT

In this section, I argue that the structure in (3) provides the best analysis of several features of wh-fronting in Tlingit. I begin by providing the reader with relevant background information regarding the Tlingit language. I then demonstrate that the wh-words in Tlingit wh-questions are obligatorily fronted into the left-periphery of the clause. Given the paucity of descriptive work on Tlingit syntax, this is an original claim regarding the structure of the language’s wh-questions. I therefore take care to defend this claim at length, as it is so central to the primary theoretical claims that follow.

Next, I argue that the Tlingit particle *sá* – which obligatorily co-occurs with the language’s wh-words – is most plausibly categorized as a Q-particle. This categorization is

based upon strong formal parallels between *sá*, the Japanese Q-particle *ka* and the Sinhala Q-particle *da*.<sup>4</sup> One such parallel is the requirement that a wh-word of Tlingit always be c-commanded by the particle *sá*. This relationship is shown to follow from a particular semantic analysis of Q-particles and wh-words, one which views Q-particles as operators ‘closing off’ focus alternatives introduced by the wh-words (c.f., Hagstrom (1998), Shimoyama (2001)).

Finally, I argue that the interrogative C head of a Tlingit wh-question probes and Agrees with only the Q-particle *sá*, there being no special syntactic relationship between the interrogative C and the wh-word itself. That the wh-word is nonetheless fronted with the Q-particle in a Tlingit wh-question motivates the notion that the Q-particle *sá* takes its sister as complement and projects the category of the resulting phrase. Further evidence that the Tlingit Q-particle *sá* takes its sister as complement will be provided in Section 4.

### 2.1 Relevant Background Concerning the Tlingit Language

The Tlingit language is spoken in the Southeast panhandle of Alaska and Northwest British Columbia by at most 845 individuals out of an ethnic Tlingit population of approximately 10,000. The youngest native speakers of the language are typically in their early fifties, and there is no known native speaker of the language below the age of 40 (Dauenhauer & Dauenhauer 1987)<sup>5</sup>. Tlingit is the sole member of the ‘Tlingit’ language family, a branch of the Na-Dene language phylum, and thus is related to the more widely studied Athabaskan languages.<sup>6</sup> Pioneering grammatical studies of Tlingit can be found in Boas (1917), Naish (1966), Story (1966), Story & Naish (1973), Leer (1991), D&D (2000), *inter alia*.

Tlingit is a head-marking language with extensive pro-drop. The complex verbal morphology of Tlingit is remarkably similar to that of its Athabaskan relatives, and many cognate morphemes are visible. Given this morphological system, a particular surface verbal form of Tlingit may underlyingly contain a sizeable number of prefixes. For this reason, and because this chapter principally concerns Tlingit syntax, I will only provide the roughest of glosses for the Tlingit verbs exemplified throughout. I will not provide a full morphological break-down of every verbal form, but will rather gloss only the ‘propositional content’ of a given verb, as illustrated below under (4). Note that these ‘propositional glosses’ are merely a notational convenience, and do not represent any serious proposals regarding the morpho-syntax of Tlingit. Thus, although these glosses contain English pronouns, I do not seriously

<sup>4</sup> Since the transliteration conventions for Sinhala tend to vary between authors, let me briefly explain the conventions I follow here. Certain authors variably transliterate the Sinhala character representing the vowel /a/, transliterating it as “*a*” in contexts where the vowel is reduced, and as “*a*” in all other contexts. Thus, certain authors transliterate the Sinhala Q-particle as “*da*”. Throughout this paper, I follow the simpler convention of uniformly transliterating this character as “*a*”; thus, I transliterate the Sinhala Q-particle as “*da*”. Aside from this, I make no changes in the transliterations of the authors whose data I cite.

<sup>5</sup> To save space, I will henceforth abbreviate the names ‘Dauenhauer & Dauenhauer’ to ‘D&D’.

<sup>6</sup> This language phylum is also often referred to as ‘Athabaskan-Eyak-Tlingit’, since the term ‘Na-Dene’ originally denoted a (likely erroneous) grouping that includes the neighboring language Haida.

adopt the ‘Pronominal Argument Hypothesis’ (Jelinek 1984) for Tlingit. Rather, I hold the view that full DPs in Tlingit can function as verbal arguments, and are not necessarily mere clausal adjuncts.

Like its Athabaskan relatives, Tlingit largely displays a head-final alignment: the language employs post-positions, and no prepositions; possessors and other nominal complements precede the head noun; auxiliaries follow main verbs. In addition to this, the most frequent word order in Tlingit texts is typically SOV (Dryer 1985). Unlike its Athabaskan relatives, however, Tlingit has rather free word order, and freely permits the positioning of major constituents after the verb.<sup>7</sup> Generally speaking, any permutation of S, V, O is an allowable sentence of Tlingit, though there are of course discourse-structural effects associated with particular orders (see Leer 1991; Chapter 2).

#### (4) Word Order Freedom in Tlingit<sup>8</sup>

- |    |            |  |
|----|------------|--|
| a. | <u>SOV</u> | Wé shaawáatch xóots awsíteen.<br>that woman.erg bear she.saw.it<br><i>The woman saw the bear.</i>              |
| b. | <u>SVO</u> | Wé shaawáatch wusíteen xóots. <sup>9</sup><br>that woman.erg she.saw.it bear<br><i>The woman saw the bear.</i> |
| c. | <u>VSO</u> | Awsíteen wé shaawáatch xóots.<br>she.saw.it that woman.erg bear<br><i>The woman saw the bear</i>               |
| d. | <u>VOS</u> | Awsíteen xóots wé shaawáatch.<br>she.saw.it bear that woman.erg<br><i>The woman saw the bear</i>               |
| e. | <u>OVS</u> | Xóots awsíteen wé shaawáatch.<br>bear she.saw.it that woman.erg<br><i>The woman saw the bear</i>               |

<sup>7</sup> Indeed, in some texts, (S)VO order slightly outnumbers (S)OV order. This is reported in Dryer (1985) and also conforms to my own experience.

<sup>8</sup> Keri Edwards (p.c.) reports that some speakers find the SVO and VSO orders in (4b,e) to be awkward, characterizing them as 'backwards' and only said in moments of great excitement.

<sup>9</sup> The reader may note that the verbal form in (4b) differs from that in (4a). This is due to a morpho-phonological rule that deletes 3<sup>rd</sup> obviative object agreement when the verb is directly preceded by an NP marked by the optional ergative post-position. The effect of this rule can be seen in many of the examples throughout this paper.

- f. OSV Xóots wé shaawatch wusiteen.  
bear that woman.erg she.saw.it  
*The woman saw the bear.*

## 2.2 Fronting of Wh-Words in Tlingit Wh-Questions

The general form of wh-questions in Tlingit is illustrated below.

## (5) Illustrative Examples of Wh-Questions in Tlingit

- a. Waa sá sh tudinookw i éesh?  
     how Q   he.feels     your father  
*How is your father feeling?* (D&D 2000; p. 138)

b. Daa sáwé i éesh al'ón?  
     what Q.foc-part your father he.hunts.it  
*What is your father hunting?* (D&D 2000; p. 186)

As I will show, in a Tlingit wh-question, the wh-word must precede the main predicate of the clause, and is typically initial in the clause. The wh-word must also be followed by the Q-particle *sá*, which either directly follows the wh-word or a phrase containing the wh-word. As shown in (5b), this Q-particle can form a portmanteau with the ‘focus particles’ *áwé*, *áyá*, *áyú*, *áhé*, the two surfacing together as *sáwé*, *sáyá*, *sáyú*, *sáhé*.<sup>11</sup> The remaining material in the sentence typically follows the wh-word, with a strong tendency to follow the verb.

Because of the freedom of word order in Tlingit, it isn't obvious upon casual examination whether the language requires wh-words to occupy a left-peripheral position in wh-questions. Indeed, this issue has not yet been addressed in the published grammatical descriptions of Tlingit. Nevertheless, certain facts indicate that such wh-words are left-

<sup>10</sup> Outside of wh-questions, OSV word order seems especially rare in texts. Dryer (1985), for example, reports not a single instance of the order in his textual counts. In my own experience, the order is attested, though vanishingly rare in non-interrogative clauses. Speakers do, however, readily accept constructed OSV sentences, especially when the optional 'ergative' subject marker is used, as in (4d). In general, though, the 'post-verbal field' is where the 'action' lies with respect to word-order flexibility in Tlingit.

<sup>11</sup> I borrow the label ‘focus particle’ from Leer (1991). It isn’t clear to me, however, whether ‘focus particle’ is the best label for these particles. Story (1995) notes that the particles can serve equally well to either ‘background’ or to ‘foreground’ material. My own suspicion is that these particles can simply follow any element in any left peripheral position, whether Topic or Focus. Such a particle has been independently reported for the neighboring language Haida (Enrico 2003), where it actually seems cognate with the Tlingit particle. I should note that such an account of these particles is essentially that proposed in Leer (1991), though it seems out of sorts with the label ‘focus particle’. Finally, D&D (1990) take the view that these particles are semantically empty, and can simply be optionally added to any prosodic phrase in the sentence.

peripheral in Tlingit wh-questions.<sup>12</sup>

**2.2.1 Obligatory Pre-Predicate Position of Wh-Operators in Wh-Questions.** As was shown in Section 2.1, word order in Tlingit is generally free, and any permutation of S, V and O is a well-formed sentence. In a Tlingit wh-question, however, the phrase understood to be the wh-operator *must* appear left of the main predicate of the clause.<sup>13</sup> By the term “predicate” here, I mean either the verb of the clause (if one is present) or the so-called ‘focus particles’ áwé, áyá, áyú, áhé in their ‘copular use’. Examples of copular use of a focus particle are given in sentences (6 a, b) below.

#### (6) Copular Use of So-Called ‘Focus Particles’

- a. Tás áyá.  
thread foc-part  
*This is thread.* (D&D 2000; p. 77)
- b. Daa sáwé?  
what Q.foc-part  
*What is that?* (D&D 2000; p. 77)

The requirement that a Tlingit wh-operator precede the predicate is apparent both from patterns within published texts and from the well-formedness judgments of native speakers. The following chart demonstrates how this pattern emerges across a range of published texts.

#### (7) The Pre-Predicate Position of Wh-Operators in Wh-Questions

Text	Wh-Questions Containing an Overt Predicate (Either Verb or Focus Particle)	Of Those in First Column, Number in Which the Wh-Operator Precedes the Predicate
D&D 1987	117	117
D&D 1990	31	31
D&D 2000	170	170
D&D 2002	84	84
Nyman & Leer 1993	114	114
<b>TOTAL</b>	<b>516</b>	<b>516</b>

In this chart, the middle column lists the number of wh-questions in the text that contain an overt predicate. The last column lists the number of those questions counted in the middle column in which the wh-operator of the question precedes the main predicate of the clause. As the chart indicates, all the wh-questions in the selected corpus containing an overt predicate place the wh-operator *before* the predicate.

This pattern is also confirmed by the grammaticality judgments offered by native speakers. As the following data show, speakers reject as ill-formed any wh-question where the wh-operator follows the main predicate.<sup>14</sup> Such sentences are consistently corrected by speakers to ones in which the wh-operator *precedes* the predicate.

#### (8) Wh-Operators in Tlingit Must Precede the Main Predicate

- a. Aadóoch sá kgwatóow yá x'úx'?  
who.erg Q he.will.read.it this book  
*Who will read this book?*
- b. Aadóoch sá yá x'úx' akwgwatóow?  
who.erg Q this book he.will.read.it
- c. Yá x'úx' Aadóoch sá kgwatóow?  
this book who.erg Q he.will.read.it
- d. \* Yá x'úx' akwgwatóow Aadóoch sá?  
this book he.will.read.it who.erg Q

<sup>12</sup> Much of the evidence that follows is consistent with an analysis where wh-words in Tlingit wh-questions must be fronted to an immediately pre-verbal focus position, akin to wh-questions in other so-called ‘discourse configurational languages’ (Kiss 1995). It has been argued by some authors that such immediately preverbal focus positions are not left-peripheral positions (Arregi 2003). Note, however, that sentences such as (5b) indicate that Tlingit does not require wh-words in wh-questions to occupy an *immediately* preverbal position, which entails that wh-fronting in Tlingit is to a left-peripheral CP position.

<sup>13</sup> Throughout this paper, I use the term ‘wh-operator’ in a purely informal, descriptive sense, as (roughly) ‘the wh-word representing the information being sought by the speaker’. As will be clear from the semantics proposed in Section 2.3.5, I do not believe that such wh-words are operators in any real semantic sense. Rather, they are argued to be elements that obligatorily introduce ‘focus alternatives’ into the meaning of the sentence.

<sup>14</sup> Interestingly, one speaker commented that such sentences sound like ‘baby Tlingit’.

## (9) Wh-Operators in Tlingit Must Precede the Main Predicate

- a. Aadóoch sá kawshixít yá x'úx'?
- who.erg Q he.wrote.it this book
- Who wrote this book?*
- b. Yá x'úx' **aadóoch** sá kawshixít?
- this book who.erg Q he.wrote.it
- c. \* Yá x'úx' **akawshixít** **aadóoch** sá?
- this book he.wrote.it who.erg Q

## (10) Wh-Operators in Tlingit Must Precede the Main Predicate

- a. Aadóoch sá ax sakwnéini aawaxáa?
- who.erg Q my bread he.ate.it
- Who ate my bread?*
- b. Ax sakwnéini **aadóoch** sá uwaxáa?
- my bread who.erg Q he.ate.it
- c. \* Ax sakwnéini aawaxáa **aadóoch** sá?
- my bread he.ate.it who.erg Q

## (11) Wh-Operators in Tlingit Must Precede the Main Predicate

- a. Daa sá kéet axá?
- what Q killerwhale he.eats.it
- What do killerwhales eat?*
- b. Kéet daa sá axá?
- killerwhale what Q he.eats.it
- c. \* Kéet axá daa sá?
- killerwhale he.eats.it what Q

## (12) Wh-Operators in Tlingit Must Precede the Main Predicate

- a. Waa sáyá at kuwanóok?
- how Q.foc-part they.do.it
- What are those people doing?*
- b. \* At kuwanóok waa sáyá?
- they.do.it how Q.foc-part

Of course, one might justifiably wonder whether the ill-formedness of the starred sentences above is due, not to a rule of obligatory wh-fronting, but to independent semantic conditions on post-predicate NPs. Perhaps post-predicate NPs must possess qualities that wh-words inherently lack, such as definiteness? Note, however, that wh-words in Tlingit can function as indefinites in declarative clauses.<sup>15</sup> When a wh-word is used as an indefinite, there is no condition that it appear before the predicate of the clause. This fact is clearly indicated both by textual examination and by the well-formedness judgments of native speakers. The following chart demonstrates that the corpus of texts supports this grammatical generalization.

## (13) Wh-Indefinites May Freely Follow the Main Predicate of the Clause

Text	Sentences Containing Wh-Indefinite and Overt Predicate (Either Verb or Focus Particle)	Of Those in First Column, Number in Which the Wh-Indefinite Precedes the Predicate
D&D 1987	74	63
D&D 1990	26	24
D&D 2000	0	0
D&D 2002	6	6
Nyman & Leer 1993	205	187
<b>TOTAL</b>	<b>311</b>	<b>280</b>

<sup>15</sup> In most of the examples of Tlingit wh-indefinites that we will see in this paper, the wh-indefinite is apparently interpreted as an NPI or a free-choice item. Nevertheless, sentences like the following show that it is possible for wh-indefinites to appear on their own, interpreted as plain existentials outside the scope of any other logical operators.

(i) ...áwé daa sáwé xwasiteen.  
foc-part what Q.foc-part I.saw.it  
...and I saw something. (Nyman & Leer 1993; p. 66; line 497)

Cable (2007) collects a variety of further, textual data demonstrating that Tlingit wh-indefinites also admit of these plain (and sometimes 'specific') indefinite readings.

Nevertheless, I do believe that some speakers tend to greatly prefer the NPI reading of the wh-indefinite, to the point that the NPI reading is essentially obligatory in the environments that license it.

In this chart, the middle column lists the number of sentences in the text that contain a wh-indefinite and an overt predicate. The last column lists the number of those sentences counted in the middle column in which the wh-indefinite precedes the main predicate of the clause. As the chart indicates, not all wh-indefinites in the selected corpus precede the main predicate of their clause.

This pattern is also confirmed by comments offered by native speakers. Although sentences such as (8d) and (11c) are not acceptable as wh-questions, speakers note that they can function as declarative sentences containing wh-indefinites.

(14) Post-Predicative Wh-Indefinites<sup>16</sup>

- a. Yá x'úx' akw̤g̤w̤atóow aadóoch sá.  
this book he.will.read.it who.erg Q  
*People will read this book.*
- b. Kéet axá daa sá.  
killer.whale he.eats.it what Q  
*A killerwhale will eat anything.*
- c. Yéi uwatee x'oon ták̤w sá.  
he.lived.there how.many winters Q  
*He lived there for a number of years (= many years).*

We see, then, that there is no condition requiring wh-indefinites in Tlingit to appear before the main predicate of the clause; such wh-words may freely appear in the post-verbal field. I conclude that the inability for wh-operators in wh-questions to appear following the predicate is not due to their lacking some inherent semantic property that post-predicate NPs are required to have. Indeed, the only relevant difference between the wh-words in (14) and those in (8) – (12) is that the latter function as wh-operators while the former do not. I conclude that the best explanation for the requirement that wh-operators appear before the predicate of the clause is that such wh-words are fronted into the left periphery. Further evidence for such an obligatory rule of wh-fronting will be provided in the next few sections.

*2.2.2 Topic Status of Material Preceding Wh-Operators in Wh-Questions.* Additional evidence that wh-operators are left-peripheral in Tlingit wh-questions may be found in the

<sup>16</sup> Keri Edwards (p.c.) reports that some speakers find these sentences to be unacceptable, and require the wh-indefinites to appear before the main predicate. I would hypothesize that for such speakers, there are additional conditions on post-predicate placement that independently rule out the appearance of post-predictive wh-indefinites. It is worth noting that these speakers do seem to exhibit a more restricted post-verbal field (see Footnote 8).

discourse-structural properties of material preceding such wh-words. As shown by sentences like (8c), it is possible for other XPs to precede the wh-word in a Tlingit wh-question. Placement of an XP before the wh-word, however, creates a structure with special discourse properties: the fronted XP must be construed as a discourse topic. This is suggested both by textual examination and by speaker judgments.

Although often accepted by speakers, sentences such as (8c) are remarkably rare in texts. Indeed, the overwhelmingly predominant pattern is for wh-words in wh-questions to precede all other major constituents in the sentence. The following chart illustrates.

(15) The Initial Position of Wh-Words in Tlingit Wh-Questions

Text	Wh-Questions Containing Wh-Word and a Second Major, Non-Predicate Constituent	Of Those in First Column, Those in Which Wh-Word is Initial in the Clause	Of Those in Second Column, Those in Which the Initial Position of the Wh-Word Does not Follow From Typical Word Order
D&D 1987	43	43	32
D&D 1990	21	20	11
D&D 2000	27	27	19
D&D 2002	18	18	8
Nyman & Leer 1993	58	58	44
<b>TOTAL</b>	<b>167</b>	<b>166</b>	<b>114</b>

In this chart, the left-hand column indicates the number of wh-questions in the corpus containing some major constituent besides the wh-word and the predicate. The middle column reports how many, from the questions represented in the left column, place the wh-word initially in the clause. Finally, the right column indicates the number of questions in the middle column in which the initial position of the wh-word does *not* follow from more general word-order frequencies in Tlingit, such as the fact that subjects tend to precede objects in the language (Dryer 1985). The totals at the bottom of the chart indicate an overwhelming preference for wh-questions to begin with wh-words.

