

A Note on Conjoined *Wh*-Questions

Atsushi Takekoshi

1. Introduction

In English, a question sentence can contain more than one *wh*-phrase. Consider (1). In these examples, two (or more) *wh*-phrases are apparently conjoined. I use the term *apparently*, because the aim of this paper is to demonstrate that the *wh*-phrases in each of (1) are not conjoined directly. I will call these sentences *conjoined wh-questions* because I will ultimately show that the conjoined elements in (1) are *wh*-questions rather than *wh*-words. As (1e-f) show, an indirect question can also contain more than one *wh*-phrase.

- (1) a. **When and where** did you see them? (Browne 1972 : 223)
 b. **When and with what** did John hit Bill?
(Grimshaw 1978 : 8)
 c. **How and when** should the peace corps be launched?¹
 d. **Why and when** should tooth-straightening be undertaken?
 e. **How and why** this process occurs would provide an interesting separate subject for study.
 f. Foliage is the outstanding photo subject in many of the southern locales mentioned above and some specific tips on **how and where** to shoot it are in order.

English has another type, with no conjunction, as in (2).

(2) When did you see them where ?

This paper will not discuss examples like (2).

Browne (1972) and Grimshaw (1978) have observed that conjoined *wh*-questions are acceptable only when both of the *wh*-phrases are optional elements, that is, adjuncts. This is suggested by (1). The examples in (3) show that the conjunction of an argument *wh*-phrase and an adjunct *wh*-phrase is not allowed. The example in (4) shows that the conjunction of argument *wh*-phrases are not allowed.

- (3) a. *What and how hard did John kick ?
 b. *What and when did he give you ?
 c. *Who and with what broke the glass ?

(4) *John asked who and what bought. (Grimshaw 1978 : 2-7)

Notice that the two *wh*-phrases in (4) do not originate in the same syntactic position. *Who* is moved from the subject position and *what* is moved from the object position. If two argument *wh*-phrases originate in the same syntactic position, they can be conjoined.²

- (5) a. Who and whose brother did you like ?
 b. Who and what did you see ? (Haraguchi 1983 : 50)

In (5a) both *who* and *whose brother* are the objects of the same verb.

In this paper, I will propose that examples like (1) are Right Node Raising constructions (henceforth, RNR constructions), while examples like (5) are questions in which conjoined *wh*-phrases are fronted. In other words, (1) and (5) are different constructions, though they have a superficial resemblance. The ungrammaticality of (3-4) is derived from constraints on RNR.

Before presenting my analysis, I will discuss problems with previous approaches to this construction in section 2. Grimshaw's (1978) analysis is especially controversial. Grimshaw assumes that the examples in both (1) and (5) are questions in which the conjoined *wh*-phrases are fronted. If this

analysis is correct, we must allow the conjunction of elements that do not belong to the same semantic category. For example, under Grimshaw's analysis, *where*, a locative, and *when*, a temporal, are directly conjoined in (1a). But there is evidence to show that such conjunctions are not allowed. The RNR approach can explain the behavior of conjoined *wh*-questions without using such conjunctions.

2. Previous Approaches

2.1 The Sluicing Approach (Merchant 1996)

Merchant (1996) analyzes (1) as examples derived by sluicing. A typical example of sluicing is given in (6a), which is interpreted as (6b).

- (6) a. Someone just left — guess who.
 b. Someone just left — guess who just left. (Ross 1969 : 252)

It is generally assumed that the structure of (6a) is (7), in which the IP is empty.

- (7) Someone just left — guess [_{CP} who [_{IP} e]].

According to Merchant's analysis, the structure of (1c) is (8).

- (8) [_{CP} How [_C e]] and [_{CP} when [_C should the peace corps be launched
t]]

In (8), the empty category is C' rather than IP. It is possible to delete C' in a main clause, as in (9).

- (9) John went to Florida. When/With whom ?

(Bechhofer 1977 : 19)

However, it is not allowed to delete elements in the first conjunct of a coordinate structure. (10-11) are examples of VP deletion. The empty category in a coordinate structure can not precede its antecedent, as in (10b), though the empty category in a subordinate structure can precede its antecedent, as in (11b).

- (10) a. John likes linguistics and Mary does __, too.
 b. *John does __ and Mary loves linguistics, too.
- (11) a. John likes linguistics although Mary doesn't __.
 b. Although Mary doesn't __, John likes linguistics.

The same is true for N' deletion.

- (12) a. John read Mary's story, and Bill read Jennifer's __.
 b. *John read Mary's __, and Bill read Jennifer's story.

One might take (13) as an example of backward sluicing.

- (13) I can tell you when, but I can't tell you why, he left me.

