

Labeling in Edge

Kawamitsu, Jun
Graduate School of Humanities, Kyushu University : Doctoral Program

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Jun Kawamitsu

1. Introduction

Syntactic parameters vary from language to language. There are some asymmetries even in English. Quantifier Float (Q-float), for example, is the phenomenon in which we can find the parametric differences in that the occurrence of Floating Quantifier (FQ) is restricted in some varieties like standard English but relatively unrestricted in other varieties like West Ulster English (WUE).

- (1) a. What did he say all that he wanted to buy t?
b. What do you think (that) he'll say all (that) we should buy t?

(West Ulster English (WUE); McCloskey (2000: 62))

As observed by McCloskey (2000), FQ can strand in the intermediate Spec-CP position in WUE. On the other hand, FQ in standard English cannot strand in the edge of the intermediate CP. In previous studies, the example in (1) is often cited as evidence for successive-cyclic movement from the perspective of stranding analysis of Q-float (e.g., Sportiche (1989), Shlonsky (1991), Bošković (2004), among others). However, the parametric puzzle for why the distribution of FQs varies from language to language, for example, is not enough to be scrutinized. This paper tries to explain this puzzle theoretically in terms of the Labeling Algorithm (LA) proposed by Chomsky (2013). In the LA framework, a label of the set is not determined automatically but by a specific algorithm based on Minimal Search (MS). However, we cannot capture the parametric differences if all structures are labeled equally. Therefore, we suggest that the parametric behavior of Q-float comes from the different labeled structures; a label is detected as X in some environments on the one hand and

as XP on the other. Furthermore, we suggest that these labeling asymmetries are deduced from the two types of Transfer operations: Strong Transfer and Weak Transfer.

We begin by presenting asymmetries of Q-float in some English varieties in Section 2. Section 3 outlines the main theoretical background of this paper and proposes two types of Transfer operations. Section 4 suggests how our analysis captures the parametric distinctions of Q-float. The conclusion is given in Section 5.

2. (Im)possibility of stranding FQ in the edge¹

The previous section shows that FQ can strand in the intermediate CP position in WUE. Henry (2012) observes that some varieties of English have similarities to WUE in that they allow FQ to be floated in the intermediate edge of CP. This pattern is found in West Derry City English and East Derry English, and the latter example is the following:

- (2) a. Where did he think all that you went in Derry?
b. Who did he say all was elected in the council elections?

(East Derry English (EDE); Henry (2012: 31))

On the other hand, Henry also notes that some varieties indicate opposite results; FQ cannot float in the intermediate Spec-CP. This pattern is found in South Derry English and Strabane English.

- (3) * What did he say all that he did on holiday?

(South Derry English (SDE); Henry (2012: 28))

Furthermore, FQ-stranding is found not only in Spec-CP, as shown above, but also in Spec-vP. East Derry English and South Derry English allow FQ to strand in the Spec-vP position.

- (4) a. What did he all do on holiday?
b. What did he all say that he did on holiday?

(SDE; Henry (2012: 28))

Interestingly, while South Derry English does not allow FQ to be floated in the edge of CP, FQ-stranding in the edge of vP is acceptable. In addition, FQ cannot appear in the Spec-vP position in Strabane English.

- (5) a. * What did he all do in Derry?
b. * What did he all say that he did in Derry?

(Strabane English (StE); Henry (2012: 31))

The varieties overviewed in this section are summarized in the following table:

	EDE	SDE	StE
Stranding FQ in Spec-CP	✓	*	*
Stranding FQ in Spec-vP	✓	✓	*

Table 1: Asymmetries of Q-float

3. Theoretical Background

3.1. Labeling Algorithm

In the labeling theory proposed by Chomsky (2013), a set created by Merge should be labeled with a certain algorithm based on Minimal Search (MS) in order to be interpreted at the interfaces. There are three possible structures to be considered:

- (6) a. $\gamma = \{H, XP\}$
b. $\gamma = \{XP, YP\}$
c. $\gamma = \{H1, H2\}$

In (6a), LA detects the closest head, H, so this set is labeled as H. On the other hand, the set in (6b), the so-called XP-YP configuration, cannot be labeled since the LA cannot identify the closest head. Chomsky provides a two-way solution for this structure: (i) structure modification strategy and (ii) feature-sharing strategy. The former strategy results in the properly labeled structure when either XP or YP moves out of the $\{XP, YP\}$ set. For instance, the XP's movement renders γ identified as YP in (6b). In the feature-sharing strategy, if both XP and YP share prominent features in common (e.g., ϕ -feature and Q-feature), then they function as a label for γ . The detailed analyses for the third structure in (6c), which we call the Head-Head configuration, have not been presented thus far, but we suggest that the Head-Head configuration leads to a labeling failure.