Consonant with their textual rarity, sentences like (8c) are occasionally judged by speakers to be marginal or ill-formed, a classification that is sometimes revised upon further reflection. The textual rarity of sentences like (8c) would, of course, follow from their possessing special discourse properties, ones that place strong limits on the kind of context in which such structures might be embedded. Such special discourse properties would also account for their occasional rejection by speakers, rejection occurring when the licensing context is difficult for the speaker to imagine or strikes them as far-fetched.

It seems likely, then, that sentences like (8c) possess some special discourse-structural property. That this property is the ‘topichood’ of the material preceding the wh-word comports

well with a number of other facts. First, in all the naturally occurring instances of non-initial wh-operators I have encountered, the material preceding the wh-operator is a referential expression. The following two examples illustrate the general pattern.

(16) Textually Attested Examples of the Order [ XP ... Wh-Operator ... V ]

- a. I kutaaní wáa sá wootee?  
your summer how Q it.was  
*How was your summer?*  
(SHI; Tlingit Phrase of the Week; September 6, 2005)<sup>17</sup>
- b. Wé i séé daakw aa sáwé?  
that your daughter which of.them Q.foc-part  
*Which one is your daughter?* (D&D 1990; p. 298; line 10)

Note that this pattern is also evident in sentences (8c), (9b), (10b) and (11b).<sup>18</sup> Indeed, speakers do not allow fully *non-referential* material to precede the wh-operator of a wh-question.

(17) Non-Referential DPs Cannot Precede Wh-Operators

- a. Aa sáyá l daa sá uxá?  
who Q.foc-part nothing he.eats.it  
*Who ate nothing?*
- b. \* L daa sá aa sáyá uxá?  
nothing who Q.foc-part he.eats.it

These data strongly indicate that only *referential* XPs may precede the wh-operator of a wh-question. Of course, one of the core properties of ‘topics’ is that they can only be denoted by referential expressions (Li 1976), and so these data nicely argue that any material preceding the wh-operator of a Tlingit wh-question must be construed as a discourse topic.

A final suggestive piece of evidence is the translations offered by speakers for sentences like (8c). When these sentences are accepted by native speakers, they are regularly translated into English using hanging topic left dislocation structures, such as the following.

<sup>17</sup> The Sealaska Heritage Institute regularly posts a ‘Tlingit Phrase of the Week’. This and others may be found at [www.sealaskaheritage.org/programs/tlingit\\_phrase\\_of\\_week.htm](http://www.sealaskaheritage.org/programs/tlingit_phrase_of_week.htm).

<sup>18</sup> The appearance of the generic NP *kéet* in sentence (11b) does not necessarily upset the generalization, given that generic NPs are classified by many semanticists as referential terms, denoting kinds (Carlson & Pelletier 1995).

(18) The Order [ XP ... Wh-Operator ... V ] Translated as Left Dislocation

- a. Ax éesh daa sá aawaxáa?  
my father what Q he.ate.it  
*Translated as ‘My father, though, what did he eat?’*
- b. Yá xáat aadóoch sá uwaxáa?  
this fish who.erg Q he.ate.it  
*Translated as ‘That fish – who ate it?’*
- c. Yá x'úx' aadóoch sá kgwatóow?  
this book who.erg Q he.will.read.it  
*Translated as ‘This book – who will read it?’*

That speakers use English left dislocation to translate these sentences supports their having a special discourse structure that is not possessed by a simple wh-question and that only left dislocation in English is able to simulate.<sup>19</sup>

There is, then, good reason to conclude that any material preceding the wh-operator of a Tlingit wh-question must be interpreted as a discourse topic. This fact itself would most naturally follow from a syntax in which wh-operators are fronted into the left periphery of Tlingit wh-questions. Under such a syntax, any material occurring to the left of a Tlingit wh-operator would either have to occupy a left-peripheral Topic position (Rizzi 1997), or else would have to simply be a dislocated, hanging topic. Thus, the special discourse-structural properties of sentences with non-initial wh-operators in Tlingit provides further evidence that wh-operators must front in Tlingit wh-questions.

**2.2.3 Long Distance Questions in Tlingit Require Long-Distance Movement.** Another striking argument that wh-operators in Tlingit undergo obligatory fronting may be found in the language’s long-distance questions. In Tlingit long-distance questions, the subordinate clause preferably follows the verb it is complement to (19a), though a pre-verbal order is also possible (19b).<sup>20</sup>

<sup>19</sup> Of course, the possibility exists that these speakers were simply trying to mirror the syntax of the original Tlingit in their English translations. I find this explanation doubtful, however. One speaker who was quite consistent in using left-dislocation in his translations of these sentences would nevertheless translate other non-English word-orders as standard SVO English sentences.

<sup>20</sup> By saying that the post-verbal order is ‘preferable’, I mean that it is the one most often encountered in texts, and the one most often provided by speakers when asked for translations of English long-distance questions.

## (19) Long-Distance Wh-Questions in Tlingit

- a. Daa sá uwajéé wutooo.oowú?  
what Q they.think we.bought.it  
*What did they think we bought?*
- b. Daa sá wutooo.oowú uwajée?  
what Q we.bought.it they.think

For obvious reasons, the activity of an obligatory wh-fronting rule in Tlingit long-distance questions is easiest to detect when the subordinate clause follows the main verb. In such sentences, the interrogative word *must* appear to the left of the main verb, and cannot appear downstairs in its base position. The following sentences illustrate.

## (20) Long-Distance Movement in Tlingit Long-Distance Questions

- a. [ Daa sá ]<sub>i</sub> i tuwáa sigóo [ t<sub>1</sub> yéi isaneiyí ] ?<sup>21</sup>  
what Q your spirit it.is.glad you.do.it  
*What do you want to do?*
- b. \* I tuwáa sigóo [ daa sá yéi isaneiyí ] ?  
your spirit it.is.glad what Q you.do.it

## (21) Long-Distance Movement in Tlingit Long-Distance Questions

- a. [ Daa sá ]<sub>i</sub> haa koo at latóowu yawsikaa [ t<sub>1</sub> wutootoowú ] ?  
what Q our teacher he.said we.read.it  
*What did our teacher tell us to read?*
- b. \* Haa koo at latóowu yawsikaa [ daa sá wutootoowú ] ?  
our teacher he.said.it what Q we.read.it

<sup>21</sup> Sentence (20a) illustrates the Tlingit idiom for ‘to want’. Since we will encounter this expression many times throughout this thesis, a few words should be said about it here. In Tlingit, one expresses the proposition “X wants Y” – where Y can be a CP or a DP – with an idiom literally meaning “Y is glad in X’s mind-face (spirit)” (Leer 1991). This idiom can also be interpreted as “X likes Y”, which may in fact be the original meaning. This idiom has undergone a certain amount of grammaticalization and phonetic reduction, but its original structure can be seen in sentences like the following.

(i) Has du tuwáx’ gu.áwe gé xat sigóo gé.  
their spirit.at perhaps.foc-part Q I.am.glad Q

*I wonder if they like me.* (Naish 1966; p. 63)

## (22) Long-Distance Movement in Tlingit Long-Distance Questions

- a. [ Goodéi sá ]<sub>i</sub> i shagónich has uwajée [ t<sub>1</sub> wutooo.aadí ] ?  
where.to Q your parents.erg they.think we.went  
*Where do your parents think that we went?*
- b. \* I shagónich has uwajée [ goodéi sá wutooo.aadi ] ?<sup>22</sup>  
your parents.erg they.think where.to Q we.went

The impossibility of the (b)-sentences above strongly indicates that wh-operators in Tlingit must be fronted into the left-periphery of the wh-question.

**2.2.4 Superiority Effects in Multiple-Wh Questions.** A final piece of evidence for wh-fronting in Tlingit wh-questions comes from the language’s multiple wh-questions. As shown in Section 2.1, word order in Tlingit is rather free. For example, both objects and adverbial phrases are generally permitted to precede subjects in a Tlingit declarative clause; see the examples in (4) and (23) below.

## (23) Word Order Freedom in Tlingit

- a. Ax éesh hoon daakahídidié yaa nagút.  
my father store.to he.goes  
*My father is going to the store.*
- b. Hoon daakahídidié ax éesh yaa nagút.<sup>23</sup>  
store.to my father he.goes  
*My father is going to the store.*

In multiple wh-questions, however, such relative freedom of order is not available. Interrogative subjects must obligatorily precede interrogative objects and adverbial phrases.

<sup>22</sup> Sentence (22b) can reportedly be interpreted to mean “Your parents wondered where we went.” Thus, the asterisk here is intended only to represent that the sentence cannot be interpreted as a matrix wh-question meaning “Where do you parents think we went?”

<sup>23</sup> Keri Edwards (p.c.) reports that some speakers find (23b) to be unacceptable, and prefer the order ADV,V,S to the order ADV,S,V. This is in line with the tendency, noted under Footnote 10, for the post-verbal field to be the locus of word-order freedom.

## (24) Superiority Effects in Tlingit Multiple Wh-Questions

- a. Aa sá daa sá aawaxáa?  
who Q what Q they.ate.it  
*Who ate what?*
- b. \* Daa sá aa sá aawaxáa?  
what Q who Q they.ate.it

## (25) Superiority Effects in Tlingit Multiple Wh-Questions

- a. Aa sá goodéi sá woogoot?  
who Q where.to Q they.went  
*Who went where?*
- b. \* Goodéi sá aa sá woogoot?  
where.to Q who Q they.went

## (26) Superiority Effects in Tlingit Multiple Wh-Questions

- a. Aa sá waa sá kuyawsikaa?  
who Q how Q they.said.to.someone  
*Who said what?*
- b. \* Waa sá aa sá kuyawsikaa?  
how Q who Q they.said.to.someone

The speaker judgments indicated above are consistent with the available textual data. Although I have encountered only one clear example of a multiple wh-question in my collected corpus, its word order conforms to the pattern illustrated above: the subject wh-word precedes the adverbial wh-word.

## (27) Textually Attested Example of Tlingit Multiple Wh-Question

X'oon	waa	sákwshei	aax	aawa.aat.
how.many	how	Q.dubit.	there.from	they.went
<i>How many left in what way, I wonder?</i>				
(D&D 1987; p. 196; line 60) <sup>24,25</sup>				

<sup>24</sup> The translation of this sentence provided by D&D (1987) is "I wonder how many of them and how they got out of there?" I believe the gloss I provide in (27) to be a fair rephrasing of this translation, one that mirrors the syntax of the original Tlingit.

It thus appears that in a Tlingit multiple wh-question, a wh-word subject must precede any wh-word objects or adverbs. This otherwise mysterious requirement would, of course, follow naturally from the Superiority Condition (Kuno & Robinson 1972; Chomsky 1973), but only under the assumption that Tlingit wh-words undergo obligatory fronting in wh-questions. I conclude, then, that the apparent activity of the Superiority Condition in Tlingit multiple wh-questions provides further evidence that wh-operators in Tlingit obligatorily front to the left periphery of the clause.

2.3 Q-Particles in Tlingit Wh-Questions: The Formal Status of *Sá*

I conclude from the grammatical patterns described in Section 2.2 that the wh-operator of a Tlingit wh-question must occupy a left peripheral position within the clause. In this section, I argue that the Tlingit particle *sá* – which obligatorily co-occurs with the language's wh-words – is most plausibly categorized as a Q-particle. Thus, wh-questions in Tlingit are of a kind not widely discussed in the literature: they possess overt Q-particles in addition to obligatory overt fronting of the wh-words.<sup>26</sup>

Unfortunately, this argument must be rather indirect, as there is no deep theoretical significance of the term "Q-particle" in the literature, nor are there any stated diagnostics for applying the term. I will therefore argue that *sá* is a Q-particle on the basis of its strong similarity to the particle *da* in Sinhala and the particle *ka* in Japanese. Given that *da* and *ka* are uncontroversial instances of Q-particles, the overwhelming parallels between *sá*, *da* and *ka* will demand that *sá* receive the same categorization.

A general semantics for Q-particles and wh-words is then proposed, based upon prior, independent research into the semantics of Q-particles (Hagstrom (1998), Shimoyama (2001), Beck (2006)). This semantics is shown to provide a compositional treatment of wh-questions and wh-indefinites in all three languages, and to derive some of the major grammatical properties that the three particles share.

2.3.1 *The Obligatory Presence of Sá*. A wh-question in Tlingit must contain the particle *sá*. If this particle is removed from any of the sentences above, the result is ill-formed.

<sup>25</sup> Note that unlike sentences (24) – (26), sentence (27) contains only a single Q-particle, though it contains more than one fronted wh-word. This presents a rather direct, *prima facie* challenge to our analysis in (3). Note, however, than an analysis along the lines of Grewendorf (2001) may be possible here. Grewendorf (2001) proposes that multiple wh-fronting in some languages is derived by the movement of a lower wh-word into the projection of a higher wh-word, which then subsequently fronts. Sentence (27), therefore, may reflect a structure where the lower wh-word *waa* 'how' has moved into the QP dominating *x'oon* 'how many'. Subsequent fronting of the QP would then derive the structure in (27), in a manner consistent with the core proposal in (3).

<sup>26</sup> Although not widely discussed, languages possessing such wh-question formation strategies are not unheard of. Another prominent example is the Tupi languages of Central and South America (Brandon & Seki 1984). Note that I am speaking here of languages which require *wh-questions* to have particles (in addition to wh-movement); much more widely attested are languages possessing both wh-movement (without particles) in wh-questions and 'yes/no'-question particles in polar questions (Bruening 2004).

(28) The Obligatory Presence of *Sá* in Tlingit Wh-Questions

- a. Daa \*(sá) aawaxáa i éesh?  
what Q he.ate.it your father  
*What did your father eat?*
- b. Goodéi \*(sá) kkwagóot?  
where.to Q I.will.go  
*Where will I go?*

As in many languages, wh-words in Tlingit may also function as indefinites. When they do, the particle *sá* is still obligatory.

(29) The Obligatory Presence of *Sá* with Tlingit Wh-Indefinites

- Tlél goodéi \*(sá) xwagoot.  
not where.to Q I.went  
*I didn't go anywhere.*

The data in (29) demonstrate that *sá* is required not only by the interrogative force of the clause, but by the wh-word itself. Although this may seem to undercut the label “question particle”, this property also holds for such prototypical ‘Q-particles’ as Japanese *ka* and Sinhala *da*.<sup>27, 28</sup>

<sup>27</sup> It should be noted, however, that there are a number of particles besides *da* and *ka* which wh-indefinites in Sinhala and Japanese may appear with. This is not so for Tlingit.

<sup>28</sup> Another salient difference between Tlingit *sá* and the other two particles is that *sá* can only appear in sentences containing wh-words. The particle *sá* simply has no use outside of its obligatory co-occurrence with wh-words. This is unlike Japanese *ka* and Sinhala *da*, which can function both as markers of polar questions and as disjunctive operators (Hagstrom 1998).

In this context, however, let us note that polar (yes/no) questions in Tlingit are formed via insertion of the particle *gé*, as illustrated by the following, iconic sentence.

(i) Lingít gé x'eyááxch?  
Tlingit y/n you.understand.it  
*Do you speak Tlingit?*

Thus, in Tlingit, wh-questions and yes/no questions are formed via two distinct particles. I suspend judgment here as to whether the particle *gé* should also be regarded as an instance of Q. Nevertheless, given the distinction between *gé* and *sá* in Tlingit, I assume that the use of *da/ka* in Sinhala/Japanese polar questions reflects the existence of a separate, homophonous ‘yes/no’ particle. Thus, the apparent difference noted above might be only apparent, as the actual, underlying correlates of *sá* in Japanese and Sinhala likewise appear only in wh-questions.

(30) The Obligatory Presence of *Da* in Sinhala Wh-Questions and Wh-Indefinites

- a. Chitra monawa \*(da) gatte?  
Chitra what Q bought  
*What did Chitra buy?* (Kishimoto 2005; p. 3, 4)
- b. Mokak \*(da) waetuna.  
what Q fall  
*Something fell.* (Hagstrom 1998; p. 23)

(31) The Obligatory Presence of *Ka* in Japanese Wh-Questions and Wh-Indefinites

- a. John-ga nani-o kaimasita \*(ka)?<sup>29</sup>  
John-nom what-acc bought.polite Q  
*What did John buy?*
- b. John-ga nani-(ka)-o katta.  
John-nom what-Q-acc bought  
*John bought something.*

The data in (30) and (31) lead Hagstrom (1998) to propose a semantic analysis of Q-particles under which they are expected to appear both within wh-questions and with wh-words interpreted as indefinites in declarative clauses. I will later show that this semantic analysis may with minor modification be extended to the Tlingit particle *sá*, and would similarly predict its parallel grammatical behavior. Such a shared semantics would constitute one strong reason to apply the label “Q-particle” to Tlingit *sá*.

2.3.2 *The Structural Position of Sá*. As can be seen from most of the sentences above, it is common for the particle *sá* to be located directly to the right of a wh-word.

(32) *Sá* Directly to the Right of a Wh-Word

- a. Daa sá aawaxáa i éesh?  
what Q he.ate.it your father  
*What did your father eat?*

<sup>29</sup> In highly colloquial Japanese, it is reportedly possible to drop *ka* in matrix wh-questions like (31a) (Lasnik & Saito 1992, Yoshida & Yoshida 1996, Ko 2005). However, there are certain stringent conditions governing this ‘particle drop’, and under at least one current account, such sentences contain an unpronounced *ka* (Ko 2005).

- b. **Daa sá i tuwáa sigóo** [ \_\_\_\_ yéi isaneiyí ] ?  
 what Q your spirit it.is.glad you.do.it  
*What do you want to do?*
- c. **Aa sá daa sá du tuwáa sigóo** [ \_\_\_\_ wutoo.oowú ] ?<sup>30</sup>  
 who Q what Q their spirit it.is.glad we.buy.it  
*Who wants us to buy what?*

However, this particle can also appear further to the right, detached from the interrogative word. This is evident from sentences such as (14c), (16b), and (22a). More examples illustrating such rightward positioning of *sá* appear below.

(33) **Sá Separated From the Wh-Word**

- a. [ **Goodéi** ] sá kkwagóot?  
 where.to Q I.will.go  
*Where will I go to?*
- b. [ **Goodéi woogootx** ] sá has uwajée i shagónich?<sup>31</sup>  
 where.to he.went Q they.think your parents.erg  
*Where do your parents think that he went?*
- c. [ **Aadóo yaagu** ] sá ysiteen?  
 who boat Q you.saw.it  
*Whose boat did you see?*
- d. [ **Daakw keitl** ] sá ashaa?  
 which dog Q it.barks  
*Which dog is barking?*

Upon examination of just the sentences in (32) and (33), one might form the simple hypothesis that the particle *sá* can be freely placed *anywhere* to the right of the interrogative word. Although this would be the simplest conclusion, the ill-formedness of sentences (34b) and (35b) demonstrates that it cannot be correct.