(Bresnan 1974 : 618)

However, to analyze (13) as an example derived by sluicing obscures the generalization that it is not allowed to delete elements in the first conjunct in a coordinate structure. Furthermore, the pause between *why* and *he* suggests that this sentence is an RNR construction. Thus, (13) is best analyzed as an example of RNR constructions.

Furthermore, the examples in (14) are problematic for Merchant's approach.

- (14) a. Who and whose brother carried a bucket between themselves?
 b. Who and whose brother did the same thing?

(Haraguchi 1983 : 55)

According to Haraguchi, (14) can not be derived by a deletion rule because the representation before the application of the rule is ungrammatical as in (15). In (15a) the anaphor is not bound.

- (15) a. *Who carried a bucket between themselves and whose brother
 carried a bucket between themselves?
 b. ? Who did the same thing and whose brother did the same
 thing?

The examples in (14) seem to suggest that the argument *wh*-phrases are directly conjoined. I will discuss this point in 3.3.

In this section, I have shown that conjoined *wh*-questions can not be derived by the rule of sluicing.

2.2 The Conjoined Wh Fronting Approach (Grimshaw 1978)

Grimshaw (1978) assumes that the structure of (1a), repeated as (16), is (17). In (17) the two *wh*-phrases are directly conjoined, and the conjoined *wh*-phrases are fronted into CP-Spec.³

(16) **How and when** should the peace corps be launched ?

(17) [_{CP}[How and when]_I [_C should [_{IP} the peace corps be launched *t*]]]

She claims that (18) is ungrammatical because an argument and an adjunct are conjoined.

(18) *What and when did he give you ?

She assumes that an adjunct can not be conjoined with an argument. This is attested by the following examples.

(19) a. *[John and yesterday] went to the station.

b. *John wrote [the letter and with this pen].

By contrast, an adjunct can be conjoined with another adjunct. In such a case, the conjoined adjunct *wh*-phrases can be fronted.

The point of Grimshaw's analysis is that the contrast between (16) and (18) is derived from the availability of the conjunction of *wh*-phrases. Grimshaw takes (20) as evidence for her analysis.

(20) a. *I don't know whether and where you saw them.

b. *When and what did John hit Bill with ? (Grimshaw 1978)

According to Grimshaw, (20a) is ungrammatical because the complementizer *whether* and the adjunct *when* can not be conjoined, and (20b) is ungrammatical because *when* is conjoined with *what*, which is a component of *with what*.

Grimshaw's analysis is based on the assumption that an adjunct can be conjoined with another adjunct regardless of their semantic functions. But

since Peterson (1981), Goodall (1987) and so on, it is generally assumed that constituents with different semantic functions can not be conjoined. Goodall (1987) uses the term “archicategory” to refer to semantic functions. The archicategories that Goodall proposes are Manner, Time, Predicate, and so on.⁴ Consider (21). All the conjoined phrases are adjuncts, but these sentences are ungrammatical.

- (21) a. *We walked [[slowly] and [on Tuesday]].
 b. *They walked to leave [[tomorrow] and [with great care]].
 c. *We walked [[with great care] and [on Tuesday]].

(Goodall 1987 : 45)

According to Goodall, the examples in (21) are ungrammatical because the archicategories of the conjoined phrases are different. In (21a), the manner adverb *slowly* (Manner) and the temporal adverb *on Tuesday* (Time) are conjoined. Now, let us look at (16). In (16) the conjoined *wh*-phrases belong to the different archicategories : Manner and Time. Hence, the *wh*-phrases in (16) can not be conjoined.

The proponents of Grimshaw’s analysis might reply to this objection as follows : in the case of *wh*-phrases, the semantic restriction on coordination is weakened. However, I can not accept this suggestion. Consider (22). These examples are multiple *wh*-questions in which the conjoined *wh*-phrases are in situ. They are ungrammatical.

- (22) a. *Who saw the suspect [where and when] ?
 b. *Who did the witness see [when and where] ?

(Merchant 1996 : 11)

These can only be expressed in non-conjoined counterparts, as in (23).

- (23) a. Who saw the suspect where, when ?
 b. Who did the witness see when, where ?

(Merchant 1996 : 11)

The examples in (22) show that elements that belong to different semantic

categories can not be conjoined even if they are *wh*-phrases.

In this subsection, I have shown the problem with analyzing (16) as a *wh*-question including directly conjoined *wh*-phrases. The point is that an adjunct *wh*-phrase can not be directly conjoined with another adjunct *wh*-phrase. In the next section, I will present the analysis that does not assume the conjunction of adjunct *wh*-phrases.

