

ON COORDINATED MULTIPLE *WH*-QUESTIONS^{*}

TORU ISHII
Meiji University

1 Introduction

This paper discusses a hitherto underexplored type of multiple *wh*-question in Japanese where *wh*-elements with different grammatical functions and categories are coordinated:

- (1) a. (Ittai) **dare-ga sosite nani-o** Bill-ni nomaseta no?
(the hell) who-Nom and what-Acc Bill-Dat made.drink Q?
Lit. 'Who (the hell) and what made Bill drink?'
b. (Ittai) **dare-ga sosite nani-o** Mary-ni ageta no?
(the hell) who-Nom and what-Acc Mary-Dat gave Q
Lit. 'Who (the hell) and what gave to Mary?'
- (2) a. (Ittai) **nani-o sosite ikura-de** kimi-wa katta no?
(the hell) what-Acc and at-what.price you-Top bought Q
Lit. 'What (the hell) and at what price did you buy?'
b. (Ittai) **nani-o sosite dokode** kimi-wa tabeta no?
(the hell) what-Acc and where you-Top ate Q
Lit. 'What (the hell) and where did you eat?'
- (3) a. (Ittai) **itu sosite dokode** kimi-wa John-ni atta no?
(the hell) when and where you-Top John-Dat met Q
Lit. 'When (the hell) and where did you meet John?'

^{*} This is a revised version of the paper presented at FAJL 7. I would like to thank the audience at the conference for helpful comments and suggestions. I would also like to thank Hiroshi Aoyagi for help with the Japanese data, Duk-Ho An and Daeho Chung for help with the Korean data, and Hironobu Kasai for helpful discussions. Remaining errors and omissions are, of course, the sole responsibility of the author. This work is supported in part by the Japan Society for the Promotion of Science under grant Scientific Research C 26370578.

- b. (Ittai) **itu sosite naze** kimi-wa motokare-ni atta no?
 (the hell) when and why you-Top ex-boyfriend-Dat met Q
 Lit. 'When (the hell) and why did you meet your ex-boyfriend?'

In (1), two *wh*-arguments with different grammatical functions are conjoined. (2a, b) show cases where a *wh*-argument and a *wh*-adjunct are conjoined. In (3), two *wh*-adjuncts are conjoined. I refer such questions as coordinated multiple *wh*-questions (CWHs).

It has been pointed out by, among others, Haida and Repp (2011) and Citko and Gračanin-Yusek (2013) that there is a crosslinguistic variation with availability of CWHs between multiple *wh*-fronting (MWF) languages and non-MWF languages. Specifically, there is a restriction on CWHs in non-MWF languages like English and German; although non-MWF languages allow a CWH with a *wh*-argument and a *wh*-adjunct and the one with two *wh*-adjuncts as shown in (5, 6), they do not allow a CWH with two *wh*-arguments as exemplified by (4):

- (4) a. ***Who and what** bought?
 b. ***Who and what** gave to Mary?
 c. ***Wem und was** hast du vorgestellt? (German)
 who and what have you shown
 Lit. 'Who and what have you shown?' (Haida and Repp 2011: 379)
- (5) **What and why** did you eat? (Citko and Gračanin-Yuksek 2013: 11)
- (6) **When and where** did you see John? (Whitman 2004: 404)

MWF languages like Bulgarian, Polish, and Russian, on the other hand, allow a CWH with two *wh*-arguments as shown in (7):

- (7) a. **Koj i kakvo e** kupil? (Bulgarian)
 who and what Aux bought
 Lit. 'Who and what bought?' (Citko and Gračanin-Yuksek 2013: 15)
 b. **Kto i kogo** videl? (Russian)
 who and whom saw
 Lit. 'Who and whom saw?' (Haida and Repp 2011: 373)