(34) **Tlingit Sá Must C-Command the Wh-Word**

- a. [ **Aadóo jeet** ] sá wé sakwnéin aawatee?  
 who hand.to Q that bread he.brought.it  
*Who did he give the bread to?*
- b. \* [ **Aadóo jeet** ] wé sakwnéin sá aawatee?  
 who hand.to that bread Q he.brought.it

(35) **Tlingit Sá Must C-Command the Wh-Word**

- a. [ **Goodéi** ] sá has uwajée woogootx i shagónich?  
 where.to Q they.think he.went your parents.erg  
*Where do your parents think he went*
- b. \* [ **Goodéi** ] has uwajée woogootx sá i shagónich?  
 where.to they.think he.went Q your parents.erg

Rather, the correct generalization is that *sá* must appear either directly to the right of the wh-word, or directly to the right of a phrase containing the wh-word. In other words, the particle *sá* has to c-command the wh-word.

The condition that the Q-particle c-command the wh-word also holds of Sinhala *da* (Kishimoto 2005; p. 13) and Japanese *ka* (Yatsushiro 2001; p. 183).

(36) **Sinhala Da Separated from the Wh-Word (Kishimoto 2005; p. 13)**

- a. Chitra [ **mona pota** ] da gatte?  
 Chitra what book Q bought  
*What book did Chitra buy?*
- b. Chitra [ **kaa-ge amma** ] da daekke?  
 Chitra who-gen mother Q saw  
*Whose mother did Chitra see?*
- c. Chitra [ **kauru ekka** ] da kataa kalee?  
 Chitra who with Q talk did  
*Who did Chitra talk with?*

<sup>30</sup> Note that sentence (32c) illustrates that possessor-extraction in Tlingit is licensed by pronominal resumption. This construction is further discussed in Footnote 65.

<sup>31</sup> Note that sentence (33b) also demonstrates that subordinate CPs in Tlingit may be pied-piped.

(37) Japanese *Ka* Separated from the Wh-Word (Yatsushiro 2001; p. 182)

- [ [ **Dare**-no hahoya ]-**ka**-no kaban-wa ] koko-ni aru.  
 who-GEN mother-Q-GEN bag-TOP here-LOC is  
*The bag of the mother of someone or other is here.*

Such identity of distribution further emphasizes the formal similarity between *sá*, *da* and *ka*. Moreover, it will be shown in section 2.3.5 that this apparently syntactic condition on the placement of these particles follows from a particular semantic theory of Q-particles and wh-words.

**2.3.3 Q-Particles and Extraction Islands.** One of the most intriguing similarities between Tlingit *sá* and Sinhala *da* concerns their behavior with respect to islands. As described in Hagstrom (1998) and Kishimoto (2005), the wh-operator of a Sinhala wh-question may be contained inside an island if and only if the Q-particle *da* is merged outside the island. In the case of relative clause islands, the Q-particle must be merged to the right of the head of the relative clause. The following data, taken from Kishimoto (2005; p. 29), illustrate.<sup>32</sup>

## (38) Interaction Between Q-Particle and Relative Clause Islands in Sinhala

- a. Oyaa [ [ Chitra **kaa-ta** dunna cp] pota NP] **da** kieuwe?  
 you Chitra who-dat give book Q read  
*Who did you read the book that Chitra gave?*
- b. \* Oyaa [ [ Chitra **kaa-ta** **da** dunna cp] pota NP] kieuwe?  
 you Chitra who-dat Q give book read

The same condition can be observed in Tlingit. The wh-operator of a Tlingit wh-question may be contained inside an island if and only if the particle *sá* is merged outside the island. When this occurs, the entire island is pied-piped into the left periphery of the interrogative clause. In the case of relative clause islands, the particle *sá* must be merged to the right of the head of the relative clause.

<sup>32</sup> Because Japanese *ka* obligatorily moves to the end of the interrogative clause, it cannot be easily determined whether this property also holds of the Japanese Q-particle. However, Hagstrom (1998; p. 40) argues that the behavior of the emphasis marker *ittai* in Japanese provides indirect evidence that it does.

## (39) Interaction Between Q-Particle and Relative Clause Islands in Tlingit

- a. [ [ **Wáa** kligéiyi CP] **xáat** NP] **sá** i tuwáa sigóo? <sup>33</sup>  
 how it.is.big.REL fish Q your spirit it.is.happy  
*How big a fish do you want? (A fish that is how big do you want?)*
- b. \* [ [ **Waa** **sá** kligéiyi CP] **xáat** NP] i tuwáa sigóo?  
 how Q it.is.big.REL fish your spirit it.is.happy
- c. \* [ [ **Wáa** kligéiyi CP] **sá** **xáat** NP] i tuwáa sigóo?  
 how it.is.big.REL Q fish your spirit it.is.happy

## (40) Interaction Between Q-Particle and Relative Clause Islands in Tlingit

- a. [ [ **Wáa** yateeyí CP] shák'sáani NP] **sá** ash kudlénxa?  
 how they.are.REL girls Q they.are.tempting.him  
*What kind of girls are tempting him? (Girls that are how are tempting him?)*
- b. \* [ [ **Waa** **sá** yateeyí CP] shák'sáani NP] ash kudlénxa?  
 how Q they.are.REL girls they.are.tempting.him
- c. \* [ [ **Wáa** yateeyí CP] **sá** shák'sáani NP] ash kudlénxa?  
 how they.are.REL Q girls they.are.tempting.him

## (41) Interaction Between Q-Particle and Relative Clause Islands in Tlingit

- a. [ [ **Wáa** yateeyí CP] shák'sáani NP] **sá** sh tuwáa gaa yatee?  
 how they.are.REL girls Q refl.spirit for they.are  
*What kind of girls are pleasing to his eye? (Girls that are how are pleasing to his eye?)*
- b. \* [ [ **Waa** **sá** yateeyí CP] shák'sáani NP] sh tuwáa gaa yatee?  
 how Q they.are.REL girls refl.spirit for they.are

<sup>33</sup> Like many languages, Tlingit does not possess a productive category of adjectives, and so most nominal modification is accomplished with relative clauses. Thus, questions regarding the degree to which some NP possesses a given property (e.g. "How ADJ a NP") must in Tlingit be asked using a structure in which the wh-word is buried within a relative clause. This fact greatly aids the elicitation in Tlingit of wh-questions with island-internal wh-words.

- c. \* [ [ Wáa yateeyí cp] sá shák'sáani np] sh tuwáa gaa yatee?  
 how they.are.REL Q girls refl.spirit for they.are

The data above further emphasize the syntactic parallels between Tlingit *sá* and Sinhala *da*. In Section 2.4, we will see that a uniform syntactic account can be provided for these facts, just so long as both these particles share a syntactic categorization as Q-particles.

**2.3.4 Q-Particles at the Right Edge of the Matrix Clause.** One final interesting parallel between Sinhala *da* and Tlingit *sá* is that neither particle may freely appear at the right edge of the matrix clause.<sup>34, 35</sup>

(42) **Sinhala Da Cannot Appear at the Right Edge of a Matrix Clause (Kishimoto 2005)**

- a. Chitra monawa da gatte?  
 Chitra what Q buy  
*What did Chitra buy?*
- b. \* Chitra monawa gatta da?  
 Chitra what buy Q

(Kishimoto 2005; p. 3, 4)

(43) **Tlingit Sá Cannot Appear at the Right Edge of a Matrix Clause**

- a. Daa sá iyatéen? c. Aadóo sá xáat aawaxáa  
 what Q you.can.see.it who Q fish he.ate.it  
*What can you see?*
- b. \* Daa iyatéen sá? d. \* Aadóo xáat aawaxáa sá?  
 what you.can.see.it Q who fish he.ate.it Q

This is despite the fact that both particles may freely appear at the right edge of *subordinate* clauses, as illustrated below.

<sup>34</sup> This property clearly does not hold of the Japanese particle *ka*.

<sup>35</sup> Hagstrom (1998) and Kishimoto (2005) describe some limited cases where Sinhala *da* may appear at the right edge of a matrix wh-question. I do not know whether similar structures are also allowable in Tlingit.

We should also note here that Sinhala *da* can appear matrix-finally in yes/no questions.

(i) Chitra ee pota kieuwa da?  
 Chitra that book read yes/no  
*Did Chitra read that book?* (Hagstrom 1998; p. 21)

Recall from Footnote 28, however, that I assume that the particles required in yes/no questions are distinct (though possibly homophonous to) the Q-particles appearing in wh-questions and wh-indefinites. Thus, the behavior of *da* in Sinhala yes/no questions does not bear on the identity between Tlingit *sá* and the particle *da* in Sinhala wh-questions.

(44) **Sinhala Da Can Appear at the Right Edge of a Subordinate Clause**

- Ranjit [ kauru aawa kiyala ] da danne?  
 Ranjit who came that Q know  
*Who does Ranjit know come?* (Kishimoto 2005; p. 13)

(45) **Tlingit Sá Can Appear at the Right Edge of a Subordinate Clause**

- [ Goodéi woogootx ] sá has uwajée i shagóonich?  
 where.to he.went Q they.think your parents.org  
*Where do your parents think that he went?*

Again, it will be shown later in Section 4 that a uniform account can be provided for these facts, but only if Tlingit *sá* and Sinhala *da* are assumed to be the same formal entity, a Q-particle.

**2.3.5 Towards a Semantics of Wh-Words and Q-Particles.** In this section, I will quickly sketch a semantics for wh-words and Q-particles that may be applied to wh-questions and wh-indefinites in Tlingit, Sinhala and Japanese. It will be shown that this semantics derives several of the core grammatical features of the particles *sá*, *ka* and *da*. The profitability of a uniform semantic analysis for these particles further argues that they should all be analyzed as ultimately the same formal entity, namely, a 'Q-particle'.

For reasons of space, the discussion here will be rather compact, and will presuppose some familiarity with current work on the semantics of wh-words and Q-particles, particularly Hagstrom (1998), Shimoyama (2001), Kratzer & Shimoyama (2002), and especially Beck (2006). For critical background and a lengthier exposition of the major leading ideas, I refer the reader to the aforementioned works.

Following Beck (2006), I will assume that wh-words in all languages have only a focus-semantic value; their normal-semantic value is undefined. Although wh-words do not have a defined normal-semantic value, they nevertheless have a lexically assigned semantic type and value for animacy. Thus, following proposals originating with Rooth (1985), the focus-semantic value of a focus-marked wh-word is a set of 'alternatives', each of the same logical type and animacy as the wh-word. For example, the wh-words *what* (English), *daat* (Tlingit), *nani* (Japanese) and *mokak* (Sinhala) all have the following characteristic semantics.

## (46) Semantics of WHAT

normal-semantics:  $[[ \text{what} / \text{daat} / \text{nani} / \text{mokak} ]] = \text{undefined}$

focus-semantics:  $[[ \text{what}_F / \text{daat}_F / \text{nani}_F / \text{mokak}_F ]]^F = \{ x_e : x \text{ is non-human} \}$

There are several benefits to this particular treatment of wh-words. First, as shown in Beck (2006), it provides an interesting account of various ‘LF-’ or ‘Focus-Intervention Effects’ across languages. Furthermore, it provides a clear, straightforward reason why wh-words *must* be structurally focused in so many of the world’s languages; if wh-words were not focused, then a semantic crash would necessarily result.<sup>36</sup> It should also be noted that this system, unlike those in Hagstrom (1998) and Shimoyama (2001), identifies the ‘alternatives’ denoted by wh-words as focus-semantic values. This eliminates the need for special rules of point-wise semantic composition specifically for the values of wh-words, and instead employs the point-wise composition rules which are independently needed for the computation of focus-semantic values. Finally, it will be shown that, given plausible ancillary hypotheses, this treatment predicts several of the core grammatical properties of Q-particles noted above.

Following the proposals of Hagstrom (1998) and Yatsushiro (2001), I assume that the particles *sá*, *ka* and *da* are all variables over choice functions.<sup>37, 38</sup> Since they are variables, Q-particles are consequently assumed to carry indices.<sup>39</sup> Thus, the Q-particles *sá*, *ka* and *da* all have the following characteristic semantics.

## (47) Semantics of Q

$$[[ sá_i / ka_i / da_i ]]^g = g(i) \in D_{cf}$$

Higher operators can, of course, bind these choice function variables. For example, an existential operator over choice functions can be inserted via an optional rule of existential closure (Reinhart 1992, 1997; Yatsushiro 2001). Finally, Q-particles are assumed to semantically compose with their sisters via a syncategorematic rule specific to Q-particles (c.f.

<sup>36</sup> Of course, this accounts renders problematic those languages where it seems that wh-operators needn’t be obligatorily focused, as in English. Moreover, as the reader may later see more clearly, difficult questions also arise concerning the tendency for wh-indefinites to be *un*-focused in many languages, such as German.

<sup>37</sup> Throughout this paper, I adopt the label *cf* as a means for abbreviating the logical type of the choice function. Furthermore, I implicitly assume a cross-categorical definition for choice functions, of the kind used in Winter (1997).

<sup>38</sup> Properly speaking, although Hagstrom (1998) considers this proposal, he ultimately rejects it, opting for a theory in which the Q-particles are operators while the *traces* of the Q-particles denote variables over choice functions.

<sup>39</sup> Indexation of Q-particles is also a feature of the analysis in Beck (2006), but for very different reasons. In Beck (2006), the indices on the particles allow the particles to bind focus-semantic variables. Under my proposal, these indices allow the Q-particles to be bound by higher operators.

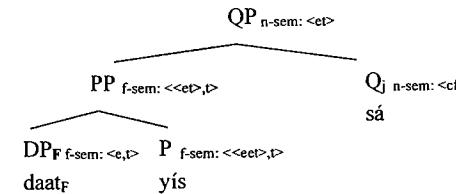
Beck 2006). The normal-semantic value of a Q-particle and its sister is stipulated to be the normal semantic value of the Q-particle applied to the *focus* semantic value of its sister. The rule may be stated as follows.

## (48) Special Composition Rule for Q-Particles

$$[[ Q_i XP ]] = [[ Q_i ]]( [[ XP ]]^F )$$

With the semantic machinery thus far introduced, we can provide a compositional semantics for wh-indefinites in Tlingit, Sinhala and Japanese. The following illustrates the semantics derived for the Tlingit phrase *daat yís sá* ‘for something’, which is assumed to have the structure in (49). The reader is invited to confirm that this analysis may be easily extended to the wh-indefinites we’ve seen in Japanese and Sinhala.

## (49) Semantics of Wh-Indefinites in Tlingit



$[[ QP ]]^g = [[ PP Q_j ]]^g$	(by Identity)
$[[ PP Q_j ]]^g = [[ Q_j ]]^g ( [[ PP ]]^{F,g} )$	(by (48))
$[[ Q_j ]]^g ( [[ PP ]]^{F,g} ) = f_{g(j)} ( [[ PP ]]^{F,g} )$	(by Lexicon)
$[[ DP ]]^{F,g} = \{ x : x \text{ is non-human} \}$	(by (46))
$[[ P ]]^F = \{ \lambda y. \lambda x. x \text{ is for } y \}$	(by Standard Rules)
$f_{g(j)} ( [[ PP ]]^{F,g} ) = f_{g(j)} ( \{ f^{<e,>} : \exists y. y \text{ is non-human} \& f^e = \lambda x. x \text{ is for } y \} )$	(by P.W. Composition)
$f_{g(j)} ( [[ PP ]]^{F,g} ) = f_{g(j)} ( \{ f^{<e,>} : \exists y. y \text{ is non-human} \& f^e = \lambda x. x \text{ is for } y \} )$	

Thus, relative to a variable assignment *g*, the value of the Tlingit phrase *daat yís sá* is calculated to be  $f_{g(j)}(f^{<e,r>} : \exists y. y \text{ is non-human} \& f^e = \lambda x. x \text{ is for } y)$ . However, since  $f_{g(j)}$  is a choice function, this entails that the semantic value of the phrase is some particular *<e, r>* relation  $f^e = \lambda x. x \text{ is for } y$ , where *y* is a non-human. Thus, the semantic value of the phrase is equivalent to that of a phrase where the wh-word is replaced with a (non-human) pronoun. For largely this reason, existential quantification over the choice function variable contributed by *sá* is materially equivalent to existential quantification over the domain of (non-human) entities. Thus, the existential interpretation of wh-indefinites in Tlingit (and other languages)

may be obtained from the proposed semantics via existential quantification over the choice function variable contributed by the Q-particle, the existential operator being provided by an (optional) rule of existential closure. I refer the reader to the literature on choice-functional interpretations of indefinites for a richer discussion (c.f., Reinhart 1992, Reinhart 1997, Winter 1997, Kratzer 1998, Matthewson 1999, Yatsushiro (2001)).

Of course, in cases where the rule of existential closure does not apply, the choice-function variable denoted by Q can be bound by other, higher operators. One such case, to be discussed in a moment, is wh-questions, where the variable contributed by Q is bound by a higher interrogative operator.

However, before I sketch how wh-questions may be treated in this framework, let us return to the argument that the particles *sá*, *ka* and *da* should receive a uniform analysis as ‘Q-particles’. We will see that, with the addition of two plausible assumptions, the proposed semantics can derive some of the grammatical properties these particles were observed to share. In particular, it can derive both the fact that wh-words require the presence of these particles, as well as the fact that these particles must c-command their associated wh-word.<sup>40</sup>

The theory of LF/Focus-Intervention Effects put forth in Beck (2006) relies upon two, independently plausible assumptions. The first is the Principle of Interpretability, stated in (50).

#### (50) Principle of Interpretability (cf. Beck 2006; p. 16)

A sentence must have a normal-semantic value.

As stated, this principle entails that any sentence which cannot be computed to have a normal-semantic value is ill-formed. A second assumption made by Beck (2006) is somewhat more complex, but equally as crucial.

#### (51) Uniqueness of the Q-Particle (cf. Beck 2006; p. 13)

The Q-particle is the only focus-sensitive operator whose meaning does not also take as input the normal-semantic value of its sister.

Let us pause to consider what the condition in (51) states. The reader will note that, according to the semantics stated in (48), the meaning of a phrase containing a Q-particle does not at all rely upon the normal-semantic value of the sister of the Q-particle. Of course, this insensitivity is needed for our semantics to work. Given that wh-words are assumed *not* to have normal-

<sup>40</sup> In Cable (2007), I show that our semantics can also predict, given the addition of one further assumption, the need for Q-particles to appear with wh-words. That is, we can correctly predict that wh-questions cannot be asked via structures like the following.