3. The Right Node Raising Approach

3.1 Right Node Raising

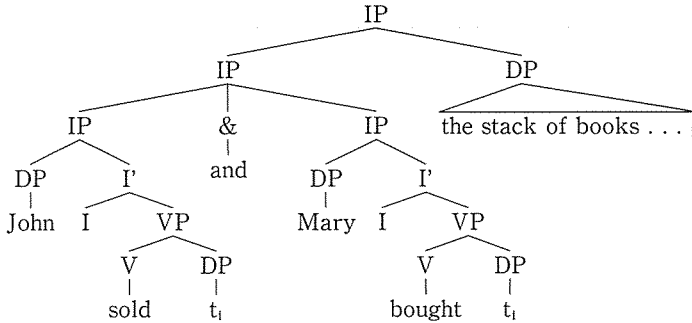
In section 2, I have shown that examples like (1) are not questions including conjoined *wh*-phrases or sluicing. In this section I will show that they are Right Node Raising (RNR) constructions. A typical example of RNR constructions is (24).

- (24) John sold and Mary bought [the stack of books that was required for linguistics 101].

The bracketed phrase is the Right Node Raised constituent. This phrase serves as the object of *sold* and *bought*. That is, this phrase is shared by the two VPs. Thus, I will call this phrase the *shared material*.

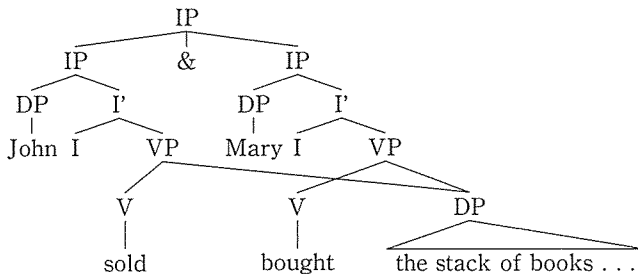
There have been two basic approaches to RNR. The first approach, illustrated in (25), is to assume that RNR involves across-the-board (ATB) rightward extraction of the shared material. (cf. Ross (1967), Postal (1974))

(25)



The second approach to RNR develops a number of theories that modify standard phrase structure theories in such a way that the shared material in RNR can be shared between both conjuncts without ATB extraction. The phrase structure developed by this approach is “three dimensional phrase marker.” (cf. Goodall (1987) and Moltmann (1992)) According to this approach, RNR is the result of the superimposing of two partially identical sentences. Where the two sentences are identical, there is just one representation for both occurrences. The identical part is shared between both of the conjuncts, as in (26).

(26)



The proponents of this approach present a number of arguments against the ATB extraction approach to RNR. The logic of these arguments is typically to show that the shared material behaves as if it has not undergone movement. I will show three arguments for the three-dimensional approach to RNR here.⁵

First, the example in (27) shows that RNR does not induce a violation of Complex NP Constraint.

- (27) Mary knows a man who buys and Bill knows a man who sells
[pictures of Fred]. (Wexler and Culicover 1980 : 299)

If the bracketed constituent is moved, this sentence is expected to be ungrammatical because the constituent is extracted from the complex NP.

Secondly, the examples in (28) show that a wide range of different categories can serve as the shared material, including categories for which there is no independent evidence that they can undergo movement. In (28a) the shared material is the VP headed by a participial, and in (28b) it is the two objects of the double object construction.

- (28) a. John will and Mary already has [mailed the conference program to all of the presenters].
b. John will post and Mary is about to e-mail [a copy of the conference program to all of the presenters].
(Phillips 1996 : 52)

The examples in (29) show that the shared materials in (28) can not undergo movement.

- (29) a. *(and) [mailed the conference program to all of the presenters]
Mary already has.
b. *[a copy of the conference program to all of the presenters]
Mary is about to e-mail. (ibid.)

Thirdly, the examples in (30) show that the shared material in RNR behaves as if it is in situ for a test of binding.

- (30) a. I know that Mary_i said and I happen to agree [that she_i needs a new car].
b. *I know that she_i said and I happen to agree [that Mary_i needs a new car]. (Levine 1985 : 496)

The example in (30b) shows that the pronominal subject in the embedded

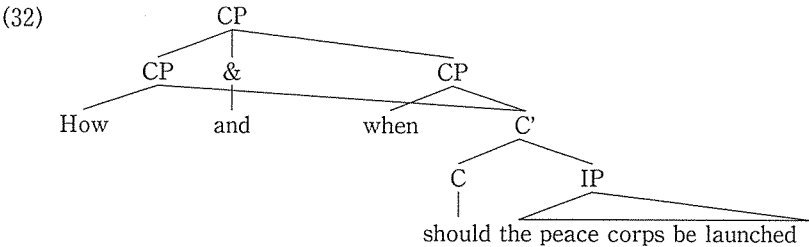
clause binds the shared material, which induces a Condition C violation.