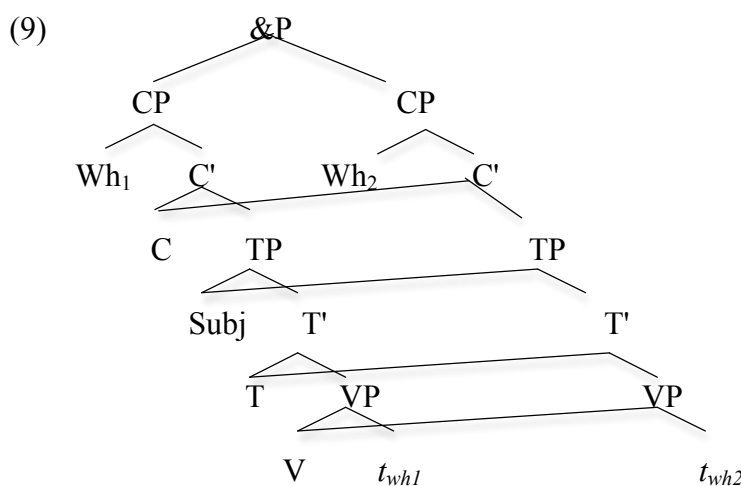
Although their analyses differ in detail, they agree that while MWF languages allow a mono-clausal structure of a CWH, non-MWF languages only allow a bi-clausal structure. They claim that a CWH of two *wh*-arguments can only be derived from a mono-clausal structure but not from a bi-clausal structure, thereby attempting to account for the crosslinguistic variation.

Let us first look at their mono-clausal derivation of CWHs in MWF languages. It has been claimed that a mono-clausal derivation of CWH is parallel to a regular multiple *wh*-question with additional insertion of a coordinator whether it merely intervenes between the two *wh*-phrases as shown in (8a) (Merchant 2007) or it results in a conjunction phrase as shown in (8b) (Zhang 2007; Gribanova 2009; Haida and Repp 2011; Citko and Gračanin-Yusek 2013):

- (8) a. [_{CP} *wh*₁ & *wh*₂ [_{TP} ... *t*₁ ... *t*₂ ...]]
 b. [_{CP} [&P *wh*₁ & *wh*₂] [_{TP} ... *t*₁ ... *t*₂ ...]]

Putting aside the derivational details, there is a single C head triggering two instances of overt *wh*-movement in (8). Only MWF languages, which have a C head triggering multiple overt *wh*-movement, allow such a mono-clausal derivation of CWHs. It then follows that CWHs of *wh*-arguments can be derived from a mono-clausal structure just like regular multiple *wh*-questions in MWF languages. This paper adopts this view that a CWH in MWF languages is derived from a mono-clausal structure with multiple overt *wh*-movement.

Turning to their bi-clausal derivation of CWHs with two *wh*-arguments in non-MWF languages, two types of analysis have been proposed in the literature. Citko and Gracanin-Yuksekk (2013) propose a multi-dominant structure analysis as represented in (9):



In (9), everything except the *wh*-phrase is shared, and the two *wh*-phrases never belong to the same clause. The two CPs are built in parallel, sharing a number of nodes. Finally, the two CPs are conjoined under a single root node. Since the *wh*-phrases are not shared, CWHs are derived by a single instance of *wh*-movement per clause, which makes CWHs available in non-MWF languages. Under the multi-dominant structure analysis, CWHs with two *wh*-arguments like (4) would be ruled out, since they have as their sources equally ungrammatical sentences like (10), where there is a missing argument in each clause:

(10)*[Who gave to Mary] and [what did give to Mary]?

Kazenin (2002) and Liptak (2003), on the other hand, propose a backward sluicing analysis of CWHs with two *wh*-arguments in non-MWF languages, as represented in (11):

- (11) a. [CP *wh*₁ [TP... *t*₁... *pro*₂ ...]] and [CP *wh*₂ [TP... *pro*₁ ... *t*₂ ...]]
 b. [CP *wh*₁ [~~TP... *t*₁... *pro*₂ ...~~]] and [CP *wh*₂ [TP... *pro*₁ ... *t*₂ ...]]

Under their backward sluicing analysis of CWHs with two *wh*-arguments, empty pronominals are inserted to the argument positions of the first and second conjuncts as shown in (11a). The TP in the first conjunct is elided by backward sluicing as shown in (11b). Even if small *pro* is available in a language, they argue that structure (11) would be ruled out, since it involves a cataphoric dependency between the *wh*-phrase in the first conjunct and the empty pronominal in

the second conjunct, and such cataphoric use of pronominals is impossible when the antecedent of a pronominal is a *wh*-phrase.