(i) { [DAVE's picture] Q ] did John buy? (= *Whose picture did John buy?*)

semantic values, the sister of the Q-particle will never have a normal-semantic value. Thus, if semantic composition required us to compute the normal-semantic value of the Q’s sister, the derivation would crash. Although this insensitivity to normal-semantics is required for Q, it is clearly not a property of other focus sensitive operators, such as *only* and *even*. The principle in (51) – which is crucial for the theory of Beck (2006) – states that, in fact, it is *only* the Q-particle which has this peculiar insensitivity to normal-semantic values.<sup>41</sup>

Let us now see why the assumptions in (50) and (51) are sufficient to derive the fact that wh-words must co-occur with Q-particles. Suppose that a wh-word in a given sentence is *not* c-commanded by a Q-particle. By assumption, then, either (i) the wh-word is c-commanded by a focus-sensitive operator *OP* that is *not* Q, or (ii) the wh-word is not c-commanded by *any* focus-sensitive operator. Let us first consider condition (i). Since *OP* is not a Q-particle, principle (51) entails that the semantic computation for the entire sentence requires one to compute the normal-semantic value of the sister of *OP*. However, since *OP* c-commands the wh-word, it follows that the sister of *OP* contains the wh-word. Therefore, computing the normal-semantic value of the sister of *OP* requires one to compute the normal-semantic value of the wh-word, and so the sentence is predicted to be uninterpretable. Now, let us consider condition (ii). Since there is no focus-sensitive operator c-commanding the wh-word at all, computing the normal semantic value for the entire sentence requires that one compute the normal-semantic value of the wh-word. However, since the wh-word does not have a normal-semantic value, the derivation crashes. Resultingly, the sentence cannot be assigned a normal-semantic value, in violation of principle (50).

We find, then, that the principles in (50) and (51) entail that every wh-word must be c-commanded by a Q-particle. We find, then, that the grammatical properties observed to hold of *sá*, *ka* and *da* in Sections 2.3.1 and 2.3.2 follow from a well-motivated theory of the semantics of Q-particles and wh-words. Therefore, the categorization of all these particles – including Tlingit *sá* – as Q-particles is quite well-motivated.

Before we leave this semantic discussion, I wish to provide a somewhat concrete sketch of how wh-questions may be treated within the proposed semantic framework. First, I assume that wh-questions in all languages contain an interrogative Force head,  $\text{Force}_Q$ . This head is semantically an operator, binding the choice-function variable introduced by the Q-particles within the wh-question. As an operator, the  $\text{Force}_Q$  comes paired with an index. Also paired with this  $\text{Force}_Q$  head is the following syncategorematic rule.

#### (52) Special Composition Rule for $\text{Force}_Q$

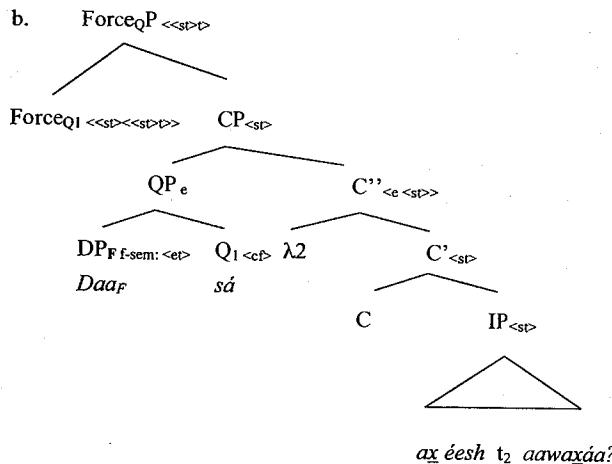
$$[[\text{Force}_{Qi} \text{XP}]]^g = \lambda p [\exists f . p = [[\text{XP}]]^{g(f)}]$$

<sup>41</sup> As noted in Footnote 27, it is possible for wh-indefinites in Sinhala and Japanese to co-occur with particles other than *da* and *ka*, respectively. Under our current semantics for wh-words, it must be assumed that these particles are also insensitive to the normal-semantic values of their sisters. As such, for the purposes of the following discussion, these other indefinite particles will be assumed to fall under the category ‘Q-particles’.

Now, in order to propose a compositional treatment of wh-questions, some assumptions regarding their syntax must be made. With respect to Tlingit, I conclude from the data in Section 2.2 that the wh-word and its accompanying Q-particle are fronted into the left-periphery of the clause. I assume, for concreteness, that they are fronted into the specifier of a CP complement to the Force<sub>Q</sub> head.<sup>42</sup> Thus, the surface structure and LF of the Tlingit wh-question in (53a) is given in (53b).

### (53) The Fine Structure of The Left Periphery

- a. Daa sá ax éesh aawaxáa?  
what Q my father he.ate.it  
*What did my father eat?*



Assuming that the C head here has a trivial semantic value (i.e.,  $[\lambda p. p]$ ), the following derivation demonstrates that our semantics assigns the correct meaning to the sentence in (53a).

### (54) Derivation of the Meaning of (53a), Given the Structure in (53b)

$[[\text{Force}_Q P]]^g$	=	$\lambda p [ \exists f . p = [[CP]]^g ]^{(1/0)}$	(by Identity, (52))
$[[CP]]^{g(1/0)}$	=	$[[QP C'']]^{g(1/0)}$	(by Identity)
$[[C'']]^{g(1/0)}$	=	$\lambda x . \text{my father ate } x$	(by Standard Rules)
$[[QP]]^{g(1/0)}$	=	$[[DP Q_1]]^{g(1/0)}$	(by Identity)
$[[DP Q_1]]^{g(1/0)}$	=	$[[Q_1]]^{g(1/0)} ( [[DP]]^{F, g(1/0)})$	(by (48))
$[[Q_1]]^{g(1/0)} ( [[DP]]^{F, g(1/0)})$	=	$f ( [[DP]]^{F, g(1/0)})$	(by Lexicon)
$f ( [[DP]]^{F, g(1/0)})$	=	$f (\{ x : x \text{ is non-human} \})$	(by (46))
$[[QP C'']]^{g(1/0)}$	=	$\text{my father ate } f(\{ x : x \text{ is non-human} \})$	
$[[\text{Force}_Q P]]^g$	=	$\lambda p [ \exists f . p = \text{my father ate } f(\{ x : x \text{ is non-human} \}) ]$	

Thus, the semantics derives as the meaning of the wh-question in (53a), the set of propositions  $p$  such that there is some choice function  $f$  such that  $p$  is of the form “my father ate  $f(\{ x : x \text{ is non-human} \})$ ”. Again, given that there are at least as many choice functions over a set as there are entities in the set, this set of propositions is equivalent to the set of propositions  $p$  of the form “my father ate  $x$ ”, where  $x$  is some non-human entity. We see, then, that this semantic system assigns the standard interrogative semantics to the wh-question in (53a). Interestingly, it does so without assigning any inherent quantificational force to the wh-word itself. This point will be expanded upon in our later discussion concerning the extension of our analysis of Tlingit wh-questions to the wh-questions of other, more familiar wh-fronting languages.

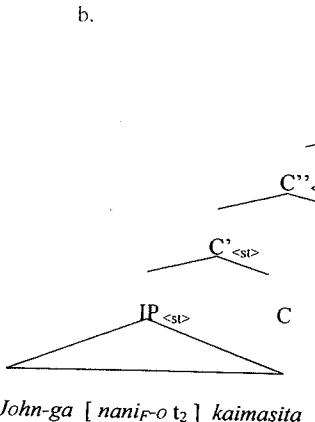
Let us finally see how these assumptions can be brought to bear on the analysis of Japanese wh-questions.<sup>43</sup> I follow Hagstrom (1998) in my assumption that wh-questions in Japanese involve movement of the Q-particle *ka* to a position within the CP projection. In particular, I assume that the wh-question in (55a) has the structure in (55b).

### (55) The Fine Structure of Wh-Questions in Wh-In-Situ Languages

- a. John-ga nani-o kaimasita ka?  
John-NOM what-ACC bought Q  
*What did John buy?*

<sup>42</sup> Under the theory of the left-periphery put forth in Rizzi (1997), this position may be identified as the specifier of the Focus Phrase.

<sup>43</sup> Wh-questions in Sinhala are assumed to be identical at LF to either wh-questions in Tlingit or those in Japanese. This point will receive further discussion in sections 3 and 4.



The structure in (55b) has the following noticeable difference from that in (53b): the Q-particle has moved, leaving behind a trace in its base position. I assume that the trace of Q-movement is itself also a variable over choice functions, one which is bound by the lambda operator created by movement of the Q-particle. Thus, the C'' in (55b) is interpreted as a function from choice-functions to truth-values. The following derivation demonstrates the empirical adequacy of this analysis.<sup>44</sup>

#### (56) Derivation of the Meaning of (55a), Given the Structure in (55b)

$$\begin{aligned}
 [[\text{Force}_Q \text{P}]]^g &= [[\text{CP} \text{Force}_{Q \text{I}}]]^g && (\text{by Identity}) \\
 [[\text{CP} \text{Force}_{Q \text{I}}]]^g &= \lambda p [\exists f. p = [[\text{CP}]]^{g(1/f)}] && (\text{by (52)}) \\
 [[\text{CP}]]^{g(1/f)} &= [[C'' \text{QI}]]^{g(1/f)} && (\text{by Identity}) \\
 [[C'']]^{g(1/f)} &= \lambda f. \text{John bought } f(\{x: x \text{ is non-human}\}) && (\text{by Standard Rules}) \\
 [[\text{QI}]]^{g(1/f)} &= f && (\text{by Lexicon}) \\
 [[C'' \text{QI}]]^{g(1/f)} &= \text{John bought } f(\{x: x \text{ is non-human}\}) \\
 [[\text{Force}_Q \text{P}]]^g &= \lambda p [\exists f. p = \text{John bought } f(\{x: x \text{ is non-human}\})]
 \end{aligned}$$

Thus, the proposed semantics derives as the meaning of the wh-question in (55a) the set of propositions  $p$  such that there is some choice function  $f$  such that  $p$  is of the form "John bought  $f(\{x : x \text{ is non-human}\})$ ". Given our ontological assumptions, this set of propositions is

<sup>44</sup> The reader will note that there is a small lacuna in the derivation under (56). The syncategorematic rule in (48) only allows Q to semantically compose with the *focus*-semantic value of its sister. However, the derivation in (56) clearly composes the meaning of moved Q with the *normal*-semantic value of C''. This special composition, however, is only required because the system presently assumes that the traces of Q are interpreted at LF. This assumption is given up in Cable (2007), where it is instead assumed that the traces of Q are deleted by LF. Within such a system, the composition of Q with C'' proceeds via rule (48) as normal.

equivalent to the set of propositions  $p$  of the form "John bought  $x$ ", where  $x$  is some non-human entity. We see, then, that this semantic system correctly assigns the standard interrogative semantics to the wh-question in (55a).

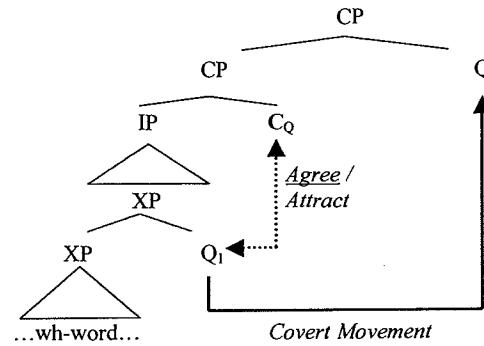
I conclude that it is possible to build a compositional semantics of wh-questions upon the semantic analysis of Q-particles and wh-words proposed above, one which moreover has a fair degree of cross-linguistic validity.

#### 2.4 Movement of the Wh-Word as a Consequence of Q-Movement

In the preceding sections, we have seen that (i) wh-operators obligatorily occupy a left-peripheral position in Tlingit wh-questions, and that (ii) wh-words in Tlingit are obligatorily c-commanded by a Q-particle. In this section, I will argue that the left-peripheral position of wh-operators in Tlingit wh-questions is due to attraction of their c-commanding Q-particle into the left-periphery of the clause. That is, I will argue that there is *no* special relationship between the attracting C head and the wh-operator itself in Tlingit wh-questions. The generalization that the wh-operator is in the projection of C is merely an epiphenomenal consequence of a real grammatical relation between the C head and the Q-particle associated with the wh-operator.

I will begin by noting that various lines of evidence lead Hagstrom (1998) and Kishimoto (2005) to propose the following analysis of wh-questions in Sinhala.

#### (57) Hagstrom (1998) and Kishimoto (2005)'s Analysis of Sinhala Wh-Questions

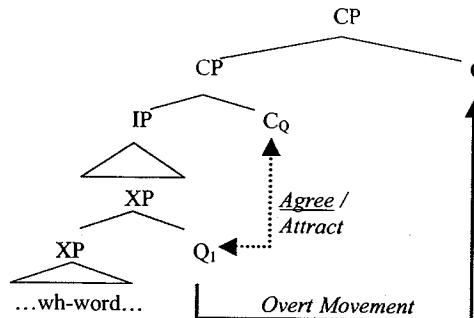


Under this analysis, the Sinhala Q-particle *da* is adjoined to a phrase containing the wh-operator of the question. The interrogative C head of the wh-question then probes for the Q-feature of this Q-particle. Upon reaching the adjoined Q-particle, the interrogative C Agrees with Q. This Agreement triggers movement of the Goal, the Q-particle, into the projection of

C.<sup>45</sup> Because the Q-particle is adjoined to its sister, it may freely detach from its base position. Therefore, its movement into the CP, which is typically covert in Sinhala, leaves the wh-word and the phrases containing it in their base positions at LF.

Other lines of evidence lead Hagstrom (1998) to extend the ideas underlying this analysis of Sinhala to wh-questions in Japanese. Hagstrom (1998) proposes the following as the derivation of wh-questions in Japanese.

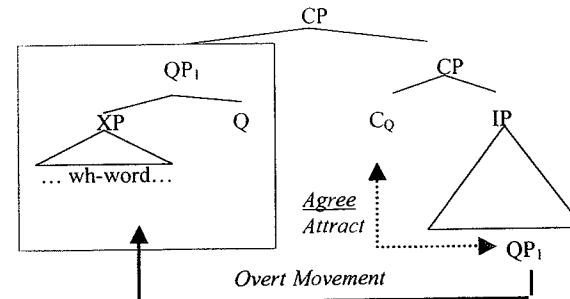
(58) Hagstrom (1998)'s Analysis of Japanese Wh-Questions



Under this analysis, wh-questions in Japanese are essentially identical to those in Sinhala. The sole difference is that the Q-particle *ka* in Japanese always moves *overtly* into the projection of the C, leaving the wh-word and phrases containing it behind. In both languages, however, interrogative C bears a syntactic relationship *only* with the Q-particle adjoined to (a phrase containing) the wh-operator; no syntactic relationship exists between the C and the wh-operator itself.

Given the formal identity between the Tlingit particle *sá*, the Sinhala particle *da* and the Japanese particle *ka*, the structure in (3) (repeated below) immediately suggests itself as an analysis of wh-questions in Tlingit.

(3) Fronting of Wh-Word in Tlingit Wh-Question as Secondary Effect of Q-Movement



Under the analysis in (3), wh-questions in Tlingit receive a derivation nearly identical to wh-questions in Japanese. The principle difference is that, in Tlingit, the Q-particle *sá* is not *adjoined* to the phrase containing the wh-operator. Rather, it takes that phrase as complement, thus projecting the category of the phrase minimally containing the Q-particle and its sister. As a projection of Q, it would be natural to assume that this QP also bears the Q-feature probed for by the interrogative C. Furthermore, because this QP properly contains the Q-particle, it is the *first* node bearing the Q-feature to be probed by the interrogative C. The standard algorithm for probing therefore entails that interrogative C in Tlingit must Agree with this QP projection. As before, this Agreement requires the Goal – in this case, the QP – to move into the projection of the interrogative C. Thus, the entire QP is Attracted into the left-periphery of the wh-question. Since this constituent necessarily contains the wh-operator of the wh-question, it follows that such wh-words must occupy left-peripheral positions in wh-questions.

We see, then, that the analysis in (3) nicely links together the syntax of wh-questions in Tlingit, Sinhala and Japanese in a typology of wh-question formation. Besides this, there are a number of empirical considerations which strongly support the analysis in (3) for Tlingit wh-questions.

First, it should be noted that wh-questions in Tlingit are ill-formed if only the wh-word or only the Q-particle is fronted into the left periphery. For example, sentence (59a) becomes ill-formed if *sá* is left downstairs in its base position, as in (59b). One might wonder, however, whether the ill-formedness of (59b) is not due simply to a condition requiring that *sá* not be stranded. Such a condition, however, would be too weak, and would not serve to rule out the ill-formed (59c). In sentence (59c), the Q-particle *sá* is not ‘stranded’ since its complement is the unmoved subordinate CP, a possibility that is independently witnessed in sentences like (59d).

<sup>45</sup> Under the analysis of Hagstrom (1998), the Q-particle undergoes HMC-violating head-movement into the interrogative C head itself. However, I follow Kishimoto (2005) in the assumption that movement of Q targets the specifier of the matrix CP.

(59) No Fronting of Wh-Word Alone<sup>46</sup>

- a. [ [ Goodéi sá ]<sub>i</sub> [ has uwajée [ *t<sub>1</sub>* woogootx ] i shagónich ] ]?  
where.to Q they.think he.went your parents.erg  
*Where do your parents think he went?*
- b. \* [ Goodéi [ has uwajée [ *t<sub>1</sub>* sá woogootx ] i shagónich ] ]?  
where.to they.think Q he.went your parents.erg
- c. \* [ Goodéi [ has uwajée [ *t<sub>1</sub>* woogootx sá ] i shagónich ] ]?  
where.to they.think he.went Q your parents.erg
- d. [ [ Goodéi woogootx sá ]<sub>i</sub> [ has uwajée *t<sub>1</sub>* i shagónich ] ]?  
where.to he.went Q they.think your parents.erg  
*Where do your parents think he went?*

Moreover, we can see below that the well-formed sentence (60a) becomes ill-formed if the particle *sá* is fronted into the left-periphery without the wh-word, as in (60b). The ill-formedness of (60b) is not simply due to a condition that *sá* follow some phrasal material in the sentence, as sentence (60c) illustrates.

## (60) No Fronting of Q-Particle Alone

- a. Daa sá i éesh aawaxáa?  
what Q your father he.ate.it  
*What did your father eat?*
- b. \* Sá i éesh daa aawaxáa?  
Q your father what he.ate.it
- c. \* I éesh sá daa aawaxáa?  
your father Q what he.ate.it

On the other hand, all the data in (59) and (60) would follow naturally from the analysis in (3). Under this analysis, a well-formed wh-question in Tlingit *must* have the Q-particle *sá* within its

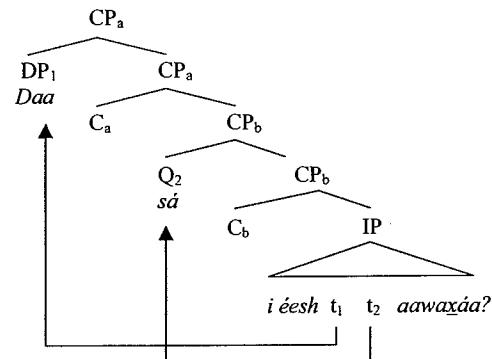
<sup>46</sup> An anonymous reviewer raises the interesting question of whether there is any difference in meaning between (59a) and (59d). To my knowledge, whether a long-distance question in Tlingit is formed via long-distance movement of the QP or via pied-piping of the subordinate clause has no effect on the sentence's meaning. This fact is discussed at more length in Cable (2007), where it is claimed that predicting this synonymy is an achievement of our semantic system.

left periphery, thus ruling out sentences (59b, c). Furthermore, under the analysis in (3), the fronting of the QP necessarily brings with it the wh-word associated with *sá*, as that wh-word is contained within the QP. Thus, sentences (60b, c) are ruled out under the analysis in (3).