For reasons like these, it has generally been concluded that the ATB extraction approach to RNR is not viable. Because this paper is not intended to analyze RNR, I adopt the three dimensional approach to RNR without further discussion, and assume that the shared material of RNR remains *is situ*.

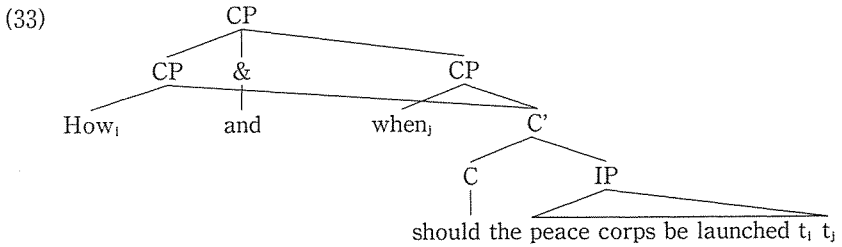
3.2 Conjoined Adjunct *Wh*-Phrases

In section 2, I have shown that conjoined *wh*-questions are not constructions including conjoined *wh*-phrases, and that they are not derived by sluicing. I will apply the analysis of RNR given in 3.1 to conjoined *wh*-questions. We can properly explain the examples cited above, by analyzing conjoined *wh*-questions as RNR constructions. Under this approach, the structure of (31) is (32), in which the *C'* is shared between the two CPs.

(31) How and when should the peace corps be launched ?



The problem now is to determine the relation between the two *wh*-phrases and their traces. One possibility might be that each of the two *wh*-phrases leaves its own trace, as in (33).



However, in this structure the shared C' contains non-shared traces. t_i is required by the first conjunct, and t_j is required by the second conjunct. It is not allowed that a shared material contains a non-shared material, as (34) shows. In (34) *to Mary* is required by the second conjunct, and is not shared.

(34) *John ate, but Bill gave an apple to Mary.

The ungrammaticality of (34) can be explained by considering the interpretation of RNR in detail. Look at (35). The pronoun *his* in (35a) can refer to both *Tom* and *Bob*, and *he* in (35b) can refer to both *Bill* and *John*. That is, RNR allows sloppy reading.

- (35) a. *Bob* knows, but *Tom* doesn't know, [how to crane *his* neck].
 - b. *John* wants to, and *Bill* actually does, [beat Mary because *he* hates her].
- (Kimura 1986 : 132)

In order to represent this interpretation properly, the LF representation in (36) is necessary. In (36) sharing no longer takes place. Each of the conjuncts dominates the CP independently.

(36) *Bobi* knows [_{CP} how to crane his_i neck] , but *Tom*_j doesn't know [_{CP} how to crane his_j neck].

If so, the LF representation in (37) is derived from (34).

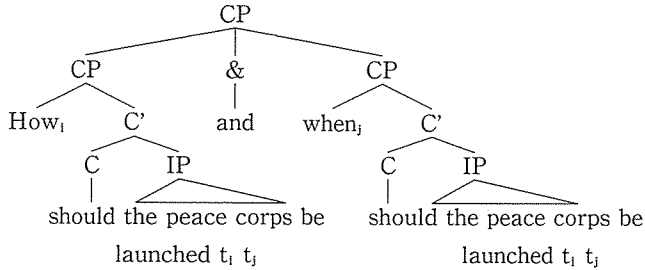
(37) John ate an apple to Mary, but Bill gave an apple to Mary.

In the first conjunct, *to Mary* can not be interpreted. Thus, (34) is ruled out.

Now, return to (33). At LF the representation in (38) is derived from

(33).

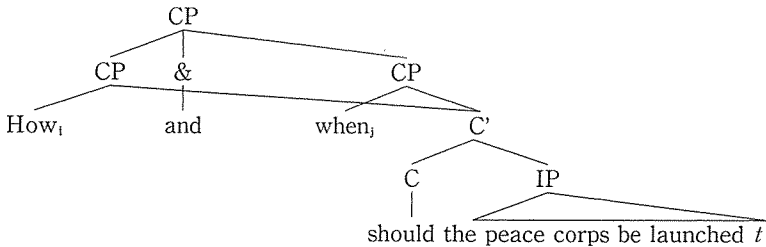
(38)



This is not a well-formed LF representation because each of the conjuncts contains a free variable. In the first conjunct t_j is not bound, and in the second conjunct t_i is not bound. Hence, the representation in (33), which necessarily yields (38), must be ruled out.