Contrary to what they claim, however, I observe that although Japanese is a *wh*-in-situ language, *i.e.* a non-MWF language, and thus only has a bi-clausal structure, it allows a CWH with two *wh*-arguments as shown in (1). It should be noted that in such coordination as (1-3), conjuncts must be *wh*-phrases under normal prosody as shown in (12). Furthermore, the conjoined *wh*-phrases cannot appear in-situ as shown in (13):

- (12)***John-ga sosite wain-o Mary-ni ageta**
 John-Nom and wine-Acc Mary-Dat gave
 Lit. 'John₁ and wine₂, [_{*t*}₁ gave _{*t*}₂ to Mary].'

- (13)??John-wa [Bill-ga (ittai) **dare-ni sosite nani-o ageta koto**]-o
 John-Top Bill-Nom (the hell) who-Dat and what-Acc gave fact]-Acc
 sitteiru no?
 know Q
 Lit. 'John knows that Bill gave who (the hell) and what?'

This paper proposes that the existence of scrambling in Japanese enables a CWH with two *wh*-arguments such as (1) to be derived from a bi-clausal structure with backward sluicing, thereby accounting for the crosslinguistic variations regarding CWHs among non-MWF languages. If the present analysis is on the right track, it shows that Japanese, which has been assumed to be a uniform *wh*-in-situ language, has overt *wh*-movement and superiority effects under limited circumstances. The organization of this paper is as follows. Section 2 presents evidence for a bi-clausal structure of CWHs in Japanese. Section 3 argues that a Japanese CWH with two *wh*-arguments can be derived from a bi-clausal structure through backward sluicing thanks to the existence of scrambling in the language. Section 4 presents further evidence for the present analysis. Section 5 makes a concluding remark.

2 Japanese CWHs as Bi-Clausal

There is evidence to show that Japanese CWHs like (1-3) are bi-clausal in that they involve coordination of two *wh*-questions but not of two *wh*-phrases. First, the conjunct *sosite* 'and' can conjoin (interrogative) clauses, but not phrases, as the contrast between (14a) and (14b) shows. In (14a), the two *wh*-questions *dare-ga banana-o tabeta no* 'who ate bananas' and *dare-ga ringo-o tabeta no* 'who ate apples' are conjoined. In (14b), on the other hand, the two nominal phrases *banana* 'banana' and *ringo* 'apple' are conjoined. It should be noted that (14b) becomes acceptable if *sosite* 'and' is replaced by phrasal coordinator *to* 'and' as shown in (15):

- (14) a. [Dare-ga banana-o tabeta no], *sosite* [dare-ga ringo-o tabeta no]
 who-Nom banana-Acc ate Q and who-Nom apple-Acc ate Q
 'Who ate bananas, and who ate apples?'
 b.?* John-wa Mary-ni [banana *sosite* ringo]-o ageta no
 John-Nom Mary-Dat banana and apple-Acc gave Q
 'Did John gave Mary bananas and apples?'

- (15) John-wa Mary-ni [banana to ringo]-o ageta no
 John-Nom Mary-Dat banana and apple-Acc gave Q
 'Did John gave Mary bananas and apples?'

These facts indicate that what is conjoined in (1-3) is not *wh*-phrases but *wh*-questions.

Second, sentence final particle *kasira* 'I wonder' may appear at the end of each conjunct in CWHs as exemplified by (16). This also indicates that CWHs like (1-3) involve clausal coordination. This is in contrast with phrasal coordination with *to* 'and' such as (17), where sentence final particle *kasira* 'I wonder' cannot appear at the end of a conjunct:

- (16) Dare-ni **kasira** sosite nani-o Mary-ga kihusita no **kasira**?
 who-Dat **Part** and what-Acc Mary-Nom contributed Q **Part**?
 Lit. 'Whom and what did Mary contribute to (I wonder).'

- (17)*John-ga [banana **kasira** to ringo]-o tabeta **kasira**
 John-Nom banana **Part** and apple-Acc ate **Part**
 Lit. 'John ate bananas and apples (I wonder).'