Now, one might still attempt to resist the notion that the Q-particle is attracted into the left-periphery of a Tlingit wh-question by supposing that the ill-formedness of sentences like (59b, c) simply reflects the requirement that wh-words in Tlingit be c-commanded by Q-particles. Recall from Section 2.3.5, however, that that this c-command condition follows from the semantics of wh-words and Q-particles. Therefore, LF-reconstruction of the wh-word to its base position should be sufficient to render sentences (59b, c) semantically interpretable. I conclude, then, that the impossibility of (59b, c) is due to something other than the semantic factors which require wh-words to be c-commanded by Q-particles.<sup>47</sup>

Of course, one might conclude from the facts in (59) and (60) that *both* the wh-operator and the Q-particle are Attracted into the left periphery of a Tlingit wh-question, perhaps by separate heads, as diagrammed in (61).

## (61) Wh-Operator and Q-Particle Both Attracted, but by Separate Heads



An immediate problem for the structure in (61), however, arises in the context of multiple wh-questions. Sentences such as those in (62) demonstrate that all the wh-words of a Tlingit multiple wh-question may front into the left periphery of the clause.<sup>48</sup>

<sup>47</sup> One might also propose that (59c) is impossible because the Q-particle occupies a Spec position in the lower CP, blocking extraction of the wh-word. However, sentences such as those in (62) below demonstrate that Tlingit CPs may have multiple specifiers, and so extraction of the wh-word should not be blocked simply by the presence of Q in Spec CP.

<sup>48</sup> Such multiple fronting, however, does not appear to be obligatory.

(i) [CP [ Aadóo sá ]<sub>i</sub> [P *t<sub>1</sub>* yéí uwajée [ [daa sá ] du jee yéí teeyí ] ] ]?  
who Q they.think what Q their hand.at it.is.there  
*Who thinks they have what?*

It is not yet known, however, whether the wh-word in the subordinate clause lies in its base position, or in the SpecCP of the subordinate clause.

## (62) Multiple Wh-Fronting in Tlingit Multiple Wh-Questions

- a. [CP [ Aadóo sá ]<sub>1</sub> [ daa sá ]<sub>2</sub> [IP t<sub>1</sub> yéi uwajée [ t<sub>2</sub> du jee yéi teeyí ] ] ] ?  
who Q what Q they.think their hand.at it.is.there  
*Who thinks they have what?*
- b. [CP [ Aa sá ]<sub>1</sub> [ daa sá ]<sub>2</sub> [IP du<sub>1</sub> tuwáa sigóo [ t<sub>2</sub> wutoo.oouwú ] ] ] ?  
who Q what Q their spirit it.is.glad we.buy.it  
*Who wants us to buy what?*

We can also see from the sentences above and those in Section 2.2.4 that the order of wh-words and Q-particles in Tlingit multiple wh-questions is such that each Q-particle immediately follows the wh-word it is associated with. Therefore, if there were separate C heads attracting wh-words and Q-particles in Tlingit, then the left-periphery of a Tlingit multiple wh-question must appear as in (63), where the  $C_{wh}$  heads are those attracting wh-words and the  $C_Q$  heads those attracting Q-particles.

## (63) Structure Required For Multiple Wh-Fronting, Under the Analysis in (61)

$$[CP \ C_{wh1} [CP \ C_{Q1} [CP \ C_{wh2} [CP \ C_{Q2} \dots ] ] ]]$$

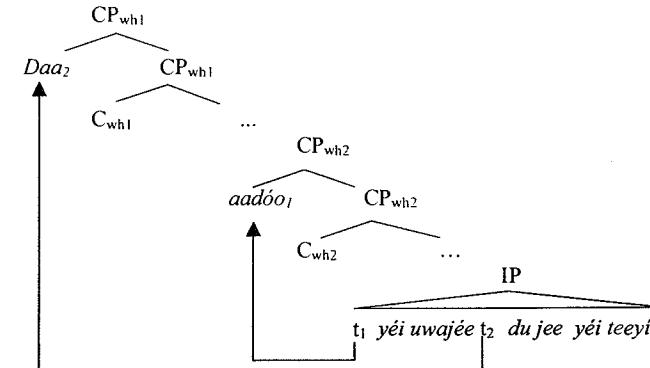
Now, we have already seen that the order of wh-words in a Tlingit multiple wh-question is constrained by Superiority; as shown in (64), wh-subjects *must* precede wh-objects.

## (64) Multiple Wh-Fronting Constrained by Superiority

- a. \* [CP [ Daa sá ]<sub>2</sub> [aadóo sá ]<sub>1</sub> [IP t<sub>1</sub> yéi uwajée [ t<sub>2</sub> du jee yéi teeyí ] ] ] ?  
what Q who Q they.think their hand.at it.is.there
- b. \* [CP [ Daa sá ]<sub>2</sub> [ aa sá ]<sub>1</sub> [IP du<sub>1</sub> tuwáa sigóo [ t<sub>2</sub> wutoo.oouwú ] ] ] ?  
what Q who Q their spirit it.is.glad we.buy.it

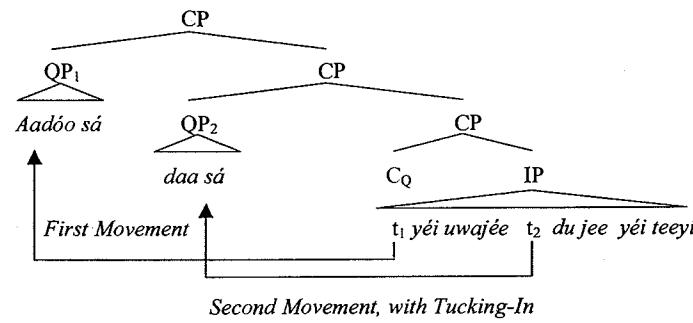
However, if the left periphery of a multiple wh-question had the structure in (63), then the simplest algorithm for probing would incorrectly derive the ill-formed, Superiority-violating orders in (64). The lowest  $C_{wh}$  head would probe first, attracting the highest wh-word in the IP. Only later will the higher  $C_{wh}$  head probe for a wh-word, and by this time, the only ‘visible’ wh-word left in the clause will be the lower wh-word not probed by the first  $C_{wh}$  head. The structure in (65) illustrates.

## (65) Derivation of the Incorrect Orders in (64), via the Analysis in (61)



On the other hand, the analysis proposed in (3) can easily derive the targeted word-order, assuming a theory of ‘Tucking-In’, as in Richards (1997). Under this analysis, a single  $C_Q$  head probes for *both* QPs in the multiple wh-question. Following the standard algorithm for probing, this  $C_Q$  first probes and attracts the highest QP in the clause. Following this attraction, the  $C_Q$  then continues to probe for additional QPs. It subsequently probes and attracts the lower QP, requiring that the QP front into the  $C_Q$  projection. However, because of a constraint of ‘Shortest Move’, that QP has to be merged to as close a position to the  $C_Q$  as possible. Resultingly, the QP ‘Tucks-In’, and moves to a Spec position *lower* than that occupied by the higher wh-word. This derivation is sketched in (66), below.

## (66) Derivation of the Correct Orders in (62), via the Analysis in (3) [with ‘Tucking in’]



Thus, the view that there is a *single* head attracting the entire wh-word+Q complex as a whole is necessitated by the word-order facts in (62) and (64).

Finally, one might yet resist the analysis in (3) by suggesting that the single C head attracting the wh-word+Q complex *also* probes for features of the wh-word. That is, we have not yet ruled out that the single attracting C head bears a syntactic relation with the wh-operator, in addition to the Q-particle which it attracts. In response, however, one might equally well point out that there is yet no evidence that the C head *does* have such a syntactic relation with the wh-operator. After all, the left-peripheral position of the wh-operator could very well be the result of the already demonstrated relationship between the C head and the Q-particle, as proposed in (3). In the absence of evidence that a relation holds between C and the wh-word, it might be argued, it is simplest to assume that it doesn't.

We can, however, press the issue even further, and argue positively that a syntactic relation *doesn't* hold between the C and the wh-operator. First, let us entertain a comparably strong view of syntactic islands, under which they are domains that *no* syntactic relations may cross, not even probing and Agree. Assuming this view of islands, the acceptability of sentence (67) – where the wh-word is contained within an island – indicates that there is no relation holding between it and the matrix C.

#### (67) Wh-Operators in Wh-Questions Can Be Internal to Islands

[ [ Wáa kligéyi ]    xáat ]    sá   i    tuwáa sigóo?  
 how it.is.big.REL fish    Q your spirit it.is.glad  
*How big a fish do you want?*  
*(A fish that is how big do you want?)*

Now, one might attempt to avoid this conclusion by proposing that the wh-word in (67) is accessible to the matrix C head by some means. Perhaps the wh-word is actually adjoined to *xáat* ‘fish’, the head of the relative clause? Perhaps phrases inside islands *are* accessible to probing and Agree? However, any such proposal is immediately subject to the following problem: recall the contrast between (67) and (68).

#### (68) The Q-Particle *Sá* Cannot Be Internal to Islands in Wh-Questions

\* [ [ Waa sá kligéyi ]    xáat ]    i    tuwáa sigóo?  
 how Q it.is.big.REL fish    your spirit it.is.glad

Sentence (68) differs from (67) only in that the Q-particle *sá* is directly adjacent to the wh-word. Therefore, any analysis which holds that the wh-word is syntactically accessible to the matrix C in (67) and (68), must equally well hold that the Q-particle is accessible to the matrix C in these sentences. Therefore, the impossibility of (68) must follow from something other

than the fact that the Q-particle in this sentence is located inside a syntactic island. What this could be, however, remains unclear.<sup>49</sup>

The analysis in (3), however, nicely predicts the contrast between (67) and (68), under the assumption that no syntactic relationship may cross into an island.<sup>50</sup> The impossibility of (68) is a straightforward result of the fact that the Q-particle is inside a relative-clause island, and so is inaccessible to the matrix C. When the Q-particle is located outside the island, as in (67), it is accessible to the matrix C, and the sentence is well-formed. The fact that the wh-word in (67) remains inside the island has no bearing on the well-formedness of the sentence, given that the matrix C bears no syntactic relationship to the wh-operator itself. We find, then, that the contrast between (67) and (68) strongly supports what is, perhaps, the most unusual feature of the analysis in (3): the existence of a relationship between the interrogative C and the Q-particle, but not between the C and the wh-word.<sup>51</sup>

The preceding arguments demonstrate that the analysis of Tlingit wh-questions in (3), which is independently motivated by their similarity to the wh-questions of Sinhala and Japanese, receives strong empirical support. I conclude that it is, in essence, the correct analysis of wh-fronting in Tlingit wh-questions.

### 3 SOME CONSEQUENCES OF THE PROPOSED ANALYSIS

Having presented my case in support of (3) as an analysis of wh-fronting in Tlingit, I will in this section consider a variety of consequences that the analysis holds, particularly those concerning the syntactic and semantic structure of wh-questions across languages.

<sup>49</sup> Note that the contrast between (67) and (68) also effectively refutes the analysis in (61). If the wh-word in (67) is visible to the hypothetical C<sub>wh</sub> head, then the Q-particle in (68) should also be visible to the hypothetical C<sub>Q</sub> head. Thus, the ill-formedness of (68) goes unexplained.

<sup>50</sup> One might object to the notion that no syntactic relationship can cross into an island on the following grounds. Given that wh-words in Tlingit obligatorily co-occur with Q-particles, there is presumably some syntactic relation between them; therefore, the well-formedness of sentence (67) indicates that at least *this* relation may cross into an island. Recall, however, that under the proposals of Section 2.3.5, there is not necessarily any *syntactic* relation between the wh-word and the Q-particle in Tlingit, Sinhala or Japanese, since their obligatory co-occurrence independently follows from the semantics of wh-words and Q-particles.

On the other hand, we might adopt a proposal put forth by Kratzer & Shimoyama (2002), stating that, in languages where the wh-words all share a certain morpho-phonological trait (e.g., English and German), a syntactic Agreement relation *does* hold between the Q-particle and the wh-word. This proposal would correctly predict that in languages like English and German, it is not possible for wh-words to pied-pipe islands. Such pied-piping would, as in Tlingit, require the Q-particle to be located outside an island containing its associated wh-word. Since the two elements would be separated by an island, our ‘strong’ theory of islands would entail that no Agreement relation could hold between them, and the derivation would then presumably crash. This proposal is discussed in slightly more detail in Section 3.2; it receives a complete treatment in Cable (2007).

<sup>51</sup> Similarly, it is the contrast between sentences (38a) and (38b) which most strongly motivates the Hagstrom/Kishimoto analysis of Sinhala wh-questions in (57). In both cases, the fact that *only* the position of the Q-particle affects the well-formedness of the wh-question indicates that *only* the Q-particle bears a relation to the matrix interrogative C.

### 3.1 Consequences Regarding Wh-Fronting and Wh-In-Situ Across Languages

A long-standing question in generative linguistics is what ultimately distinguishes a language like English, which requires wh-words to be fronted in wh-questions, from a language like Japanese, which does not. Although there are countless perspectives on this issue, one commonly held notion is that languages possessing Q-particles do not require wh-words to front (Cheng 1991, *inter alia*). Briefly put, the notion is that, in languages which have them, Q-particles serve the function of marking the sentence as a (wh-)question, the very same function served by wh-fronting in those languages which require it. Thus, languages in possession of Q-particles will (typically) not also have wh-fronting.

Although this continues to be a prevalent view, it has been found that the mere presence of a Q-particle is quite independent of whether a language requires wh-words to front in wh-questions (Bruening 2004). Of course, the presence of the Q-particle *sá* in the wh-fronting language Tlingit further bolsters this conclusion. Nevertheless, the proposed analysis of Tlingit wh-questions in (3) suggests that Q-particles may yet play a role in the determination of whether a language is English-like or Japanese-like.

Let us first note that there are many wh *in-situ* languages whose wh-questions contain no overt Q-particles. For example, although Tibetan yes/no questions contain the yes/no Q-particle *ngas*, no such particle exists in the language's wh-questions.

#### (69) Wh-Questions and Yes/No Questions in Tibetan

- a. Khyodras su mthong byung ngas?  
you.erg who see AUX Q  
*Did you see anyone?*
- b. Khyodras su mthong pa red?  
you.erg who see perf. AUX  
*Who did you see?*

(Cable 2005; p. 22, 23)

Although this is difficult to establish empirically, it is certainly reasonable to think of such languages as possessing phonologically empty Q-particles in their wh-questions (Cheng 1991). Thus, the form of a wh-question in Tibetan would be nearly identical to that in Japanese, the only relevant difference being that the Q-particles in Tibetan are unpronounced.

With this perspective as background, consider now a hypothetical language nearly identical to Tlingit, but whose Q-particles are unpronounced. That is, suppose that all the *sá*'s were purged from the Tlingit examples above. How would such a language appear, either to the linguist or to the child learner? For all intents and purposes, such a language would look

exactly like a wh-fronting language of the kind we are all familiar with.<sup>52</sup> Thus, having accepted the analysis in (3) for Tlingit wh-questions, as well as the possibility of phonologically empty Q-particles, it is most conceptually economical to view wh-questions in the more familiar wh-movement languages as also having the structure in (3).

Following this line of thought, I conclude that in *no* languages – not even English – do wh-words bear a direct syntactic relationship with interrogative C-heads. Rather, in all languages, the interrogative C heads probe and Agree with Q-particles obligatorily accompanying the wh-words. As in Tlingit, the obligatory left-peripheral position of wh-words in the wh-questions of all wh-fronting languages is an epiphenomenal consequence of the obligatory overt fronting of the QP.

Pursuing these ideas further, we find that whether a language requires wh-words to front in wh-questions ultimately depends upon two parameters: (i) whether the projection of Q overtly moves into the projection of C; (ii) whether the Q-particle takes its sister as complement and thus projects the category label of the phrase minimally dominating it and its sister. Under this view, wh-fronting languages are simply those whose Q-particles move overtly and take their sisters as complement. A third, independent property affecting the surface appearance of a language's wh-questions is whether the Q-particles have any phonological content. The chart in (70) below illustrates the typology emerging from this perspective. As (70) indicates, this perspective invites the notion that (i) Tibetan differs from English only in that its Q-particles adjoin to their sister, (ii) Tlingit differs from English only in that its Q-particles have phonological content, (iii) Tlingit differs from Japanese only in that its Q-particles take their sisters as complement, (iv) Japanese differs from Sinhala only in that its Q-particles undergo overt movement into the projection of C.

#### (70) The Emerging Typology

Language	Movement of Q-Particle: Covert / Overt	Q-Particle Takes Sister as Complement: Yes / No	Phonology of Q-Particle: Null / Pronounced
Tibetan	Overt (?)	No (?)	Null
English	Overt	Yes	Null
Tlingit	Overt	Yes	Pronounced
Japanese	Overt	No	Pronounced
Sinhala	Covert	No	Pronounced

<sup>52</sup> Of course, given the existence of sentences like (67) in Tlingit, it is apparent that the class of 'pied-piping' structures are wider in Tlingit than in languages like English, where structurally parallel sentences are not possible. However, as I observe below and in Footnote 50, this difference may be due to an independent morphosyntactic difference between the wh-words of English and those of Tlingit.

As we will see throughout the remainder of this paper, the notion that wh-questions in English also receive the analysis in (3) holds a number of interesting analytic consequences.

### 3.2 Consequences for the Theory of ‘Pied-Piping’ Structures

In a Tlingit wh-question, the particle *sá* always occurs directly to the right of the constituent fronted into the left periphery. Thus, as we see below, the QP is never properly contained within a larger, fronted constituent.

#### (71) Pied-Piping Structures in Tlingit

- a. [QP [ Aadóo yaagú ] sá] ysíteen?  
who boat Q you.saw.it  
*Whose boat did you see?*
- b. \* [ [QP Aadóo sá] yaagú] ysíteen?  
whose Q boat you.saw.it

For this reason, our theory of wh-fronting in Tlingit need never appeal to a notion of ‘pied-piping’, nor any special mechanisms of ‘feature percolation’ used to derive it.<sup>53</sup> Interestingly, this is despite the fact that the *wh-word* of a Tlingit wh-question may be properly contained inside the fronted constituent. Although such configurations have traditionally motivated the special concept of ‘pied-piping’ in the theory of English grammar, they have no interesting or remarkable status under our proposed analysis of Tlingit wh-questions. Since it is the QP – and not the wh-word – which is ‘targeted for movement’ in a Tlingit wh-question, sentences like (71a) do not present structures where ‘more than’ the targeted constituent has moved into the left periphery. Sentences where the wh-word is properly contained within the fronted constituent are simply ones in which the complement of Q properly contains the wh-word, and nothing challenges the wider linguistic generalization that the phrase fronted into the left periphery bears the grammatical features that motivate said fronting.

Similarly, under the proposal that wh-fronting in all languages operates as in (3), we may derive so-called ‘pied-piping’ structures in languages like English without weakening this wider syntactic generalization. Thus, an English sentence like (72a) would receive the structural analysis in (72b).