3.2. Two Types of Transfer Operation

Since Chomsky (2000), it has been assumed that the Transfer operation, which sends syntactic structures to the interfaces cyclically by phase, makes its domain untouchable in narrow syntax. Given that CP and vP are phases, their complement is sent to the interfaces after Transfer.

- (7) a. [CP XP_i C [TP ... t_i ...]]
 b. [vP YP_i v [VP ... t_i ...]]

Shaded areas in (7) are the domain of Transfer, so elements within its domain cannot have access to further syntactic operations. Only the edge of the phase remains present in narrow syntax, and XP and YP in (7), for example, can participate in the next syntactic operations.

Generally, Transfer is supposed to send off all syntactic structures so that no elements within its domain exist in narrow syntax. We tentatively call this type Strong Transfer, which is scrutinized by Ott (2011), Narita (2011) and Epstein, Kitahara and Seely (2012). Obata (2017), on the other hand, argues that Transfer is weak enough to keep syntactic structures in narrow syntax.

- (8) [W]eak Transfer only makes certain domains inaccessible to operations in narrow syntax, and all the elements/features consisting of representations in narrow syntax are preserved as is after Transfer. (Obata (2017: 120))

She provides a problem of Strong Transfer and suggests that the example in (9) cannot be expected if Transfer is strong enough to erase all syntactic objects from narrow syntax, as shown in (10).

- (9) Whose claim that John bought the book did Mary believe?
 (10) a. [DP whose claim that [TP John bought the book]]
 b. Mary (did) believe [whose claim that [TP]]
 c. [DP whose claim that [TP]]; did Mary believe t_i

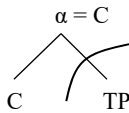
If TP, which is a complement of *that*, is strongly transferred, then the resulting output expects an incorrect one like **Whose claim that did Mary believe John bought the book?*. However, if the information of TP is preserved in narrow syntax due to Weak Transfer, as pointed out by Obata, then the sentence in (9) derives appropriately.

In this paper, we consider both Strong and Weak Transfer and suggest that these two options affect the way of labeling.

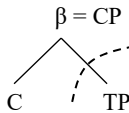
3.3. Labeling in Edge

We assume there are two options for Transfer: one is strong, and the other is weak. We propose that these two operations affect the way of labeling; while following Takita *et al.* (2016), Strong Transfer supplies the head status label for α (= (11a), (11c)), Weak Transfer makes β (= (11b), (11d)) be a phrase level, extending the insight of Obata (2017). In the following, a curved line denotes Strong Transfer and a curved dotted line Weak Transfer.

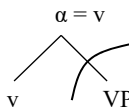
- (11) a. Labeling in CP with Strong Transfer



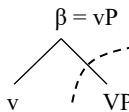
- b. Labeling in CP with Weak Transfer



- c. Labeling in vP with Strong Transfer



- d. Labeling in vP with Weak Transfer



In the next section, we show that this suggestion can provide the possible answer to the parametric question on Q-float straightforwardly.

4. Analysis

This section aims to explain how two types of Transfer can provide theoretical explanations for the parametric variations of Q-float. As shown previously, while some varieties of English allow FQ to be stranded in the edge of CP or vP position, some do not. Let us suppose that Strong and Weak Transfer result in different labeled structures, as shown in (11), and Q-float can occur in the phase edge due to the landing site of the associate of FQ. In that case, there are at least four possibilities to be considered: the ban on Q-float (i) in Spec-CP and vP, (ii) only in Spec-CP, (iii) only in Spec-vP, and (iv) the allowance of Q-float in any phase edges.

First, we consider West Ulster English and East Derry English varieties, which allow FQ to be floated in the intermediate Spec-CP position, repeated below.

(12) What did he say all that he wanted to buy t? (=(1a))

We assume that the phase head C in these varieties, which show Q-float in the edge of CP, leads to a Weak Transfer. Boxed elements denote the domain of Weak Transfer.