3 A Proposal

Let us consider how a Japanese CWH with two *wh*-arguments is derived, taking (1b) (repeated here as (18)) as an example:

- (18) (Ittai) **dare-ga sosite nani-o** Mary-ni ageta no?
 (the hell) who-Nom and what-Acc Mary-Dat gave Q
 Lit. 'Who (the hell) and what gave to Mary?'

When we construct the two conjuncts, we come to stage (19):

- (19) a. [[_{VP} Mary-ni nani-o ageta] T]
 Mary-Dat what-Acc gave
 b. [_{TP} dare-ga [[_{VP} Mary-ni nani-o ageta] T]]
 who-Nom Mary-Dat what-Acc gave

At this stage, we apply sideward movement of *dare-ga* 'who-Nom' from Spec-T of the second conjunct to Spec-T of the first conjunct as shown below:

- (20) a. [_{TP} **dare-ga₁** [[_{VP} Mary-ni nani-o ageta] T]]
 who-Nom Mary-Dat what-Acc gave
 b. [_{TP} **t₁** [[_{VP} Mary-ni nani-o ageta] T]]
 Mary-Dat what-Acc gave

In the first conjunct, I argue that overt *wh*-movement of *dare-ga* 'who-Nom' to Spec-C takes place as shown in (21), although Japanese has been assumed to be a *wh*-in-situ language:

- (21) [CP **dare-ga**₁ [TP *t'*₁ [vP Mary-ni nani-o ageta]] C_[+Q]]
 who-Nom Mary-Dat what-Acc gave

I argue that this overt *wh*-movement follows from clausal typing advocated by Cheng (1991) and Chomsky (1995), which requires that a *wh*-question should be overtly marked either by a Q-particle in C or fronting of a *wh*-phrase to the minimal domain of C, including Spec-C. In (21), since the interrogative C is null, the *wh*-phrase *dare-ga* 'who-Nom' undergoes overt *wh*-movement to Spec-C in order to satisfy clausal typing. In the second conjunct, on the other hand, C is overtly realized as Q-particle *no*; clausal typing does not trigger overt *wh*-movement of the *wh*-phrase *nani-o* 'what-Acc' to Spec-C. I argue that *nani-o* 'what-Acc' instead undergoes scrambling and adjoins to TP as shown in (22). This enables the derivation to satisfy a parallelism condition on ellipsis, which we will explicate in detail later. It should be noted that given Chomsky's (2001) Phase Impenetrability Condition (PIC) (23), this scrambling moves from its base position to the TP-adjoined position in one swoop, without moving into vP-edge:

- (22) [CP [TP **nani-o**₃ [TP *t*₁ [vP Mary-ni *t*₃ ageta]]] *no*]
 what-Acc Mary-Dat gave Q

- (23) The Phase Impenetrability Condition (PIC) (Chomsky 2001: 14)
 In [ZP Z ... [HP α [H' H YP]]], where HP is a phase and ZP is the next phase, the domain of H is not accessible to operations at ZP, where phases are vP and CP.

Then, the two CP conjuncts are merged. I assume Munn's (1993) coordinate structure (24), in which the first conjunct XP₁ appears in the regular position where a single-term phrase would, and the second conjunct XP₂ is the complement in &P, which is adjoined to the first conjunct. The structure of the conjoined CPs is represented in (25):

- (24)
-
- ```

graph TD
 XP1_1[XP1] --- XP1_2[XP1]
 XP1_1 --- AP[&P]
 AP --- amp[&]
 AP --- XP2[XP2]

```

- (25) [CP [CP **dare-ga**<sub>1</sub> [TP *t'*<sub>1</sub> [vP Mary-ni nani-o ageta]]] C<sub>[+Q]</sub>]  
           who-Nom                      Mary-Dat what-Acc gave  
       [&P *sosite* [CP [TP **nani-o**<sub>3</sub> [TP *t*<sub>1</sub> [vP Mary-ni *t*<sub>3</sub> ageta]]] *no*]]]  
           and                      what-Acc                      Mary-Dat        gave        Q

Given May's (1985) category/segment distinction, *dare-ga* 'who-Nom' c-commands not only its trace in the first conjunct *t'*<sub>1</sub> but also its trace in the second conjunct *t*<sub>1</sub>. This is confirmed by the fact that a *wh*-phrase in Spec-C of the first conjunct can license a variable in the second conjunct:

- (26) **Doitu**<sub>1</sub>-ga            *sosite* nani-o        **soitu**<sub>1</sub>-no        hahaoya-ni ageta *no*?  
       which guy-Nom and    what-Acc    that guy-Gen    mother-Dat    gave Q  
       Lit. 'Which guy<sub>1</sub> and what<sub>2</sub> [*t*<sub>1</sub> gave *t*<sub>2</sub> to his<sub>1</sub> mother]?'