<sup>53</sup> Of course, our theory still assumes that the features of a head may ‘project’ up to the higher nodes of its phrasal projection. However, as is often pointed out in the literature on pied-piping, this simple operation of featural ‘projection’ cannot be identified with the much more powerful operation of feature ‘percolation’, which crucially transfers the features of a head onto phrasal nodes *outside* the phrasal projection of the head.

#### (72) Pied-Piping Structures in English, Under the Analysis in (3)

- a. Whose father’s cousin’s uncle did you meet at the party?
- b. [QP [ [ [ [ whose ] father’s ] cousin’s ] uncle ] Q] did you meet at the party?

Under the analysis in (72b), the fronted phrase in (72a) is a QP, and it is the features of that QP which are probed for and Agreed with by the interrogative C of the wh-question. Thus, these sentences are not structures in which the fronted phrase is ‘larger’ than the phrase lexically associated with the features motivating the fronting.

This analysis thus contrasts sharply with the ‘classic’ analysis of wh-fronting in (2), under which sentences like (72a) are problematical. Under the analysis in (2), the interrogative C of the wh-question probes for features of the wh-word, and Agreement with a phrase bearing these features results in movement of that phrase into the left periphery. In sentence (72a), however, it appears at first blush that the fronted phrase does *not* bear the features being sought by the interrogative C, since the fronted phrase is not headed by a wh-word. Rather, it appears that the fronted phrase *properly contains* the phrase bearing the features sought by C. Therefore, some augmentation must be made to the basic analysis to permit the derivation of sentences like (72a).

Typically, the derivation of structures like (72a) within the ‘classic’ analysis is accomplished by one of two means: either (i) special mechanisms of ‘feature percolation’, which transfer the features of a head onto higher nodes outside the projection of the head (Webelhuth 1992, Grimshaw 2000), or (ii) a weakening of the theory of movement, allowing that moved phrases needn’t themselves bear the features motivating the movement (Ross 1967, Heck 2004). Both of these views, however, encounter various conceptual problems.

Heck (2004) puts forth numerous arguments against the mechanism of ‘feature percolation’, and any analyses of ‘pied-piping’ structures that appeal to it. One over-arching problem noted by Heck is that the operation of feature percolation cannot be reduced to any other, more widely encountered syntactic operations. Therefore, a theory appealing to feature percolation must admit of an additional, primitive syntactic operation, one which moreover has a number of puzzling properties,<sup>54</sup> and which serves no analytic use outside of pied-piping.

In lieu of ‘feature percolation’, a few authors propose to analyze pied-piping structures by weakening the theory of movement so that it permits moved phrases not to necessarily themselves bear the features ‘motivating’ the movement (Ross 1967, Heck 2004).<sup>55</sup> Thus, under such an analysis, the sentence in (72a) is permissible because it satisfies the (weak)

<sup>54</sup> For example, Heck (2004) notes that feature-percolation violates certain otherwise general conditions on movement (Heck 2004; p. 102).

<sup>55</sup> To be precise, Heck (2004) proposes a hybrid theory, where the labor of deriving pied-piping structures is divided between a limited mechanism of feature percolation (identified as ‘feature movement’, in sense of Chomsky (1995)) and a limited degree of ‘non-locality’ between the moved phrase and the feature inside it promoting the movement. Such a theory is able to avoid many of the problems faced by theories which appeal to only one of these two general forms of analysis.

condition that the moved phrase contain the Goal somewhere inside it. However, a pervasive problem for this form of explanation is the potential for over-generation. That is, it is not generally the case that *any* phrase containing a wh-word may be fronted in an English wh-question, as the ill-formedness of sentence (73b) illustrates.

### (73) Finite CPs Cannot be Pied-Piped in English

- a. [ Which man ]<sub>i</sub> does Mary believe that Dave likes  $t_i$  ?
- b. \* [ that Dave likes which man ]<sub>i</sub> does Mary believe  $t_i$  ?

If appeal is made to feature-percolation, then the observed limits on pied-piping may be encoded into the percolation mechanism itself, by placing limits on ‘how far’ feature-percolation may carry a feature from its lexically associated head. However, without this sort of mechanism, it is difficult to identify the source of anomaly in sentences like (73b), especially since sentences like (73a) establish that such embedded wh-words are in principle accessible to the interrogative C head.

However, if one adopts the QP-based analysis in (3), the problems of both these sorts of analyses may be avoided. As already mentioned, no appeal need be made to special mechanisms of feature percolation placing the targeted features of the wh-words on nodes outside their projection. As regards the observable limits on pied-piping, a number of interesting approaches are possible within the boundaries of the QP-based analysis. For example, I will argue in Section 4 that independently visible constraints on the position of the Q-particle derive the inability for certain phrases to be ‘pied-piped’. Moreover, certain other conditions on pied-piping may be derived in a manner similar to what is found in percolation-based analyses. Although space precludes a full discussion here, I will sketch one approach that has proven to be productive. As noted in Footnote 50, Kratzer & Shimoyama (2002) observe that wh-words in English, German and many other wh-fronting languages all share a particular morpho-phonological characteristic (e.g., /w-/ in English, /v-/ in German), and that such a shared morpho-phonological characteristic is not found in the wh-words of Japanese. Kratzer & Shimoyama (2002) propose that in languages where the wh-words all share a morpho-phonological characteristic, there is a morpho-syntactic Agreement relation holding between the wh-word and the c-commanding Q-particle. Accepting this proposal, one can capture constraints on ‘pied-piping’ in languages like English via constraints on the Agreement relation holding between the Q-particle and the wh-word. For example, given our earlier assumption that Agreement cannot cross into syntactic islands, we easily derive the fact that wh-words cannot pied-pipe islands in English.<sup>56</sup> I refer the reader to Cable (2007) for a broader discussion and richer array of results.

<sup>56</sup> It is of course essential to note here that wh-words in Tlingit do not share any morpho-phonological characteristic, and so may be viewed as *not* bearing an Agreement relation with the Q-particle.

### 3.3 Consequences Regarding the Quantificational Structure of Wh-Questions

Under the semantics proposed in Section 2.3.5, a wh-word bears no inherent quantificational force. Rather, the semantic contribution of the wh-word is a set of alternatives, which eventually serve as argument to the c-commanding Q-particle. Moreover, the Q-particles themselves likewise have no inherent quantificational force. Rather, they are analyzed variables bound by higher operators, akin to the well-known analysis of indefinites in theories like DRT.

However, the notion that wh-words in wh-questions don’t bear quantificational force seems to be a minority view.<sup>57</sup> Indeed, since the seminal work of Karttunen (1977), the prevailing view has been that wh-words are quantifiers bearing existential force, as in (74a). Under this view, the existential force of the wh-word is ultimately contributed to the property description constituting the semantic value of the wh-question; this contribution is highlighted in (74b).

### (74) The View that Wh-Words are Existential Quantifiers

- a. [[ what ]] =  $\lambda P. \exists x [ \text{thing}(x) \& P(x) ]$
- b. [[ what did you eat ]] =  $\lambda p. \exists x [ \text{thing}(x) \& p = (\lambda w. \text{you eat } x \text{ in } w) ]$

A benefit of this analysis is that the fronting of the wh-word in a wh-question has a clear semantic motivation. Since the semantics of a wh-question require there to be an existential operator taking scope above the ‘propositional nucleus’, and since the wh-word contributes that existential operator, it follows that the wh-word in a wh-question must move to fix its scope outside the propositional nucleus. If the wh-word did not move, then the sentence would not be computed to have the targeted matrix wh-question reading.

Although this analysis still looms large in the popular consciousness of linguists, subsequent study has weakened the notion that wh-words are existential quantifiers. This notion was first challenged in Pesetsky (1987). Pesetsky notes that certain wh-words – those which are D-linked and *in situ* – have, across a variety of languages, properties which suggest that they needn’t ever undergo wh-fronting in questions.<sup>58</sup> Pesetsky observes that the differential behavior of D-linked wh-words could be due to their not bearing inherent quantificational force. Pesetsky proposes that such wh-words are instead simply variables bound by the c-commanding interrogative C head. A semantics for such bound *in-situ* wh-

<sup>57</sup> Although currently a minority view, it can be found in the earlier work of Hamblin (1973), and something like it is found in the syntactic work of Baker (1970).

<sup>58</sup> The most well-known and well-studied of these properties is, of course, the fact that such wh-words do not induce Superiority Effects. Thus, the ill-formed sentence in (i) contrasts with that in (ii), where the *in-situ* wh-word is D-linked.

(i) \* What did who read?  
(ii) Which book did which boy read?

words was subsequently developed by Reinhart (1992, 1997). In this work, Reinhart proposes that the existential force of a wh-question containing non-quantificational wh-words is contributed by the semantics of the interrogative C-head. Thus, under the analysis of Reinhart (1992, 1997), the existential force of a wh-question may originate, not in the wh-word itself, but in higher operators binding that wh-word. For purposes of discussion, I refer to such analyses as ‘existential-Q’ analyses.

Interestingly, this existential-Q semantics would eventually be found to benefit the analysis of *all* wh-questions in wh-*in-situ* languages like Japanese. The work of Hagstrom (1998), Shimoyama (2001) and Beck (2006), demonstrates that certain phenomena in wh-*in-situ* languages receive elegant analyses if an existential-Q analysis is applied to *all* wh-questions. Furthermore, it is shown in Shimoyama (2001) and Beck (2006) that this existential-Q semantics alone derives many of the data which previous authors had argued to demonstrate the existence of covert wh-fronting in these languages. Thus, under the analyses of Hagstrom (1998), Shimoyama (2001) and Beck (2006), it is possible to maintain that no *in-situ* wh-word bears existential force, and no *in-situ* wh-word undergoes covert movement for the purposes of scope. For this reason, the analyses of Hagstrom (1998), Shimoyama (2001) and Beck (2006) raise anew the question of whether wh-words *ever* have inherent quantificational force, even those wh-words that undergo wh-fronting. The analysis proposed here takes up a negative answer to this question. Under the proposed semantics, even in wh-fronting languages, no wh-word bears inherent existential force; in all cases, the existential force is provided by the interrogative C.

Interestingly, in Cable (2007), I demonstrate that this view regarding the quantificational structure of wh-questions has a particularly advantageous consequence: reconstruction is not needed for the proper interpretation of wh-questions with ‘pied-piping’. In his well-known critique of Nishigauchi (1990), von Stechow (1996) effectively demonstrates that within a system where wh-words have quantificational force, one must reconstruct any material pied-piped by the wh-word in order to properly interpret a wh-question. In the system proposed here, however, wh-words do *not* bear quantificational force, and so their movement is semantically vacuous. Thus, in this system, there is no semantic difference between a structure with ‘pied-piping’ at LF and one with reconstruction of pied-piped material; both structures are assigned the same, correct semantic interpretation. For this reason, syntactic reconstruction is not required for the system proposed here to correctly interpret wh-questions with pied-piping. I refer the reader to Cable (2007) for an extensive discussion of this point.

Since the notion that even fronted wh-words lack inherent quantificational force seems to have advantageous consequences, let us ask whether there *is* any evidence at all that fronted wh-words do (sometimes) bear an inherent quantificational force that *in-situ* wh-words (sometimes) lack. One of the strongest arguments in favor of the view that wh-words (sometimes) carry existential force comes from the differences between D-linked and non-D-

linked wh-words. The simplest theory of the differential behavior of D-linked and non-D-linked wh-words is that of Pesetsky (1987), described above. By attributing an inherent existential force to non-D-linked wh-words, and by withholding it from D-linked wh-words, one immediately derives the fact that the former must undergo covert movement while the latter needn’t. However, if one assumes that *no* wh-words have inherent quantificational force, the grammatical differences between D-linked and non-D-linked wh-words cannot be captured in this manner. Thus, the fact that D-linked wh-words needn’t undergo covert wh-movement must be derived from some other property, and it is not immediately apparent what this could be.<sup>59</sup>

Although I have nothing to offer in its place, the notion that a difference in quantificational force underlies the special properties of D-linked wh-words faces difficulties of its own. The least important of these is the fact that it is inconsistent with the view that syntactic movement is ultimately driven by feature-checking and erasure (Chomsky 1995). Under such currently popular models, movement of a phrase is not a ‘free option’, and only occurs as a result of a featural relationship between units in the structure. Thus, if one adopts such a syntactic model, the differential behavior of D-linked and non-D-linked wh-words would have to be encoded via some featural difference between them, a method that is in principle also available under our proposed syntactic analysis.

A more important issue for the notion that *only* D-linked wh-words lack quantificational force is that it is not clear what this special property of D-linked wh-words would itself follow from.<sup>60</sup> After all, as the analyses of Hagstrom (1998), Shimoyama (2001) and Beck (2006) demonstrate, nothing in the semantics of wh-questions requires that *non-D-linked* wh-words *must* have inherent quantificational force. Similarly, it isn’t obvious why D-linked wh-words *must* lack quantificational force. Although the oft-noted fact that D-linked wh-words contain a referential/anaphoric component is suggestive, the notion that this referential/anaphoric component precludes inherent quantificational force has unfortunately never been elaborated in detail. I therefore conclude that, although the ‘quantificational analysis’ of Pesetsky (1987) is currently the best analysis of the differential behavior of D-

<sup>59</sup> Note that this is also a problem for the analyses of Hagstrom (1998), Shimoyama (2001) and Beck (2006). Nishigauchi (1986) and Pesetsky (1987) argue that various differences between D-linked and non-D-linked wh-words in Japanese also indicate that the latter undergo covert movement while the former do not, even in wh-*in-situ* languages like Japanese.

<sup>60</sup> Another issue is that it weakens the ‘classical’ view that wh-words front in English because they are existential quantifiers. As noted by Pesetsky (1987), in non-multiple English wh-questions, even D-linked wh-words must front; they cannot remain *in-situ*.

(i) a. Which of the boys did you see?  
b. \* You saw which of the boys?

Therefore, under the view that D-linked wh-words lack quantificational force, some property other than the existential force of the wh-word must underlie the (overt) fronting of wh-words in English. Thus, one of the major analytic benefits of the ‘classic’ account in (74) is diminished.

linked wh-words, it is plausible that an equally successful alternative could be developed within the limits set by the semantics of wh-questions proposed here.<sup>61</sup>

We find, then, that the differential behavior of *in-situ* D-linked wh-words needn't indicate that some wh-words possess inherent quantificational force.

#### 4 THE NATURE OF CERTAIN ILLICIT EXTRACTIONS

In the previous section, we saw that the analysis of wh-fronting proposed in (3) holds a variety of consequences for the typological theory of wh-question formation, the nature of ‘ pied-piping’ structures, the quantificational structure of wh-questions, and the analysis of LF/Focus-Intervention Effects. In this final section, we will see that it also holds surprising consequences for the theory of movement itself. In brief, an examination of the syntax of Q-particles in Tlingit invites an interesting reconception of what underlies the ill-formedness of certain kinds of extraction.

First, let us observe that there are some further, yet unstated conditions governing the placement of *sá* in a Tlingit sentence. As the following sentences illustrate, the particle *sá* cannot intervene between a post-position and its complement (75), between a possessor and the possessed NP (76), or between a determiner and its NP complement (77).

##### (75) No Q Between a Post-Position and Its Complement

- |  |   |
|--|---|
| a. <i>Goodéi sá yigoot?</i><br>where.to Q you.went<br><i>Where did you go?</i> | c. <i>Aadóo teen sá yigoot?</i><br>who with Q you.went<br><i>Who did you go with?</i> |
| b. * <i>Goo sádéi yigoot?</i><br>where Q.to you.went                           | d. * <i>Aadóo sá teen yigoot?</i><br>who Q with you.went                              |

##### (76) No Q Between a Possessor and a the Possessed NP

- |   |
|---|
| a. <i>Aadóo jeet sá iyatee?</i><br>who hand.to Q you.brought.it<br><i>Who did you give it to? (= Whose hand did you bring it to?)</i> |
|---|

<sup>61</sup> One possible analysis, which Cable (2007) works out in detail, is that D-linked wh-words needn't be paired with Q-particles. If this were so, then the analysis in (3) would predict such that wh-words needn't undergo any wh-fronting. As shown in Cable (2007), it also correctly predicts that non-fronting D-linked wh-words are the only ones in English to be widely subject to LF/Focus-Intervention Effects.

- |   |  |
|---|--|
| b. * <i>Aadóo sá jeet iyatee?</i><br>who Q hand.to you.brought.it     | c. <i>Aadóo xanx' sáyá yéi iyatee?</i><br>who area.at Q.foc-part you.are.there<br><i>Who are you living with? (= Whose area are you staying at?)</i> |
| d. * <i>Aadóo sá xanx' yéi iyatee?</i><br>who Q area.at you.are.there | e. <i>Aadóo yaagú sá ysiteen?</i><br>who boat Q you.saw.it<br><i>Whose boat did you see?</i>   |
| f. * <i>Aadóo sá yaagú ysiteen?</i><br>who Q boat you.saw.it          | g. <i>Aadóo x'asheeyí sá iya.aax?</i><br>who song Q you.heard.it<br><i>Whose song did you hear?</i>  |
| h. * <i>Aadóo sá x'asheeyí iya.aax?</i><br>who Q song you.heard.it    |  |

##### (77) No Q Between a D and its NP Complement

- |  |   |
|--|---|
| a. <i>Daakw keitl sá ashaa?</i><br>which dog Q it.barks<br><i>Which dog is barking?</i>                        | c. <i>X'oon keitl sá ysiteen?</i><br>how.many dog Q you.saw.them<br><i>How many dogs did you see?</i>   |
| b. * <i>Daakw sá keitl ashaa?</i><br>which Q dog it.barks  | d. * <i>X'oon sá keitl ysiteen?</i><br>how.many Q dog you.saw.them                                      |
| e. <i>X'oon gaaw sáwé?</i><br>how.many hour Q.foc-part<br><i>What time is it?<br/>(=How many hours is it?)</i> | g. <i>Daat gaaw sá ikgwahaa?</i><br>what hour Q you.will.arrive<br><i>What time will you get there?</i> |
| f. * <i>X'oon sáwé gaaw?</i><br>how.many Q.foc-part hour   | h. * <i>Daa sá gaaw ikgwahaa?</i><br>what Q hour you.wil.arrive   |

Of course, the reader will have probably noticed that all the sentences above are wh-questions. Therefore, these restrictions might not seem very surprising, particularly given our analysis in (3). Under that analysis, a Tlingit wh-question requires that the QP be fronted into the left-periphery. Thus, the ill-formed sentences above all involve either extraction of the complement of PP (75b, d), extraction of the specifier of DP (76b, d, f, h), or extraction of the

D head of the DP (77b, d, f, h). Such extractions, however, are ill-formed in many languages of the world. That is, patterns of obligatory pied-piping across a variety of languages suggest that extractions of the kind seen in the ill-formed sentences above are cross-linguistically ‘marked’ (Ross 1967, Abels 2003, Heck 2004), and the ill-formedness of the sentences above would simply follow from the markedness of those extractions.

Interestingly, however, in the case of Tlingit, this ‘common sense’ analysis proves to be too weak. As we will see, the generalizations governing the placement of Q in (75) – (77) hold even when the QP never moves. First, let us note that these generalizations still hold when the wh-word/QP functions as an indefinite in a declarative clause; the sentences in (78) – (80) illustrate.