- (13) a. he wanted to buy [α all [what]]
 b. [α all [what]]_i [β that he wanted to buy t_i]]
 c. [what]_j did he say [γ [α all t_j]_i [β that he wanted to buy t_j]]]]
(α =Q, β =CP, γ =QP)

Following Shlonsky (1991), we assume that FQ is a head of Q, taking DP as its complement, so the Q head *all* takes the *wh*-phrase *what* as its complement, forming the set α in (13a). Then, a phase head C is introduced into the derivation, and the set α moves to the edge of CP position in (13b). In this case, the C head triggers Weak Transfer, so the boxed elements are preserved in narrow syntax. In (13c), the *wh*-element moves to the matrix Spec-CP, stranding FQ in the intermediate landing site. LA correctly labels this structure: α is detected as Q, β as CP, and γ as QP. We should note that the label α is determined as head-level Q, not phrasal-level QP. This idea comes from the analyses of Chomsky (2013), Maeda (2021), and Kawamitsu (2021). They propose that the lower copies created by movement are strictly invisible for LA. Kawamitsu (2021), for example, argues that “[w]hen the XP moves out of the set {H, XP}, the label of this set is determined as H, not HP (Kawamitsu (2021: 114)).” The

label β in (13) is detected as CP since Weak Transfer renders the complement of the phase head preserved in the derivation by the proposal mentioned in (11b). Hence, LA decides the label γ , formed by $\{Q, CP\}$, as QP. The labeling failure does not arise in this derivation thanks to Weak Transfer, so the varieties, which allow FQ in the edge of CP, are theoretically possible. Recall that East Derry English allows FQ-stranding in Spec-vP in addition to Spec-CP.

(14) What did he all say that he did in Derry? (EDE; Henry (2012: 31))

Let us assume that the phase head v triggers Weak Transfer in varieties that allow FQ-stranding in the Spec-vP. Then, the parallel labeling procedure with the C head, which triggers Weak Transfer, can be obtained.

- (15) a. he did [α all [what]] in Derry
 b. [[α all [what]]]_i [β say [t_i that he did t_i in Derry]]
 c. [what]_j did he [γ [α all t_j] [β say [t that he did t in Derry]]]
- ($\alpha=Q, \beta=vP, \gamma=QP$)²

The set α containing FQ and its associate is merged in the object position in the embedded clause in (15a). In (15b), the main verb is introduced into the derivation, and the set α moves to the Spec-vP position in a successive-cyclic fashion. Then, Q-float occurs in (15c), so the *wh*-phrase moves to the matrix Spec-CP, stranding the FQ in the Spec-vP. The labels α , β , and γ are detected at the timing in (15c). *Wh*-movement out of the set α makes this label Q by the assumption that lower copies do not contribute to labeling. The phase head v in these varieties triggers Weak Transfer, and the complement of v is still in the narrow syntax. Hence, β is decided as vP. the set γ formed by $\{Q, vP\}$ is labeled as QP. The labeling failure does not arise in this structure, so FQ-stranding in the Spec-vP is licensed in varieties like East Derry English and South Derry English.

As we have observed so far, labeling with Weak Transfer does not cause problems of projection so that FQ can float in the edge of CP or vP. Below, we argue that the opposite result appears for labeling with Strong Transfer: Q-float in the edge of CP or vP is banned when these phase heads trigger Strong Transfer. Let us now consider the South Derry English and Strabane English varieties, in which FQ

stranded in Spec-CP is prohibited.

- (16) * What did he say all that he did on holiday? (= (4b))

We assume that the C head triggers Strong Transfer in these varieties and show the derivation below. Shaded materials denote the domain of Strong Transfer.

- (17) a. he did [α all [what]] on holiday
 b. [α all [what]]_i [β that [he did t_i on holiday]]
 c. [what]_j did he say [γ [α all t_j]_i [β that [he did t_i on holiday]]]
 ($\alpha=Q, \beta=C, \gamma=??$)

The set α merged with the verb in the embedded clause in (17a) moves to the intermediate landing site of CP after the C head participates in the derivation, as shown in (17b). Q-float arises in (17c), and the *wh*-phrase is internally merged with the matrix CP. Then, LA detects each label in the structure, but in this case, β is labeled as C, not CP. This is because the complement of *that* is strongly transferred to the interfaces, and no elements within the transfer domain are not visible for LA based on the proposal in (11a). Hence, the label γ formed with $\{Q, v\}$ cannot be detected due to the Head-Head configuration. As suggested in section 3.1, this configuration in question cannot be labeled by LA. As a result, the illegible labelless structure arises in this derivation so that ungrammatical sentences are expected if Q-float appears in the intermediate edge of CP in the varieties of South Derry English and Strabane English. In addition to the ban on Q-float in Spec-CP, FQ in Spec-vP is not allowed in the Strabane English variety, repeated below.

- (18) * What did he all do in Derry? (= (5a))

Let us assume that the v head leads to Strong Transfer in this variety.