In (26), the *wh*-phrase *doitsu* 'which guy' licenses the pronoun *soitu* 'that guy' as a bound variable. In the covert component, *nani-o* 'what-Acc' in the first conjunct moves to Spec-C:

- (27) [CP [CP dare-ga<sub>1</sub> [ **nani-o**<sub>2</sub> [TP *t*<sub>1</sub> [vP Mary-ni *t*<sub>2</sub> ageta]]] C<sub>[+Q]</sub>]  
           who-Nom what-Acc Mary-Dat gave  
           [&P sosite [CP [TP nani-o<sub>3</sub> [TP *t*<sub>1</sub> [vP Mary-ni *t*<sub>3</sub> ageta]]] no]]]  
           and what-Acc Mary-Dat gave Q

I assume Richards' (2001) Principle of Minimal Compliance (PMC) (28), according to which an ill-formed dependency in isolation can be saved by the presence of a well-formed dependency with respect to a particular constraint so that the constraint needs to be satisfied once per clause:

- (28) The Principle of Minimal Compliance (PMC)  
 If the tree contains a dependency headed by H which obeys constraint C, any syntactic object G which H "immediately c-commands" can be ignored for purpose of determining whether C is obeyed by other dependencies. (Richards 2001: 199)

In the first conjunct of (27), overt movement of *dare-ga* 'who-Nom' to Spec-C satisfies the PIC (23). According to the PMC (28), covert movement of *nani-o* 'what-Acc' to Spec-C of the same clause can ignore the PIC. It then follows that *nani-o* 'what-Acc' in the first conjunct does not need to move into vP-edge on its way to Spec-C, and thus cannot do so due to an economy condition which bans a superfluous step in a derivation. It should be noted that in the second conjunct, the scrambled *wh*-phrase *nani-o* 'what-Acc', which is adjoined to TP and thus not dominated by TP, is in the minimal domain of Q-particle *no*. The scrambled *wh*-phrase *nani-o* 'what-Acc' can be associated with the interrogative C without covert movement into Spec-C.

We then apply backward sluicing to (27). I assume with Fox and Lasnik (2003) and Lasnik (2010) (contra Merchant 2001) that formal parallelism is required for ellipsis. More specifically, I adopt their parallelism condition on ellipsis (29) (Fox and Lasnik 2003: 149):

- (29) The Parallelism Condition on Ellipsis  
 A parallel dependency must be established in the antecedent and elided clause.

Before explicating how backward sluicing applies to (27), let us look at how their parallelism condition on ellipsis works, taking the English 'ordinary' sluicing case (30) as an example:

- (30) Fred said that I talked to a certain girl, but I don't know which girl [~~Fred said that I talked to *t*~~].

In (30), there is a mismatch between the antecedent and the elided clause, *i.e.* between the indefinite *a certain girl* in the antecedent clause and the trace of the *wh*-phrase *which girl* in the elided clause. Fox and Lasnik assume with Chung, et. al. (1995) that an indefinite in the antecedent of sluicing must be bound by an existential closure in a way that is parallel to the *wh*-dependency in the elided clause. It then follows that we get semantic representation (31):

- (31)  $\exists x$  [Fred said that I talked to *x*], but I don't know **for which *y*, *y* a girl** [Fred said that I talked to *y*].





If the present analysis is on the right track, it shows that Japanese has a sluicing operation, though the ‘ordinary’ sluicing construction could be a cleft construction, as argued by, among others, Fukaya and Hoji (1999) and Hiraiwa and Ishihara (2002).