#### (78) No Q Between a Post-Position and Its Complement

- |  |  |
|--|--|
| a. Tlélí <b>goodéi</b> sá <u>xwagoot</u> .<br>not where.to Q I.went<br><i>I didn't go anywhere</i> | c. Tlélí <b>aadóo</b> teen sá <u>xwagoot</u> .<br>not who with Q I.went<br><i>I didn't go with anyone.</i> |
| b. * Tlélí <b>goo</b> sádéi <u>xwagoot</u> .<br>not where Q.to I.went                              | d. * Tlélí <b>aadóo</b> sá teen <u>xwagoot</u> .<br>not who Q with I.went                                  |

#### (79) No Q Between a Possessor and a the Possessed NP

- |  |   |
|--|---|
| a. Tlélí <b>aadóo</b> jeet sá <u>xwatí</u> .<br>not who hand.to Q I.brought.it<br><i>I didn't give it to anyone.</i>     | c. Tlélí <b>aadóo</b> <u>xanx'</u> sá yéi <u>xat utí</u> .<br>not who area.at Q I.am.there<br><i>I am not living with anyone.</i> |
| b. * Tlélí <b>aadóo</b> sá jeet <u>xwatí</u> .<br>not who Q hand.to I.brought.it   | d. * Tlélí <b>aadóo</b> sá <u>xanx'</u> yéi <u>xat utí</u> .<br>not who Q area.at I.am.there                                      |
| e. Tlélí <b>aadóo</b> <u>yaagú</u> sá <u>xwsateen</u> .<br>not who boat Q I.saw.it<br><i>I didn't see anyone's boat.</i> | g. Tlélí <b>aadóo</b> <u>x'asheeyí</u> sá <u>xwa.aax</u> .<br>not who song Q I.heard.it<br><i>I didn't hear anyone's song.</i>    |

- |   |  |
|---|--|
| f. * Tlélí <b>aadóo</b> sá <u>yaagú xwsateen</u> .<br>not who Q boat I.saw.it | h. * Tlélí <b>aadóo</b> sá <u>x'asheeyí xwa.aax</u> .<br>not who Q song I.heard.it |
|---|--|

#### (80) No Q Between a D and its NP Complement

- |  |   |
|--|---|
| a. Tlélí <b>daakw</b> keitl sá ushá.<br>not which dog Q it.barks<br><i>None of the dogs are barking.</i> | c. Yéi uwatee x'oon tákaw sá.<br>he.lived.there how.many winter Q<br><i>He lived there for a number of years.</i> |
| b. * Tlélí <b>daakw</b> sá keitl ushá.<br>not which Q dog it.barks                                       | d. * Yéi uwatee x'oon sá tákaw.<br>he.lived.there how.many Q winter   |

Now, let us momentarily entertain the notion that the impossibility of the ill-formed sentences above is due to the impossibility of extraction from the position occupied by the QP; for the purposes of discussion, I will refer to this as ‘the extraction analysis’. The extraction analysis would, of course, imply that the formation of the sentences in (78) – (80) requires that the QP be extracted from its base position at some stage of the derivation. The fact that wh-indefinites in Tlingit can remain post-verbal, as in (80c), indicates that the hypothesized extraction does not occur overtly. Therefore, this analysis would require that such wh-word/QPs undergo covert movement of some kind. We must now ask, then, what kind of covert movement could be responsible for the facts in (78) – (80). The positions in question (SpecDP, CompPP) imply that such movement has nothing to do with Case assignment or checking. The declarative force of the sentences in (78) – (80) implies that it is not motivated by the need to check a Q-feature in the matrix C. The only remaining alternative is that it is some kind of QR, a plausible prospect given that these wh-word/QPs might appear to contribute existential force.

I conclude, then, that the extraction analysis must assume that wh-indefinites in Tlingit undergo obligatory QR. Such obligatory QR, however, would imply that wh-indefinites in Tlingit cannot obtain their scope *in-situ*. After all, if wh-indefinites in Tlingit could obtain their scope *in-situ*, there would be no reason for QR to obligatorily target all such indefinites (Reinhart 1997). Therefore, the extraction analysis predicts that wh-indefinites in Tlingit always move to their scope positions via QR. Given the assumption that QR is sensitive to (adjunct) islands (Chomsky 1975, Reinhart 1997), we therefore predict that wh-indefinites should – like strong quantifiers – be unable to scope out of (adjunct) islands.

However, this prediction is incorrect.<sup>62</sup> As discourses like the following demonstrate, it is possible for wh-indefinites in Tlingit to scope out of (adjunct) islands.

<sup>62</sup> The argument that follows is mirrored on those found in Ruyis (1992, 1995) and Matthewson (1999).

## (81) A Tlingit Wh-Indefinite Scoping Out of The Antecedent of a Conditional

- a. Ax xooní áwé      Dave.  
my friend foc-part Dave  
*Dave is my friend.*
- b. Shayadihéini      du káani tlél du tuwáa ushgú.  
they.are.many.REL his in-laws not their spirit it.is.glad  
*Many of his in-laws don't like him.*
- c. Du káanich      ku.aa wusixán.  
his brother-in-law.erg though he.loves.him  
*His brother-in-law, though, loves him.*
- d. Yéi ayawsikaa, "Dáanaa káa dulxéis"      át yaxwadlaagi, hit i jeeyís  
he.told.him money on one.gambles thing I.win.it house your hand.for  
kukwa.oo.  
I.will.buy.it  
*He said to him (Dave), "If I ever win the lottery, I will buy you a house."*
- e. [ [ Daakw aa      du káanich sá ] yawudlaagi ], hit ayakgwadlaak.  
which of.them his in-laws.erg Q they.win.it house he.will.get.it  
*So, if a certain in-law of Dave's wins the lottery, he'll get a house.*

The Tlingit discourse in (81) was constructed with the help of a native speaker, who recognized the discourse as a sensible story, and an accurate translation of the English original.<sup>63</sup> Note that if the wh-indefinite in (81) could only have narrow scope inside the antecedent of the conditional, then the discourse in (81) neither would be internally consistent nor would be an accurate translation of the original English story. Rather, the consistency and faithfulness of (81) require that the existential force of the wh-indefinite be located *outside* the antecedent of the conditional.

Sentences like that in (81) therefore demonstrate that there is some mechanism in Tlingit that allows a wh-indefinite to be interpreted in a position distinct from the position of

<sup>63</sup> Keri Edwards (p.c.) reports that the speaker she consulted finds the translation of (81e) incorrect, and can only interpret the sentence to mean "if *any* of Dave's in-laws win the lottery...". Thus, for this speaker, it may indeed be that wh-indefinites cannot take scope outside of adjunct islands. However, it may also be that this speaker shares the tendency, noted earlier under Footnote 15, to interpret wh-indefinites as NPIs in those environments that would allow such an interpretation, such as the antecedent of a conditional. Although the strong preference to interpret wh-indefinites as NPIs or free choice items should not be taken lightly, and does cry out for its own grammatical account, Cable (2007) shows more extensively that such interpretations are (at least for some speakers) not obligatory.

its associated existential force. The existence of such mechanisms, however, entails that the scope of a wh-indefinite in Tlingit needn't be fixed by movement of that indefinite. Therefore, because wh-indefinites in Tlingit *can* obtain their scope *in-situ*, there is no reason for QR to obligatorily target all such indefinites. I conclude that the hypothetical obligatory covert movement required by the extraction analysis cannot, in the end, be identified as QR.

Since we have eliminated all plausible candidates for the movement hypothesized by the extraction analysis, we find that that analysis must appeal to a yet-unknown form of covert movement. It is therefore most reasonable to conclude that movement of the QP simply isn't what's responsible for the impossibility of the ill-formed sentences in (78) – (80). This conclusion is bolstered by two independent facts. The first is that extraction from within the specifier of DP and the complement of PP is possible in Tlingit, and so the impossibility of the ill-formed sentences in (75) – (80) cannot be because the positions in question are islands for extraction.<sup>64</sup> Unfortunately, space precludes the demonstration of this fact here, as it requires a lengthy side-discussion regarding pronominal resumption in Tlingit; I refer the reader to Cable (2007) for the details.<sup>65</sup> The second fact is that there is not a general constraint in Tlingit against *sá* appearing within an island; compare the sentence in (82) to those in (78) – (80).

## (82) Q-Particle Contained Within a Relative Clause Island

- Wáa sá yatee [ wé [ i goodéi sá woogoodi ] káa ]?  
how Q he.is that not where.to Q he.went.REL man  
*How is the man who didn't go anywhere?*

<sup>64</sup> Abels (2003) also demonstrates that extraction from within CompPP is possible in various other languages that disallow P-stranding. He similarly concludes that the impossibility of P-stranding across languages cannot be due to a condition against *all* extractions from PP, but instead reflects the impossibility of stranding the P-head specifically. I agree with this general conclusion, and will argue below that this condition against P-stranding is due to independent constraints on the placement of Q-particles.

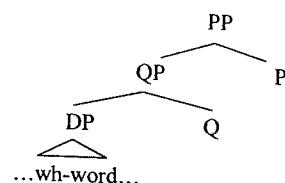
Abels (2003), however, derives this constraint against P-stranding from the assumption that adpositions are phase heads, given a surrounding theory wherein one predicts that phase heads cannot be stranded. It is unclear, however, whether there is a general constraint against phase heads being stranded. Although Abels (2003) notes that an inability to strand C would predict the inability for IP to be extracted, he also notes that IPs are generally 'immovable' in ways not necessarily predicted by the 'unstrandinability' of C alone. Furthermore, a certain kind of 'dummy *do*' in English may be a stranded 'little-v' (Cable 2004).

<sup>65</sup> In brief, 'extraction' of a possessor or a complement to P is possible in Tlingit so long as a resumptive pronoun appears in SpecDP or CompP, respectively. Examples of this can be found in sentences (32c) and (62b), above. In such structures, the relationship between the left-peripheral DP and the resumptive pronoun is found to be island-sensitive. This motivates an analysis similar to that proposed by Aoun *et al.* (2001) for such structures in Lebanese Arabic. Under this analysis, the left-peripheral DP is initially merged as an adjunct to the resumptive pronoun, and subsequently undergoes movement into the left periphery. Happily, the postulated base structures – where the full DP is locally adjoined to the pronominal – are independently witnessable as surface forms in Tlingit. Importantly, since the base position of the left-peripheral DP is internal to SpecDP or CompPP, it follows that extraction from these positions is possible in Tlingit.

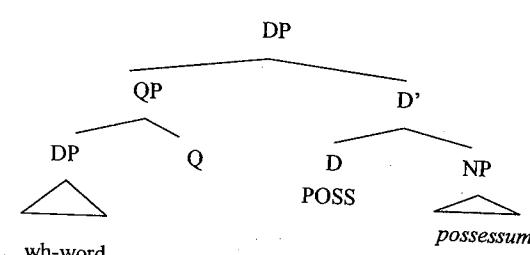
It therefore seems that the impossibility of sentences (78) – (80) is not at all due to the QP being located within an extraction island. What, then, is responsible for the ill-formedness of these sentences?

First, let us recall that, due to the special properties of wh-fronting in Tlingit, we have concluded that Q-particles in Tlingit take their sisters as complements, and so project the category of the phrase minimally dominating them and their sisters. It therefore follows from this analysis that the ill-formed sentences in (78) – (80) contain structures akin to the following.

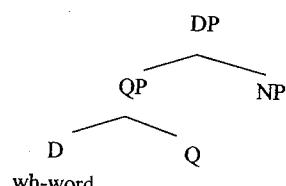
(83) Structures Where Q Intervenes Between P and its Complement



(84) Structures Where Q Intervenes Between Possessor and Possessed NP



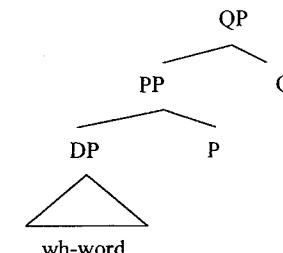
(85) Structures Where Q Intervenes Between D and NP Complement



Interestingly, all the structures in (83) – (85) share the following property: in each, a QP intervenes between a functional head and a phrase selected by that functional head.<sup>66</sup> In structure (83), the QP intervenes between the post-position and the DP selected by the post-position. In (84), the QP intervenes between the possessive D head and the possessor NP selected by the possessive D. In (85), the QP intervenes between the D and the NP it selects.

Furthermore, let us note that *none* of the well-formed sentences in (78) – (80) has this special property. In the well-formed sentences of (78), the Q-particle occurs to the right of the post-position, and so the QP it projects does not intervene between the P and its DP complement.

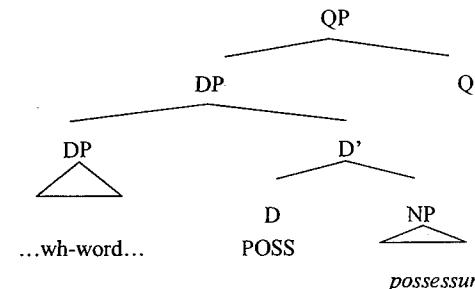
(86) Structures Where Q Appears to the Right of the Post-Position



Moreover, the PP complement of Q in these sentences is an adjunct, and so is not selected by any higher functional heads.

In the well-formed sentences of (79), the Q-particle occurs to the right of the possessed NP, and so its projection does not intervene between the D and its specifier.

(87) Structures Where Q Appears to the Right of the Possessed NP

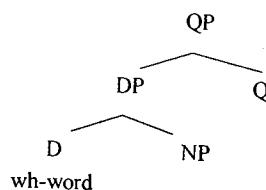


<sup>66</sup> Note that the structure in (85) also has another striking property: the DP projection appears to be exocentric, in as much as it does not immediately dominate a D head. Thus, whatever other problems the structure in (85) might share with those in (83) and (84), the impossibility of exocentric structures would alone rule it out.

Moreover, the complement of Q in these sentences is either an adjunct (79c), or is selected by a lexical head. Thus, the QPs in these sentences do not interrupt the selectional relationships of any functional heads.

Finally, in the well-formed sentences of (80), the Q-particle occurs to the right of the NP complement of D, and so its projection likewise does not intervene between D and NP.

#### (88) Structures Where Q Appears to the Right of NP Complement of D



Here again, in these sentences the complement of Q is either an adjunct (80c) or is selected by a lexical head. Thus, the QPs in these sentences do not interrupt the selectional relationships of any functional heads.

On the basis of these observations, let us propose the following as a universal grammatical constraint.<sup>67</sup>

#### (89) The QP Intervention Condition

A QP cannot intervene between a functional head and a phrase selected by that functional head.

As we have already seen, this condition would be sufficient to derive the data in (78) – (80). It also differs from the extraction analysis in that it does not rely upon an otherwise unmotivated form of obligatory covert movement. However, in order to establish that it is actually preferable to the extraction analysis, we must demonstrate that the condition in (89) makes accurate predictions beyond just the facts given in (78) – (80). The remainder of this section is given to showing that it does.

First, let us observe that the condition in (89) derives the fact, noted in Section 2.3.4, that Tlingit *sá* cannot appear to the right of a matrix verb.

<sup>67</sup> Although introduced here as a special stipulation, Cable (2007) describes how the condition in (89) could follow from a particular theory of selection, where so-called “c-selection” is a property only of functional heads.

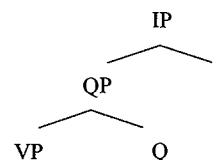
#### (90) Tlingit *Sá* Cannot Occur to the Right of Matrix Predicate

- a. *Daa sá iyatéen?*  
what Q you.can.see.it  
*What can you see?*
- b. \* *Daa iyatéen sá?*  
what you.can.see.it Q

If *sá* were to occur to the right of the matrix verb, then there are two logical possibilities concerning its exact position in the clause, neither of which is consistent with the stated properties of Q in Tlingit. First, it could be the case that *sá* takes the entire matrix CP (ForceP) as complement. However, our semantics in Section 3.2.5 would predict that such a structure could not be interpreted as a wh-question, as there would be no choice-function variable in the scope of the interrogative Force head. Furthermore, if we assume that such a position is outside the domain of existential closure, we would similarly derive the inability for such structures to be interpreted as wh-indefinites. Therefore, placement of *sá* above the highest functional projection in the matrix clause would lead to semantic uninterpretability.

The second possibility regarding the position of *sá* is that it takes as complement either the VP or one of the higher projections along the ‘functional spine’ of the clause. In either case, however, the condition in (89) would be violated. If *sá* were to take VP as complement, then the QP it projects would intervene between VP and the Infl.<sup>68</sup> This is shown below.

#### (91) Tlingit *Sá* Taking Matrix VP as Complement



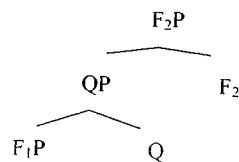
However, Infl is a functional head, and selects for the VP complement of Q. Therefore, the configuration in (91) violates the condition in (89). Similarly, if Q were to take as complement

<sup>68</sup> The exact identity of the first projection dominating VP – whether it is IP or TP – is irrelevant for the purposes of this argument, so long as that projection is a thoroughly functional one. In this context, it should be noted that the analysis proposed here cannot adopt the hypothesis that subjects are introduced by a separate head distinct from V. If such heads were lexical categories, then nothing would prevent Tlingit *sá* from appearing to the right of a matrix verb. On the other hand, if such heads were functional categories, then our theory would predict that subjects could not be dominated by Q in Tlingit and other wh-fronting languages, contrary to fact.

An anonymous reviewer correctly notes that, by this logic, our account might also be incompatible with a ‘Larsonian Shell’ analysis of ditransitive verbs.

any higher projection  $F_1$  along the ‘functional spine’ of the clause, the QP it projects would intervene between  $F_1 P$  and the higher functional projection  $F_2 P$  above it.

(92) Tlingit *sá* Taking as Complement Projections in the Matrix ‘Functional Spine’



Again, though,  $F_2$  is a functional head, and selects for the  $F_1 P$  complement of  $Q$ . Therefore, the configuration in (92) violates the condition in (89).

We have thus ruled out the ability for Tlingit *sá* to appear anywhere to the right of the matrix verb.<sup>69</sup> Nevertheless, our theory does correctly predict that *sá* can appear to the right of a subordinate verb, as we saw earlier under (45). As long as the subordinate CP is either an adjunct or is selected by a lexical head, the condition in (89) will not be violated if a QP takes a subordinate CP as complement. Moreover, since such  $Q$ s occupy a position internal to the matrix ForceP, our analysis predicts that sentences like (45) are interpretable, both as wh-questions and as wh-indefinites.

It was just observed that the condition in (89) predicts that in wh-fronting languages, Q-particles cannot take VPs or any higher functional projections as their sisters. Given the theory of ‘pied-piping’ proposed in Section 3, this condition therefore derives the oft-noted fact that neither VPs nor any of their functional projections may be pied-piped (Heck 2004).

(93) No Pied-Piping of Matrix Predicates

- a. What did Dave eat?
- b. \*[<sub>VP</sub> Eat what] did Dave?