- (19) a. do [α all [what]] in Derry
 b. [α all [what]]_i [β do [t_i in Derry]]
 c. [what]_j did he [γ [α all t_j]_i [β do [t_i in Derry]]]
 ($\alpha=Q, \beta=v, \gamma=??$)

After the set α is externally merged with the verb in (19a), it moves to the edge of v in order to evacuate from the transfer domain in (19b). In this case, the complement of v is strongly transferred so that the shaded area is not visible in syntax. In (19c), the *wh*-phrase moves to Spec-CP stranding FQ in the intermediate landing site, Spec-

vP. However, this derivation expects the labeling failure in γ . Since α is labeled as Q and β as v, the label γ cannot be decided due to the Head-Head configuration of $\{Q, v\}$. Consequently, the ban on Q-float in Spec-vP in Strabane English is expected.

In summary, we have suggested that parametric variations observed in the Q-float phenomenon are theoretically explained if we assume two types of Transfer operations: Strong and Weak. We argue in terms of the labeling theory that labeling with Strong Transfer cause problems of projection in some varieties due to the Head-Head configuration. On the other hand, the varieties which allow FQ in the phase edge have strategies to result in properly labeled structure thanks to Weak Transfer. These parametric distinctions tackled in this paper are summarized in the following table:

	EDE	SDE	StE
Stranding FQ in Spec-CP	✓	*	*
Stranding FQ in Spec-vP	✓	✓	*
Transfer option in CP	Weak	Strong	Strong
Transfer option in vP	Weak	Weak	Strong

Table 2: Two-way Options of Transfer

5. Concluding Remarks

There can still be some remaining problems in this analysis. However, we believe that the aim of this paper, which is to handle the parametric distinctions by assuming only the language-specific Transfer operation, contributes to the validity of the spirit of the Strong Minimalist Thesis. Our analysis can be extended to other parametric mysteries if it is on the right track. We leave these points for future research.

Notes

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¹ Throughout the article, we focus on FQ *all*, and we do not concern with the differences between *all* and other FQs, such as *both* and *each*.

² One might wonder whether a selectional problem arises between T and v since T does not select the vP label but the QP label in this structure. If FQ cannot strand in Spec-vP in general for the reason of selection relation, then Q-float sentences cannot be used as supporting evidence of successive-cyclic movement, at least in the vP phase level.

References

- Bošković, Željko (2004) “Be careful where you float your quantifiers,” in *Natural Language & Linguistic Theory* 22, 681-742.
- Chomsky, Noam (2000) “Minimalist Inquiries: The Framework,” *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. by Roger Martin, David Michaels and Juan Uriagereka, 89–155, MIT Press, Cambridge, MA.
- Chomsky, Noam (2004) “Beyond Explanatory Adequacy,” *Structures and Beyond: The Cartography of Syntactic Structures* 3, ed. by Adriana Belletti, 104–131, Oxford University Press, Oxford.
- Chomsky, Noam (2008) “On phases,” *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*, ed. by Robert Freidin, Carlos Peregrin. Otero, and Maria Luisa Zubizarreta, 133–166, MIT Press, Cambridge, MA.
- Chomsky, Noam (2013) “Problems of projection,” *Lingua* 130, 33-49.
- Epstein, Samuel, Hisatsugu Kitahara and Daniel Seely (2012) “Structure building that can’t be!,” In M. Uribe-Etxebarria and V. Valmala (eds.), *Ways of structure building*, 253-270. Oxford University Press.
- Henry, Alison (2012) “Phase Edges, Quantifier Float and Nature of (Micro-) Variation” *Iberia* 4, 23-39.
- Kawamitsu, Jun (2021) “A Labeling Analysis of Quantifier Float in English,” *Kyushu University English Review* 63, 107-128.
- Maeda, Masako (2021) “Labeling in Inversion Constructions,” *English Linguistics* 38 (1), 91-105.
- McCloskey, James (2000) “Quantifier float and *wh*-movement in an Irish English,” *Linguistic*

Inquiry 31, 57-84.

Narita, Hiroki (2011) *Phasing in full interpretation*. Harvard University Ph.D. thesis.

Obata, Miki (2017) “Is Transfer strong enough to affect labels?,” In Leah Bauke & Andreas Blümel (eds.), *Labels and Roots*, 117-126, Mouton de Gruyter.

Ott, D. 2011. A note on free relative clauses in the theory of phases. *Linguistic Inquiry* 183–192.

Shlonsky, Ur (1991) “Quantifiers as Functional Heads: A Study of Quantifier Float in Hebrew,” *Lingua* 84. 159-180.

Sportiche, Dominique (1988) “A Theory of Floating Quantifiers and its Corollaries for Constituent Structure,” *Linguistic Inquiry*, 19, 425-449.

Takita, Kensuke, Nobu Goto, and Yoshiyuki Shibata. 2016. Labeling through Spell-Out. *The Linguistic Review* 33:177–198.