ON COORDINATED MULTIPLE WH-QUESTIONS*

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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 nomasete 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?'

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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 Gracanin-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 Gracanin-Yusek 2013):

(8) a. [CP wh₁ & wh₂ [TP ... t₁ ... t₂ ...]]
   b. [CP [&P wh₁ & wh₂] [TP ... t₁ ... t₂ ...]]
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-Yuksek (2013) propose a multi-dominant structure analysis as represented in (9):

\[
(9) \quad \text{CP} \quad \& \quad \text{CP} \\
\quad \text{Wh}_1 \quad C' \quad \text{Wh}_2 \quad C' \\
\quad C \quad \text{TP} \quad \text{TP} \\
\quad \text{Subj} \quad T' \quad T' \\
\quad T \quad \text{VP} \quad \text{VP} \\
\quad V \quad t_{wh1} \quad t_{wh2}
\]

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:

\[(10)^* [\text{Who gave to Mary}] \text{ and } [\text{what did give to Mary}]?\]

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):

\[
(11) \quad \text{a. } [\text{CP wh}_1 [\text{TP} \ldots t_1 \ldots \text{pro}_2 \ldots ]] \text{ and } [\text{CP wh}_2 [\text{TP} \ldots \text{pro}_1 \ldots t_2 \ldots ]] \\
\quad \text{b. } [\text{CP wh}_1 [\text{TP} \ldots \text{pro}_1 \ldots t_1 \ldots ]] \text{ and } [\text{CP wh}_2 [\text{TP} \ldots \text{pro}_1 \ldots t_2 \ldots ]]
\]

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 pronoun 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, [t1 gave t2 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 tabetano], 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-*ga*] [[*vP Mary-ni nani-o ageta*] T]]
     who-Nom Mary-Dat what-Acc gave
     b. [[*TP t*] [[*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:
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:

(21) \[ \text{[CP dare-ga}_1 \text{[TP } t'_1 [\text{vP Mary-ni nani-o ageta}]] C_{[+Q]}]} \]

who-Nom Mary-Dat what-Acc gave

Given May’s (1985) category/segment distinction, dare-ga 'who-Nom' c-commands not only its trace in the first conjunct \( t'_1 \) but also its trace in the second conjunct \( t_1 \). 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) \text{Doitu}_1\text{-ga sosite nani-o soitu}_1\text{-no hahaoya-ni ageta no?} \]

which guy-Nom and what-Acc that guy-Gen mother-Dat gave Q

Lit. 'Which guy\(_1\) and what\(_2\) \([t_1 \text{ gave } t_2 \text{ to his}_1 \text{ mother}]\)’?
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) \[ [\text{CP} \ [\text{CP} \text{ dare-ga} \ [\text{TP} \text{ t}'_1 \ [\text{vP} \text{ Mary-ni} \ t_2 \ \text{ageta}]\] C_{+Q}]]

\[ \text{who-Nom} \ \text{what-Acc} \ \text{Mary-Dat} \ \text{gave} \]

\[ [\text{&P} \text{ sosite } [\text{CP} \text{ TP nani-o}_3 \ [\text{TP} \text{ t}_1 \ [\text{vP} \text{ Mary-ni} \ t_3 \ \text{ageta}]\] \text{no}]]\]

\[ \text{and} \ \text{what-Acc} \ \text{Mary-Dat} \ \text{gave} \ \text{Q} \]

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 *y*].

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 Lasink 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) \[ \exists x [\text{Fred said that I talked to } x], \text{ but I don't know for which } y, y \text{ a girl} \ [\text{Fred said that I talked to } y]. \]
(31) satisfies the parallelism condition on ellipsis (29), since the variables in the antecedent and the elided clause are bound from parallel positions.

Returning to (27) (repeated here as (32)). the antecedent clause is the lower TP in the second conjunct, and the elided clause is TP in the first conjunct:

\[
(32) \quad [CP [CP \text{dare-ga}_1 \quad [\text{nani-o}_2 \quad [\text{TP(Elided Clause)} \ t'_1 \ [vP \text{Mary-ni} \ t_2 \ \text{ageta}]]] \ C_{[+Q]}]] \\
\text{who-Nom} \quad \text{what-Acc} \\
\text{Mary-Dat} \quad \text{gave} \\
[\&P \ \text{sosite} [CP [TP \text{nani-o}_3 \quad [\text{TP(Antecedent Clause)} t_1 \ [vP \text{Mary-ni} \ t_3 \ \text{ageta}]] \ C_{[+Q]}]] \ no]] \\
\text{and} \quad \text{what-Acc} \\
\text{Mary-Dat} \quad \text{gave} \quad Q
\]

I claim that the wh-phrase nani-o 'what-Acc' in Spec-C of the first conjunct and the one in the TP-joined position of the second conjunct count as occupying parallel positions, since both of them are in the minimal domain of interrogative C, i.e. the empty interrogative C in the first conjunct and Q-particle no in the second conjunct. We then get semantic representation (33), where the variables in the antecedent clause, i.e. x and y, and those in the elided clause, i.e. x and z, are bound from parallel positions; this satisfies the parallelism condition on ellipsis (29):

\[
(33) \quad \text{For which } x, x \ \text{a person [for which } y, y \ \text{a thing [x gave y to Mary]} \ [\text{and [for which } z, z \ \text{a thing [x gave z to Mary]]]]}
\]