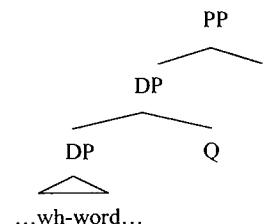
According to the proposal in Section 3.2, any ‘pied-piped’ constituent is simply a complement of  $Q$ . Therefore, a pied-piped VP would have to be complement to  $Q$ . However, as already

<sup>69</sup> Of course, the reader may recall that Sinhala *da* shares this property with Tlingit *sá*. Interestingly, for reasons that will be clear in a moment, the inability for Sinhala *da* to occur to the right of a matrix verb is not, under our current proposals, consistent with the view that Q-particles in Sinhala are adjoined to their sisters as in Japanese. Rather, it can only be true if Sinhala is like Tlingit/English in that its Q-particles take their sisters as complements. Under this view, Sinhala differs from Tlingit/English only in that its QPs move covertly, and is otherwise identical to Tlingit/English at LF. Independent evidence for this reconception of Sinhala wh-questions is the fact that *da* is also subject to the constraints witnessed in (75) – (77). As reported in Kishimoto (2005; p. 13), Sinhala *da* cannot in wh-questions intervene between post-positions and their DP complements, possessors and possessed NPs, or Ds and their NP complements. As we will see below, this property is only expected if Sinhala Q-particles take their sisters as complements, as in Tlingit/English, rather than adjoin to them, as in Japanese/Korean.

noted above, a configuration where  $Q$  takes VP as complement would violate the condition in (89), as a QP would intervene between the VP and Infl head it is selected by. It follows that neither VP nor any of its higher functional projections may be ‘pied-piped’ by an internal wh-word.

One final prediction of the condition in (89) concerns the distribution of Q-particles in languages like Japanese, where the Q-particle does not take its sister as complement, but is instead adjoined to it. Since the  $Q$  is adjoined to its sister in these languages, our theory predicts that it will not be subject to the constraints witnessed in (75) – (80). For example, in these languages, it should be possible for a Q-particle to come between an adposition and its DP complement, as such structures would receive the structural analysis below.

(94) Structures Where  $Q$  Appears Between  $P$  and its Complement in Japanese/Korean



As the structure in (94) indicates, in Japanese-like languages, the Q-particle is adjoined to its sister, and so does not project the category of the phrase minimally dominating it and its sister. Therefore, in such languages, an adposition may directly take as its complement the DP it selects for, even when a Q-particle comes between them. Since no projection of  $Q$  intervenes between the  $P$  and the  $DP$  in structures like (94), the condition in (89) is respected, and they are predicted to be well-formed. This prediction is accurate, as the sentences in (95) demonstrate.

(95) Japanese  $Q$  Can Appear Between a Post-Position and Its Complement

- a. Taroo-wa doko-ka-e itta.  
Taro-TOP where-Q-to went  
*Taro went somewhere.*
- b. Taroo-ga [dono tosi]-ka-e ryoko sita-rasii.  
Taro-NOM which city-Q-to travel did-seems  
*Taro seems to have traveled to some city.*

The Japanese sentences above contain wh-indefinites associated with the Q-particle *ka*. As the particle *ka* is not sentence-final when appearing with wh-indefinites, we can test the accuracy of the aforementioned predictions, and we find that it is accurate. In each sentence the Q-particle *ka* appears in between the post-position *e* 'to' and the DP it selects for.

Similar confirmation can be found in the wh-indefinites of Korean. Like those in Japanese, Korean Q-particles must be sentence-final in wh-questions (96a), but can be sentence internal with wh-indefinites (96b).<sup>70</sup>

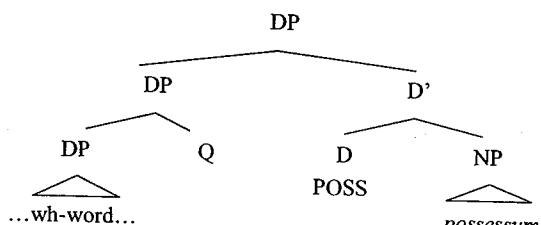
#### (96) Wh-Questions and Wh-Indefinites in Korean

- a. Eti-ey sensayng-nim-i ka-si-pni-kka?  
where-to teacher-HON-NOM go-HON-FORM-Q  
*Where did the teacher go?*
- b. Ku-nun eti-eyn-ka-ey ka-ess-ta.  
he-TOP where-link-Q-to go-past-DEC.  
*He went somewhere.*

Moreover, we can see from sentences like (96b) that, like Japanese *ka*, the Korean Q-particle *ka* can appear between a post-position and the DP it selects for.

We have seen, then, that our theory correctly predicts that Q may come between P and its DP complement in Japanese and Korean. Of course, our theory also predicts that Q-particles in these languages should be permissible in between possessors and possessed NPs, as it would allow the existence of structures like that in (97).

#### (97) Structures Where Q Appears Between Possessor and Possessed in Japanese/Korean



<sup>70</sup> The reader may note that the Q-particle in (96b) is separated from the wh-word by a 'linking' morpheme *eyn*. This 'linking component' is obligatory in Korean wh-indefinites; unlike Japanese *ka*, Korean *ka* cannot directly combine with wh-indefinites. As the reader will observe below, there are other linking morphemes besides *eyn*, and the choice of morpheme depends upon the syntactic position of the wh-indefinite.

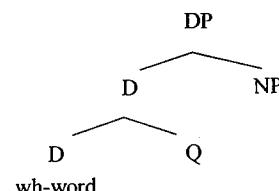
In the structure above, the Q-particle is adjoined to its DP sister, and so no projection of Q intervenes between the possessive D head and the possessor DP which it selects for. Our condition in (89) therefore permits the structure in (97), and we predict that Q-particles in Japanese/Korean should be able to come between possessors and possessa. As the following sentences demonstrate, this is again an accurate prediction.

#### (98) Japanese/Korean Q Can Appear Between a Possessor and Possessed NP

- a. Japanese Taroo-wa [dare-ka-no oniisan]-ni atta.  
Taro-TOP who-Q-GEN brother-DAT met  
*Taro met someone's older brother.*
- b. Korean Ku-ka [nwukwu-in-ka-uy tongsayng]-ul manna-ess-ta.  
he-TOP who-link-Q-GEN brother-ACC meet-past-DEC  
*He met someone's brother.*

Finally, let us note that our theory predicts that Q-particles in Japanese-like languages should be able to intervene between wh-determiners and their NP complements. After all, nothing stated thus far would rule out structures like the following.

#### (99) Japanese/Korean Q Appearing Between D and its NP Complement



This prediction, however, is incorrect. Even in Japanese and Korean, a Q-particle cannot intervene between a D and its NP complement, as the following sentences illustrate.

#### (100) Japanese/Korean Q Cannot Appear Between D and its NP Complement

##### Japanese

- a. Taroo-ga [dono hito]-ka-o hoomon sita-rasii.  
Taro-NOM which man-Q-ACC visit did-seem  
*Taro seems to have visited some man.*

- b. \* Taroo-ga [dono-**ka** hito]-o hoomon sita-rasii.  
Taro-NOM which-Q man-ACC visit did-seem

Korean

- c. Ku-ka [enu salam]-in-**ka**-lul manna-ess-ta.  
he-NOM which man-link-Q-ACC meet-PAST-DEC  
*He met some man.*
- d. \* Ku-ka [enu-in/eyn-**ka** salam]-ul manna-ess-ta.  
he-NOM which-link-Q man-ACC meet-PAST-DEC

Of course, our proposed analysis is not necessarily inconsistent with the facts in (100), as the impossibility of the deviant structures above may result from independent factors. To build towards one possible explanation, note that the structure in (99) differs from those in (94) and (97) in that the Q-particle in (99) is adjoined to the head of a phrase.<sup>71</sup> Thus, the D-head in (99) is initially merged with Q, rather than with the NP constituting its internal argument. Let us suppose, however, that selection for the internal argument of a head H must be satisfied no later than at the point where H first externally merges with something.<sup>72</sup> Under this assumption, the ill-formedness of (99) would follow. Since initial merger of D in (99) joins it with Q, and Q does not contain the phrase selected as internal argument by D, a selectional violation ensues, and the structure is ill-formed. Therefore, we find that factors independent of the QP-Intervention Condition may be responsible for the ill-formedness of (99) in even the Q-Adjunction languages.

We find, then, that the condition in (89) accurately predicts that the Q-particles of Japanese/Korean – which do not take their sister as complement – are not subject to the constraints witnessed in (75) – (80) to govern the Q-particles of Tlingit. The sentence-internal Q-particles associated with the wh-indefinites of these languages can (generally) come between functional heads and phrases selected by those functional heads.<sup>73</sup> Of course, we also saw that this condition predicts the inability for a Q-particle to follow the matrix verb in a Tlingit

<sup>71</sup> Another possibility, mentioned by native speakers of both languages, is that Q-particles in Japanese/Korean can only cliticize onto nominal categories, and the words I identify above as D-heads (*dono/enu*) are actually *adjectives*. Note, however, that this restriction on the cliticization of Q wouldn't follow from anything within our analysis.

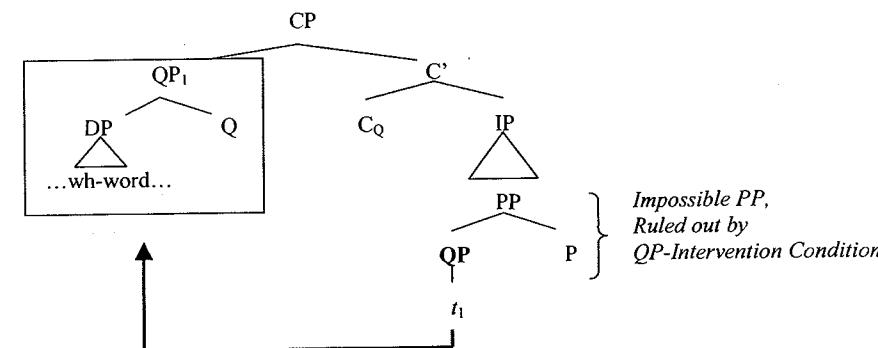
<sup>72</sup> After all, within a Bare Phrase Structure system, some principles must entail that the phrase initially merging with a head H must be the internal argument of H, rather than its external argument. Presumably, these principles could also entail that the *only* thing that may undergo initial merger with a head is its internal argument.

<sup>73</sup> Note, then, that the proposal stated in Footnote 69 that the Q-particles of Sinhala take their sisters as complements would predict that the Q-particles in Sinhala *wh-indefinites* should be subject to the constraints witnessed in (78) – (80), just as the Q-particles of Sinhala *wh-questions* are observed to (Kishimoto 2005; p. 13). Unfortunately, this is incorrect. When appearing with wh-indefinites, Sinhala *da* behaves like Japanese/Korean *ka*, and can intervene between functional heads and phrases those heads select for (Kishimoto, p.c.). I do not at present understand this pattern of data, and it constitutes a strong challenge to the analysis proposed here.

sentence, as well as the universal inability for VPs and their higher functional projections to be pied-piped by wh-words. Given the range of predictions made by the condition in (89), I conclude that, as an explanation of the facts in (78) – (80), it is preferable to any version of the ‘extraction analysis.’ Thus, the impossibility of the ill-formed sentences in (78) – (80) is due to the activity of the intervention condition in (89), and is not the result of any constraint on extraction.

Let us now turn back to the ill-formed sentences of (75) – (77), which demonstrate that these same conditions on the placement of Tlingit *sá* govern wh-questions, and let us ask whether those sentences should be understood as ruled out by a constraint on extraction *per se*. Clearly, the similarity between the facts in (75) – (77) and (78) – (80) demands that a uniform account be adopted, rather than one attributing the facts in (75) – (77) to a constraint on extraction and the facts in (78) – (80) to the condition in (89). It is fortunate, then, that the condition in (89) can alone account for the facts in (75) – (77) as well. According to our analysis in (3), the left-peripheral constituent of a wh-question is a QP that has been extracted from its base position. Thus, the ill-formed sentences in (75), where extraction of the QP stradds a post-position, would at earlier stages of their derivation have a QP intervening between a P and the DP selected by P. This is illustrated by the structure below.

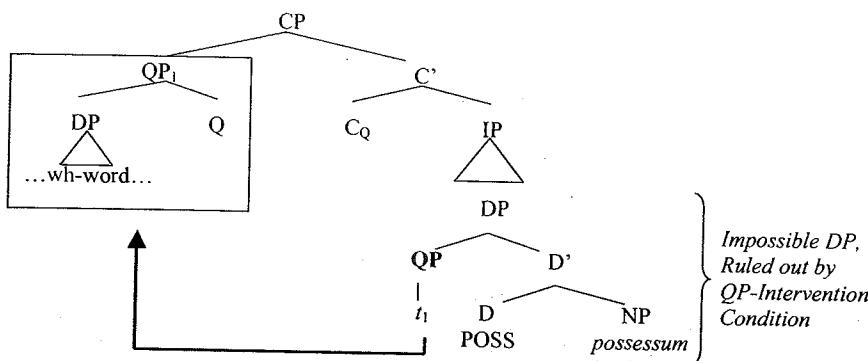
#### (101) QP-Intervention Condition Rules Out Tlingit P-Stranding



We have already seen, however, that such base-structures are impossible in Tlingit, and are ruled out by the condition in (89). As the condition in (89) rules out the base-structure that necessarily underlies P-stranding, it thereby rules out P-stranding in Tlingit, and so no special condition against such extractions need be appealed to in the grammar of Tlingit.

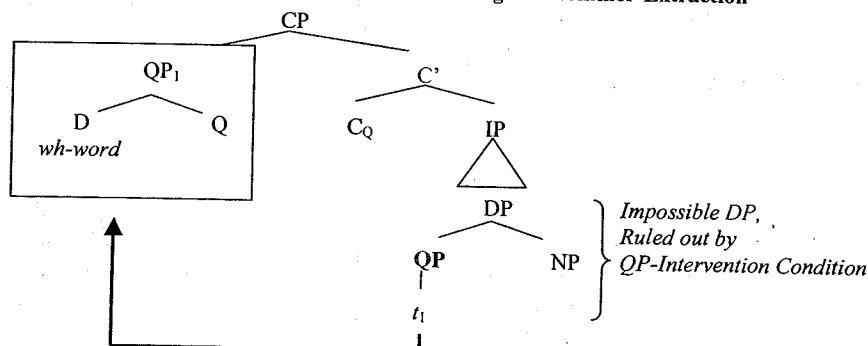
Similarly, the ill-formed sentences in (76) would at earlier stages of their derivation have a QP intervening between a possessor and the possessive D that selects the possessor, a configuration independently ruled out by condition (89), as illustrated below.

## (102) QP-Intervention Condition Rules Out Tlingit Possessor-Extraction



Finally, the ill-formed sentences in (77) could only be derived from structures where a QP intervenes between the D head and the NP complement of that D, a configuration again ruled out by condition (89).

## (103) QP-Intervention Condition Rules Out Tlingit Determiner-Extraction



We find, then, that all the ill-formed sentences in (75) – (77) could only be derived from structures that violate condition (89). Thus the condition in (89) is alone sufficient to rule out the ill-formed sentences in (75) – (77), and therefore provides a uniform account for all the data in (75) – (80).

Recall, however, that the impossible extractions of the kind seen in (75) – (77) are found to be ill-formed in many languages of the world, that patterns of obligatory pied-piping suggest that these extractions are cross-linguistically ‘marked’. Again, it would be preferable to have a uniform account of these facts across languages, rather than one in which they are due to condition (89) in Tlingit, but to conditions specially governing extraction in other languages. Given the strong case supporting condition (89) in Tlingit, it is most reasonable to conclude that condition (89) must also be responsible for the impossibility of the aforementioned extractions in all other wh-fronting languages. Of course, such an analysis is only possible under the view that wh-fronting in all languages proceeds as represented in (3).

In summary, then, we have found that the constraints on Tlingit wh-extraction witnessed in (75) – (77) are best explained by a condition governing the position of Q-particles. Since these same constraints on wh-extraction are also found in other, more familiar wh-fronting languages, we find further confirmation that wh-fronting in all languages is, as in Tlingit, a by-product of Q-movement. Moreover, we find that the general impossibility of these extractions is ultimately due – not to any constraint on extraction *per-se* – but to independently visible constraints on the placement of Q. Such constraints serve to limit wh-extraction by limiting the structural pre-conditions for wh-extraction, ruling out the base-structures from which the ill-formed extractions must be derived. Thus, rather than explain the impossibility of these extractions in terms of the ‘islandhood’ of the base positions, we can explain the *apparent* islandhood of those positions in terms of independently visible constraints on the placement of Q. This seems to be a promising direction, as certain of these positions have been independently argued not to be true syntactic islands (Abels 2003; Footnote 64).

## 5 CONCLUSION

I have argued that in all languages, the fronting of wh-words in wh-questions is a by-product of the attraction of a Q-particle into the left periphery of the clause. In no language is such fronting the result of a direct relationship between the interrogative C and the wh-word itself, there being no direct syntactic relationship between these elements. This analysis was shown to be necessary for the wh-fronting structures of Tlingit, and its extension to all other wh-fronting languages was defended on conceptual and empirical grounds.

This proposal was shown to entail a number of positive analytic consequences. Besides inviting a fresh perspective on the parametric differences between wh-fronting and wh-*in-situ* languages, it also advances understanding of pied-piping structures, as it permits pied-piping structures to be derived without appeal to special mechanisms of ‘feature percolation’. Indeed, in a certain sense, it actually eliminates the concept of ‘pied-piping’ from the grammar, as there is never a case in which something larger than the ‘targeted’ constituent is fronted. This analysis therefore calls into question the notion that ‘pied-piping’ underlies all instances of any

phrasal movement (Chomsky 1995; Matushansky 2006), a notion that is independently challenged by Heck (2004).

Most importantly, however, we have seen that constraints on wh-extraction and pied-piping can be approached in a new light, as constraints on the position of Q-particles. In particular, the single condition on Q-particles in (89) was found to derive (i) the inability for VPs to be pied-piped, (ii) the inability for adpositions to be stranded, (iii) the inability for possessors to be extracted, and (iv) the inability for wh-determiners to be extracted. This ‘Q-based’ approach to wh-movement receives further application in Cable (2007), and appears to be a productive new way of attacking various grammatical puzzles.<sup>74, 75</sup>

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<sup>74</sup> Besides a richer treatment of the constraints on pied-piping in English, Cable (2007) also presents a treatment of the variation in Superiority Effects and Intervention Effects across languages.

<sup>75</sup> Special thanks are due first and foremost to David Katzeek, Anita Lafferty, John Marks and Fred White, the Tlingit language consultants for this project. Their generosity, patience and energy are truly exceptional, and I thank them for all the time and help they have provided me in my study of their language. Most of the Tlingit data presented here were gathered from interviews conducted at the Sealaska Heritage Institute in 2005, 2006 and 2007. Special thanks are owed to Richard Dauenhauer, Nora Marks Dauenhauer, Keri Edwards, Yarrow Vaara, Rosita Worl, and everyone else at SHI. I also wish to thank Roby Littlefield for inquiring about certain Tlingit forms with Mary Anderson, and Mary Anderson for teaching both Roby and me these forms. Special thanks are also due Roby Littlefield, James Crippen and all the other members of the Tlingit Language and Culture Discussion List. *Aatlein gunalchéesh!*

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