## 4 Further Evidence

### 4.1 Crosslinguistic Variation with CWHs among Non-Multiple-*Wh*-Fronting Languages

First, our analysis can explain the crosslinguistic variation with CWHs among non-MWF languages. Recall that it is crucial in our analysis of Japanese CWHs that scrambling of a *wh*-phrase in the second conjunct does not leave an intermediate trace in the  $\nu$ P-edge, yielding a semantic representation that satisfies the parallelism condition on ellipsis. In English CWHs with two *wh*-arguments like (4b) (repeated here as (35)), however, scrambling is not available:

(35) \***Who and what** gave to Mary?

The PIC requires the *wh*-phrase *what* in the second conjunct to undergo overt *wh*-movement to  $\nu$ P-edge as its intermediate landing site as shown in (36). Recall that in the first conjunct, covert movement of the *wh*-phrase in-situ *what* to Spec-C can ignore the PIC (23) given the PMC (28), and thus does not land into  $\nu$ P-edge due to the economy condition that bans any superfluous step:

(36) [<sub>CP</sub> [<sub>CP</sub> who<sub>1</sub> [<sub>what</sub><sub>2</sub> [<sub>TP</sub> *t*<sub>1</sub> [ <sub>$\nu$ P</sub> gave *t*<sub>2</sub> to Mary]]]]] [&P and [<sub>CP</sub> *what*<sub>3</sub> [<sub>TP</sub> *t*<sub>1</sub> [ <sub>$\nu$ P</sub> *t*<sub>3</sub> gave *t*<sub>3</sub> to Mary]]]]]

In (36), there is an intermediate trace *t*<sub>3</sub> in the antecedent clause but not in the elided clause. Fox and Lasnik crucially claim that intermediate traces are relevant for parallelism. (36) does not lead to a semantic representation that satisfies the parallelism condition on ellipsis (29) due to the intermediate trace *t*<sub>3</sub> in the  $\nu$ P-edge of the antecedent clause. Backward sluicing cannot apply; there is no way of deriving English CWHs with two *wh*-arguments like (35). We can correctly predict that CWHs with two *wh*-arguments are available in Japanese but not in English.

This analysis predicts that CWHs with two *wh*-arguments are possible in Korean, which is a *wh*-in-situ language with scrambling, but not in Chinese, a *wh*-in-situ language without scrambling. This prediction is borne out as exemplified by (37) and (38):

(37) **nwu-ka kuliko mwues-ul** Mary-eykey cwu-ess ni? (Korean)  
 who-Nom and what-Acc Mary-Dat gave Q  
 Lit. 'Who and what gave to Mary?' (p.c. Duk-Ho An, Daeho Chung)

---

(ii) leads to a semantic representation which satisfies the parallelism condition. Forward sluicing applies, eliding TP in the second conjunct; this yields (i). I leave a detailed discussion of postverbal CWHs for future research.

<sup>2</sup> CWHs do not have a pair-list reading, but first ask for the identity of a single *wh*-phrase and then for the pairing. (18), for example, is interpreted as 'who gave something to Mary, and what is it?', which does not directly follow from the present analysis. We could claim, however, that since the elided TP must contain given information, the *wh*-phrase *nani-o* 'what-Acc' in the elided TP gets devoid of its focus property and thus interpreted as an indefinite.

<sup>3</sup> See Kasai (to appear), which has independently proposed an ellipsis approach to Japanese CWHs, but in implementations different from the present paper.

- (38)\***Shei yiji shenme** du le? (Chinese)  
**who and what** read Asp  
 Lit. 'Who and what read?'

## 4.2 Mixed CWHs with Obligatorily Transitive Verbs

Second, there is a crosslinguistic variation with mixed CWHs, *i.e.* CWHs with a *wh*-argument and a *wh*-adjunct. In English, mixed CWHs are only possible with optionally transitive verbs like *eat* and *sing*, as shown in (39). Mixed CWHs with obligatorily transitive verbs like *devour* and *buy* are deviant, as exemplified by (40) (Citko and Gračanin-Yuksek 2013: 11):

- (39) a. **What and why** did you eat? (=5)  
 b. **What and where** did you sing?
- (40) a. \***What and why** did you devour?  
 b. \***What and where** did you buy?