Instead of (33), I present the structure in (39), in which the two *wh*-phrases share their trace.

(39)

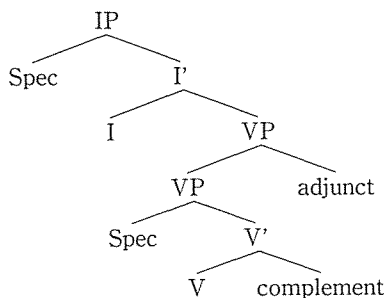


Now I propose the condition on constituents that share their trace.

(40) Constituents moved from the shared material in RNR can share their trace if they originate in the same syntactic position.

The point is that it is syntactic position rather than semantic function that determines the availability of the shared trace. The sentence structure I assume is (41).

(41)



An adjunct can share its trace with another adjunct, but not with a complement or an element in IP-Spec.⁶

Now look at (32). Both of the *wh*-phrases are VP adjuncts. Thus, the two *wh*-phrases can share their trace, as in (39). It is not clear how (39) is derived. It is debatable whether the *wh*-phrases are actually moved, or they are base-generated in CP-Spec. I will leave the matter open. But it is certain that we must admit sharing a trace in an RNR construction. Sharing a trace does not take place only in a conjoined *wh*-question. In (42), which are clearly examples of RNR, the two adjunct *wh*-phrases should share their trace.

(42) a. I can tell you **when**, but I can't tell you **why**, he left me.

(Bresnan 1974 : 618)

b. I was reminiscing about **where**, and Fred was reminiscing about **when**, you could get a got dog for 10 cents.

(McCawley 1988 : 433)

The same is true for relative clauses.

(43) The reason **for which** and the considerations **despite which** Wilson called for a declaration of war are poorly understood.

(McCawley 1988 : 433)

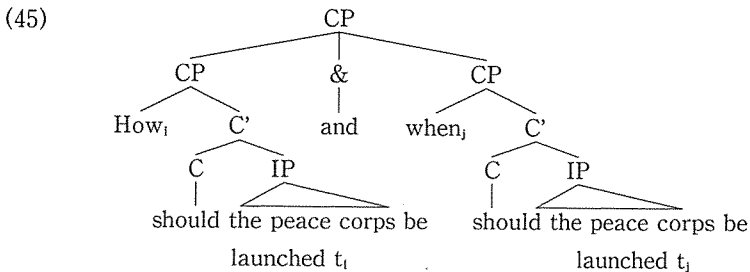
Then, if the VP internal subject hypothesis is correct, the two subjects in an RNR construction should share their trace in the shared VP because they

originate in the same syntactic position. This prediction is correct, as (44) shows.

- (44) **John** will and **Mary** already has [_{VP} *t* mailed the conference program to all of the presenters].

If sharing a trace is not possible, (42-44) should be ruled out for the same reason as (33) is ruled out.

Let us now return to the analysis of (39). Under the present analysis, the representation in (45) is derived from (39) at LF. This is a well-formed representation.



In (45) the indices of the traces are different. The change of indices is widely observed in elliptical constructions, as (46b) shows.

- (46) a. Chicken, she'll eat *t*, but ostrich, she won't ____.
 b. Chickeni, she'll eat *t*_i, but ostrichj, she won't eat *t*_j.

(Potsdam 1997 : 364)

Under my analysis, the two *wh*-phrases in a conjoined *wh*-question are not directly conjoined. It is the two CPs that are directly conjoined. The CPs are questions : hence, they belong to the same archicategory Question. Thus, the semantic restriction on coordination need not be weakened.

Now, consider (47). These examples crucially support my analysis. The speech of B in (47) is grammatical regardless of the conjunction of the two adjuncts that have different semantic functions. In (47B) the focused elements are topicalized.⁷

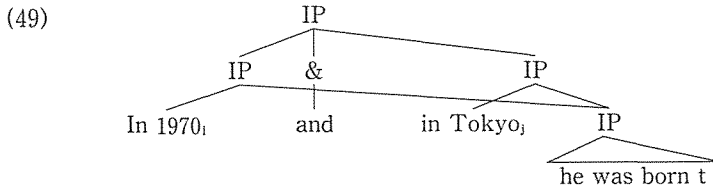
(47) A : When and where was he born ?

B : In 1970 and in Tokyo (he was born).

Note that (48) is ungrammatical.

(48) *He was born [in 1970 and in Tokyo].⁸

The grammaticality of (47B) can be predicted under my analysis. The structure of (47B) is (49), which is an RNR structure. In (49) both of the moved elements are adjuncts. Thus, they can share their trace.