In MWF languages, mixed CWHs with obligatorily transitive verbs are possible:

- (41) a. **Kakvo i kak** kupil Ivan? (Bulgarian)  
 what and how bought Ivan  
 Lit. 'What and how did Ivan buy?' (Citko and Gračanin-Yuksek 2013: 15)
- b. **Sto i kogda** ty podaril Marii? (Russian)  
 what and when you gave.present Mary  
 Lit. 'What and when did you give a present to Mary?' (Haida and Repp 2011: 375)

(41) can be accounted for by the previous analyses, where CWHs in MWF languages are derived from a mono-clausal structure by means of MWF. I observe, however, that Japanese also allows CWHs with obligatorily transitive verbs like (42) although it is a non-MWF language:

- (42) (Ittai) **nani-o sosite ikura-de** kimi-wa katta no? (=2)  
 (the hell) what-Acc and at-what-price you-Top bought Q  
 Lit. 'What and at what price did you buy?'

This crosslinguistic variation with mixed CWHs among non-MWF languages follows from our analysis. Let us first consider Japanese mixed CHWs with obligatorily transitive verbs, taking (42) as an example. Its LF representation (43) yields semantic representation (44):

- (43) [CP [CP nani-o<sub>1</sub> [ikura-de<sub>2</sub> [TP (Elided Clause) kimi-wa [<sub>VP</sub> t'<sub>1</sub> t<sub>2</sub> katta]]] C<sub>[+Q]</sub>]  
           what-Acc at-what-price you-Top bought  
   [&P sosite [CP [TP ikura-de<sub>3</sub> [TP (Antecedent Clause) kimi-wa [<sub>VP</sub> t<sub>1</sub> t<sub>3</sub> katta]]] no]]]  
           and at-what-price you-Top bought Q

- (44) **For which x, x a thing [for which y, y a price [you bought x at y]] [and [for which z, z a price [you bought x at z]]]**

(44) satisfies the parallelism condition on ellipsis (29); backward sluicing applies at PF. Hence, (42) is acceptable. Turning to English mixed CWHs with obligatorily transitive verbs, let us consider (40a) as an example. Its LF representation is (45):

- (45) [<sub>CP</sub> [<sub>CP</sub> *what*<sub>1</sub> [<sub>why</sub><sub>2</sub> [<sub>TP</sub> you [<sub>VP</sub> *t''*<sub>1</sub> [devour *t'*<sub>1</sub> *t*<sub>2</sub>]]]]] [&P and [<sub>CP</sub> *why*<sub>3</sub> [<sub>TP</sub> you [<sub>VP</sub> *t'*<sub>3</sub> [devour *t*<sub>1</sub> *t*<sub>3</sub>]]]]]]]

This results in semantic representation, where the parallelism condition (29) is not satisfied due to the intermediate traces *t''*<sub>1</sub> and *t'*<sub>3</sub> left by overt *wh*-movement of *what* in the first conjunct and that of *why* in the second conjunct. Backward sluicing cannot apply; (40a) is deviant.

### 4.3 Word Order Restrictions between Conjoined *Wh*-Phrases

Finally, there is a word order restriction between conjoined *wh*-arguments as the contrast between (18) (repeated here as (46)) and (47) shows:

- (46) (Ittai)    **dare-ga**    **sosite nani-o**    Mary-ni    ageta    no? (= (18))  
                  (the hell) who-Nom and    what-Acc Mary-Dat    gave    Q  
                  Lit. 'Who<sub>1</sub> (the hell) and what<sub>2</sub> [*t*<sub>1</sub> gave *t*<sub>2</sub> to Mary]?'  
  
 (47)?\*(Ittai)    **nani-o**    **sosite dare-ga**    Mary-ni    ageta    no?  
                  (the hell) what-Acc and    who-Nom Mary-Dat    gave    Q?  
                  Lit. 'What<sub>2</sub> (the hell) and who<sub>1</sub> [*t*<sub>1</sub> gave *t*<sub>2</sub> to Mary]?'

This contrast follows from superiority effects in the first conjunct under our analysis. Since our analysis claims that overt *wh*-movement takes place in the first conjunct to satisfy clausal typing, overt *wh*-movement of the subject *wh*-phrase *dare-ga* 'who-Nom' blocks that of the object *wh*-phrase *nani-o* 'what-Acc', as represented in (48):

- (48) [<sub>CP</sub> **dare-ga**<sub>1</sub> [<sub>TP</sub> *t'*<sub>1</sub> [<sub>VP</sub> Mary-ni    nani-o    ageta]] C<sub>[+Q]</sub>]  
                  who-Nom                                  Mary-Dat    what-Acc    gave

## 5 Conclusion

This paper has pointed out that Japanese, though it is a non-MWF language, allows CWHs with two *wh*-arguments and mixed CWHs with obligatorily transitive verbs. I have argued that the existence of scrambling enables these types of CWH to be derived from a bi-clausal structure with backward sluicing, thereby accounting for the crosslinguistic variations among non-MWF languages. If the present analysis is correct, it indicates that Japanese has overt *wh*-movement and the superiority effects under limited circumstances, which is contrary to the widely accepted view that Japanese is a uniform *wh*-in-situ language where no superiority effects emerge.

## References

- Cheng, Lisa. 1991. *On the typology of wh-questions*, Doctoral dissertation, MIT.
- Chomsky, Noam. 1995. *The minimalist program*, Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase, in *Ken Hale: A life in language*, ed. by Michael Kenstowicz, 1-52, Cambridge, MA: MIT Press.
- Citko, Barbara and Martina Gračanin-Yuksek. 2013. Towards a new typology of coordinated *wh*-questions, *Journal of Linguistics* 49.1, 1-32.
- Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and logical form, *Natural Language Semantics* 3, 1-44.
- Fox, Danny and Lasnik, Howard. 2003. Successive-cyclic movement and island repair: The difference between sluicing and VP-ellipsis, *Linguistic Inquiry* 34, 143-154.
- Fukaya, Teruhiko and Hajime Hoji. 1999. Stripping and sluicing in Japanese and some implications, *WCCFL* 22, 179-192.
- Giannakidou, Anastasia and Jason Merchant. 1998. Reverse sluicing in English and Greek, *The Linguistic Review* 15, 233-256.
- Gribanova, Vera. 2009. Structural adjacency and the typology of interrogative interpretations, *Linguistic Inquiry* 40, 133-154.
- Haida, Andreas and Sopia Repp. 2011. Mono-clausal question word coordinations across languages, *NELSI* 39.1, 361-374.
- Hiraiwa, Ken and Shinichiro Ishihara. 2002. Missing links: Cleft, sluicing, and "no da" construction in Japanese, *MIT Working Papers in Linguistics* 43, 35-54.
- Kasai, Hironobu. to appear. Coordinated *wh*-questions, *Proceedings of FLYM 1*.
- Kazenin, Konstantin. 2002. On coordination of *wh*-phrases in Russian, Ms., Tübingen University and Moscow State University.
- Lasnik, Howard. 2010. On ellipsis: Is material that is phonetically absent but semantically present or absent syntactically?, in *Memory, Mind and Language*, ed. by Hans Göttsche, Cambridge Scholars Publishing, 221-242.
- Lipták, Aniko. 2003. Conjoined questions in Hungarian, in *Multiple wh-fronting*, ed. by Cedric Boeckx and Kleantes Grohmann, 141-166, Amsterdam: John Benjamins.
- May, Robert. 1985. *Logical form: Its structure and derivation*, Cambridge, MA: MIT Press.
- Merchant, Jason. 2001. *The syntax of silence*, Oxford: OUP.
- Merchant, Jason. 2007. Spurious coordination in Vlach multiple *wh*-fronting, presented at the Mid-American Linguistic Conference, University of Kansas.
- Munn, Alan. 1993. *Topics in the syntax and semantics of coordinate structures*, Doctoral dissertation, MIT.
- Richards, Norvin. 2001. *Movement in language: Interactions and architectures*, Oxford: OUP.
- Whitman, Neal. 2004. Semantics and pragmatics of English verbal dependent coordination, *Language* 80, 403-434.
- Zhang, Niina. 2007. The syntactic derivations of two paired dependency constructions, *Lingua* 117, 2134-2158.

Toru Ishii  
 School of Arts and Letters, Meiji University  
 1-1 Kandasurugadai, Chiyoda-ku, Tokyo 101-8301 JAPAN  
 tishii@kisc.meiji.ac.jp