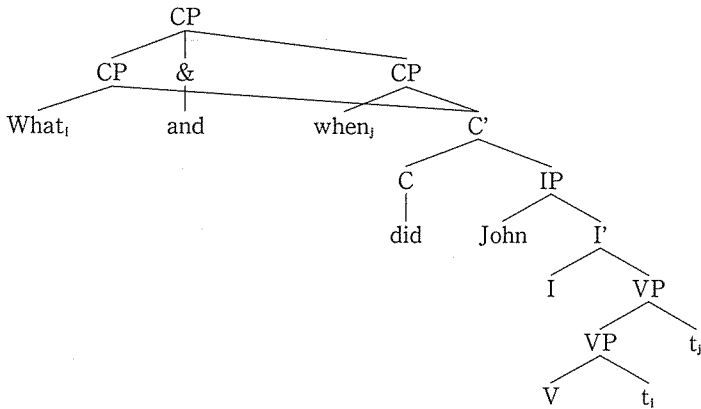


To sum up, the conjoined *wh*-questions in (1) are RNR constructions, whose structure is represented as in (39). The trace of the *wh*-phrases is shared.

Next, let us consider why the conjoined *wh*- questions in which the *wh*-phrases are an argument and an adjunct, given in (50), are ungrammatical. The syntactic position of an argument is different from that of an adjunct. An argument usually occurs in Spec-IP or the complement of V in (41). Hence, an argument *wh*-phrase and an adjunct *wh*-phrase can not share their trace. For example, the structure of (50) is (51), in which the traces of *what* and *when* occur without being shared. This structure is ruled out because the shared material contains non-shared materials. The representation in (51) leads to the LF representation in (52).

(50) *What and when did John buy ?

(51)



(52) * $[_{CP} \text{What}_i [_C \text{did John buy } t_i t_j]]$ and $[_{CP} \text{when}_j [_C \text{did John buy } t_i t_j]]$

The representation in (52) is ill-formed because there is a free variable in it. As a result, (50) is ungrammatical. The same line of account holds in (53-54), which are clearly RNR constructions.

(53) *I know who, but I don't know when, killed the man.

(54) *I can't tell you the place where and the man who I met

Under the present analysis that assumes that conjoined *wh*-questions are RNR constructions, we can explain the parallelism between (50) and (53-54) naturally. A similar parallelism of grammaticality is observed between (55a) and (55b).

(55) a. When and where did you see them ?

b. I can tell you when, but I can't tell you why, he left me.

The fact that both (50) and (53-54) are ungrammatical, and that both (55a) and (55b) are grammatical suggests that conjoined *wh*-questions are RNR constructions.

Next, let us consider how (20), which are given as evidence for Grimshaw's analysis, are explained. They are repeated here as (56).

(56) a. *I don't know whether and where you saw them.

- b. *When and what did John hit Bill with ?

In (56a) the interrogative complementizer *whether* and the adjunct *where* are apparently conjoined. There are two possible structures for (56a) : (57a), in which the shared material of RNR contains the trace of *where*, and (57b), in which it does not. (57a) is not allowed because the shared material contains the non-shared element *t*.

- (57) a. I don't know whether and where you saw them *t*.
 b. I don't know whether and where you saw them.

The LF representation of (57a) is (58).

- (58) I don't know whether [you saw them *t*] and where [you saw them *t*].

In (58) the variable in the first conjunct is not bound because *whether* is not an operator.

On the other hand, (57b) yields the LF representation in (59).

- (59) I don't know whether [you saw them] and where [you saw them].

In (59) *where* does not bind any variable. Therefore, (56a) is ruled out because both of the possible structures are not allowed.

Let us turn to (56b). The LF representation is (60).

- (60) When [did John hit Bill with *t*] and what [did John hit Bill with *t*] ?

The representation in (60) is ruled out because *when* can not serve as the antecedent of the trace.

3.3 Conjoined Argument *Wh*-Phrases

Now, let us consider the grammaticality of (5), repeated here as (61). Notice that the conjoined *wh*-phrases belong to the same archicategory Name. Thus, the conjunctions in (61) are allowed.

- (61) a. Who and whose brother did you like ?
 b. Who and what did you see ?

Therefore, I assume that the two *wh*-phrases are directly conjoined in these

examples, though adjunct-conjoined *wh*-questions are RNR constructions. The evidence for this analysis is that (62), in which the conjoined argument *wh*-phrases are in situ, is allowed.

(62) Who saw [whom and whose brother] ?

As I pointed out above, the conjunction of adjunct *wh*-phrases in situ is impossible, as in (63).

(63) a. *Who saw the suspect [where and when] ?

b. *Who did the witness see [when and where] ?

These examples suggest that the conjunction of adjunct *wh*-phrases that bear different semantic functions (or belong to different archicategories) is impossible. I regarded the ungrammaticality of (63) as evidence against Grimshaw's analysis. The example in (62) shows that the conjunction of argument *wh*-phrases is allowed if they have the same semantic function. Thus, nothing forces us to analyze (61) as RNR constructions. In fact, we can easily account for (14), repeated as (64), under this analysis.

(64) Who and whose brother carried a bucket between themselves ?

Next, let us consider the ungrammaticality of (4), repeated here as (65). The structure of (65) is (66).

(65) *John asked who and what bought.

(66) John asked [_{CP} [_{DP} who and what]_{ij}] [_{IP} t_i bought t_j].

In this structure, either the subject trace or the object trace is not bound. Hence, (65) is ruled out.

If this analysis is correct, the actual structures of conjoined adjunct *wh*-phrases and conjoined argument *wh*-phrases are quite different, though they have a superficial resemblance.

In this paper I have assumed that the argument *wh*-phrases are directly conjoined in (61) because nothing rules out the conjunction of the two *wh*-phrases. However, it might be possible to analyze (61) as RNR. According to (40), a shared argument trace should be allowed, if moved arguments

originate in the same syntactic position. The examples in (67) show that this prediction is correct. The two *wh*-phrases originate in the same object position in each of (67).

- (67) a. The only person who you and who I admire is Walter Cronkite.
 b. I'll buy whatever books, and Mary will buy whatever records,
 you want to get rid of. (McCawley 1988 : 433, 532)

In (61b) the two *wh*-phrases originate in the object position. Thus, the *wh*-phrases can share their trace. If this analysis is correct, (61b) should have the same interpretation as the corresponding full question in (68). This prediction is correct. Both (61b) and (68) can have a pair-list reading.

(68) Who did you see and what did you see? — John and his picture.
 Both (61b) and (68) have the LF representation in (69) under the present analysis. Thus, both of them can have the same interpretation.

- (69) Who_i did you see t_i and what $_j$ did you see t_j ?

Next, consider the ungrammaticality of (65), repeated here as (70), under the analysis that regards (65) as an RNR construction. In this case, the reading is “John asked who bought what”.

- (70) *John asked who and what bought.

In (70), the two *wh*-phrases do not originate in the same syntactic position. *Who* is moved from the subject position, while *what* is moved from the object position. Thus, the traces can not be shared. That is, the shared material contains non-shared materials. This results in an ill-formed LF representation.

Under the present analysis, it is difficult to explain the grammaticality of (64). But we can not conclude that (64) is a question including conjoined *wh*-phrases rather than an RNR construction, because the same problem arises in (71), which is clearly an RNR construction.

- (71) John sold and Mary bought each other's textbook.

(Phillips 1996 : 49)

The grammaticality of (71) suggests that the anaphor *each other* is bound by *John* and *Mary*.

Judging from the fact that (62) is grammatical, it is certain that the conjunction of argument *wh*-phrases is allowed: hence, conjoined argument *wh*-phrases can be fronted. But there is no evidence that the examples in (61) are not RNR constructions. Therefore, these examples might have two structures: an RNR construction and a question including conjoined *wh*-phrases.

4. Conclusion

In this paper I have shown that there are two kinds of conjoined *wh*-phrases. I have distinguished between (72) and (73). In the first type, given in (72), the two adjunct *wh*-phrases are apparently conjoined. In the second type, given in (73), the two argument *wh*-phrases are conjoined.

(72) When and where did you see them ?

(73) Who and whose brother did you like ?

The crucial difference between (72) and (73) is given in (74) and (75).

(74) *Who saw them [when and where] ?

(75) Who liked [whom and whose brother] ?

The example in (74) shows that when the conjuncts have different semantic functions, the result is ungrammatical. That is, *when* and *where* can not be conjoined directly. From this consideration, I conclude that the example in (72) is an RNR construction. By contrast, the conjunction of argument *wh*-phrases is allowed, as in (75). Nothing forces us to analyze (73) as RNR. Thus, I conclude that the example in (73) is a question including conjoined *wh*-phrases.

Footnotes

¹ The examples in (1c-f) are picked up from the Brown corpus.

² Haraguchi (1983 : 47) points out that (i) is not allowed though the two arguments originate in the same syntactic position. In (i) the same lexical items are conjoined.

(i) *What and what did you do after that ?

The same is true for the conjunction of adjuncts.

(ii) *Where and where did you go yesterday ?

Generally speaking, the conjunction of the same lexical items is not allowed.

(iii) *A boy and a boy came to see me yesterday.

For the ungrammaticality of these examples, see Haraguchi (1983). I will not discuss these examples.

³ In English, multiple *wh*-fronting is not allowed if two *wh*-phrases are not conjoined, as in (i). This is because a C head can not check two *wh*-features in English.

(i) *Where, when did you see them ?

But this is not a crucial problem with Grimshaw's analysis. Let us consider (ii). In (ii) each of the Case-features in the conjoined DPs should have been checked. It is certain that (ii) does not raise any problems in terms of feature checking, though the mechanism of feature checking in coordinate structures is not clear.

(ii) [[_{DP} John] and [_{DP} Mary]]went skiing.

Therefore, (17) does not raise any problems in terms of feature checking, just as in (ii).

⁴ Identity of syntactic category is not a necessary condition on conjunction. In (i) an adverb and a PP are conjoined.

(i) a. We walked [_{Adv} slowly] and [_{PP} with great care].

b. We wanted to leave [_{Adv} tomorrow] and [_{PP} on Tuesday].

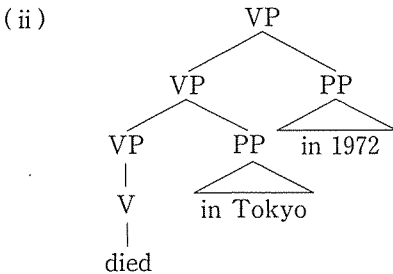
(Goodall 1987 : 44)

In each of these examples, the conjoined constituents have the same semantic function.

⁵ See McCawley (1982), Phillips (1996) for further evidence that supports the three dimensional approach to RNR.

⁶ A sentence can contain two kinds of adjuncts, as in (i). The relevant structure is given in (ii).

(i) John died in Tokyo in 1972.



I assume that the two adjunct positions in (ii) have the same status with regard to the condition in (40). That is, all adjuncts occupy the same syntactic position as far as the condition in (40) is concerned. I can not present crucial evidence for this assumption. But the examples in (iii) suggest that the two adjunct positions have the same grammatical status.

- (iii) a. When did John die in Tokyo ?
- b. Where did John die in 1972 ?

⁷ Gundel (1974) argues that there are two types of topicalization. One is topic topicalization, given in (i). The other is focus topicalization, given in (ii).

- (i) a. What about John ?
- b. John, he CALLED.

- (ii) a. Who did he call ?
- b. JOHN, he called.

The example in (51) is the latter type.

⁸ The example in (i) is grammatical because the two adjuncts are not conjoined directly.

(i) I was born in 1970, and ~~I was born~~ in Tokyo.

By contrast, in (48) the two adjuncts are conjoined directly. The example in (47B) can not be derived by a deletion rule, because ellipsis can not take place in the first conjunct as in (ii).

(ii) *In 1970 ~~I was born~~, and in Tokyo I was born.

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Synopsis

A Note on Conjoined *Wh*-Questions

By Atsushi Takekoshi

This paper discusses the syntactic structure of the sentences that include conjoined *wh*-phrases, as given in (1). I call these sentences *conjoined wh-questions*.

- (1) a. When and where did you see them ?
 b. When and with what did John hit Bill ?

Browne (1972) and Grimshaw (1978) observes that conjoined *wh*-questions are acceptable only when both of the *wh*-phrases are optional elements, that is, adjuncts. The examples in (2) show that the conjunction of an argument *wh*-phrase and an adjunct *wh*-phrase is not allowed. The example in (3) shows that the conjunction of two argument *wh*-phrases that do not originate in the same syntactic position are not allowed.

- (2) a. *What and how hard did John kick ?
 b. *What and when did he give you ?

- (3) *John asked who and what bought.

If two argument *wh*-phrases originate in the same syntactic position, they can be conjoined, as in (4).

- (4) a. Who and whose brother did you like ?
 b. Who and what did you see ?

In (4) both *who* and *whose brother* are the objects of the same verb.

In this paper, I propose that examples like (1) are Right Node Raising (RNR) constructions, while examples like (4) are questions in which conjoined *wh*-phrases are fronted. In other words, (1) and (4) are different constructions, though they have a superficial resemblance. The ungrammaticality of (2-3) is derived from constraints on RNR.

If we analyze (1) as questions in which conjoined *wh*-phrases are fronted, we

must admit the conjunction of elements that do not belong to the same semantic category. In (1), for example, *where* is a locative, and *when* is a temporal. But there is evidence to show that the conjunction of elements that do not belong to the same semantic category is not allowed. The RNR approach can explain the behavior of the conjoined *wh*-questions in (1) without using such conjunctions.

On the other hand, in (4) the conjoined *wh*-phrases belong to the same semantic category. Thus, nothing forces us to analyze (4) as RNR.