We apply backward sluicing at PF in the sense of Giannakidou and Merchant (1998), as shown in (34). We can correctly derive (18):

\[
(34) \quad [CP [CP \text{dare-ga}_1 \quad [\text{wh-phrase} \ [\text{Mary-ni} \ \text{nani-o}_2 \ \text{ageta}]]] \ C_{[+Q]}]] \\
\text{who-Nom} \quad \text{Mary-Dat} \quad \text{what-Acc gave} \\
[\&P \ \text{sosite} [CP [TP \text{nani-o}_3 \quad [\text{TP} t_1 \ [vP \text{Mary-ni} \ t_3 \ \text{ageta}]] \ C_{[+Q]}]] \ no]] \\
\text{and} \quad \text{what-Acc} \\
\text{Mary-Dat} \quad \text{gave} \quad Q
\]

Hence, our analysis can derive a CWH with two wh-arguments in Japanese from a bi-clausal structure. It is crucial in this analysis that neither covert wh-movement of the wh-phrase nani-o 'what-Acc' in the first conjunct nor scrambling of the wh-phrase nani-o 'what-Acc' in the second conjunct leaves an intermediate trace in the vP-edge, thereby yielding a semantic representation which satisfies the parallelism condition on ellipsis.\(^1,2,3\)

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\(^1\) If C in the first conjunct is filled by Q-particle and C in the second conjunct is null, it yields a postverbal CWH, where the coordinator sosite appears in the postverbal position, as shown in (i):

(i) \quad \text{Dare-ga} \quad \text{Mary-ni} \quad \text{ageta no sosite (ittai) nani-o} \\
\text{who-Nom Mary-Dat gave Q and (the hell) what-Acc} \\
\text{Lit. 'What gave something to Mary, and what (the hell)?'}

In the derivation of (i), after the two CPs are merged, nani-o 'what-Acc' in the first conjunct undergoes overt wh-movement to Spec-C for clausal typing, and dare-o 'who-Nom' in the first conjunct undergoes scrambling. Then, in the covert component, nani-o 'who-Acc' in the first conjunct undergoes wh-movement to Spec-C, as shown in (ii):

(ii) \quad \text{[CP [CP nani-o3 [TP dare-ga1 [TP t'_1 [vP Mary-ni t_3 ageta]] C_{[+Q]}]] no]} \\
\text{who-Nom what-Acc Mary-Dat gave Q} \\
[\&P \ \text{sosite [CP Nani-o2 [TP t_1 [vP Mary-ni t_3 ageta]] C_{[+Q]}]]} \\
\text{and what-Acc Mary-Dat gave}
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 vP-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 vP-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 vP-edge due to the economy condition that bans any superfluous step:

(36) [[CP [CP who1 [what2 [[TP t'1 [vP gave t2 to Mary]]]]] [&P and [CP what3 [[TP t'3 gave t3 to Mary]]]]]

In (36), there is an intermediate trace t'2 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'3 in the vP-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) [nusu-ka kuliko nwues-ul] Mary-eykey cwu-ess ni? (Korean)
who-Nom and what-Acc Mary-Dat gave Q
Lit. 'Who and what gave to Mary?'

(38) 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.

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.

See Kasai (to appear), which has independently proposed an ellipsis approach to Japanese CWHs, but in implementations different from the present paper.
4.2 Mixed CWHs with Obligatorily Transitive Verbs

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

(39) a. \textbf{What and why} did you eat? \hspace{1cm} (= (5))
    b. \textbf{What and where} did you sing?

(40) a. *\textbf{What and why} did you devour?
    b. *\textbf{What and where} did you buy?

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

(41) a. \textit{Kakvo i kak} kupil Ivan?
     \hspace{1cm} \text{what and how bought Ivan}
     \hspace{1cm} \text{Lit. ‘What and how did Ivan buy?’} \hspace{1cm} (Citko and Gračanin-Yuksek 2013: 15)
    b. \textit{Sto i kogda ty podaril Marii?}
     \hspace{1cm} \text{what and when you gave present Mary}
     \hspace{1cm} \text{Lit. ‘What and when did you give a present to Mary?’} \hspace{1cm} (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) \textit{nani-o sosite ikura-de kimi-wa katta no?} \hspace{1cm} (= (2))
     \hspace{1cm} \text{(the hell) what-Acc and at-what-price you-Top bought Q}
     \hspace{1cm} \text{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) \[\text{CP [CP nani-o}_1 \text{ [ikura-de}_2 \text{ [TP (Elided Clause) kimi-wa [vP t' t'' katta]]} \text{C[+Q]]}}\]

(44) \text{For which } x, x \text{ a thing [for which } y, y \text{ a price [you bought } x \text{ at } y]] \text{ [and [for which } z, z \text{ a price [you bought } x \text{ 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):

\[
(45) \quad [\text{CP} [\text{CP} \text{what}_1 [\text{why}_2 [\text{TP} \text{you} [\text{vP} \text{t''}_1 \text{devour} \text{t'}_1 \text{t}_2]]]] [\&P \text{and} [\text{CP} \text{why}_3 [\text{TP} \text{you} [\text{vP} \text{t'}_3 \text{devour} \text{t}_1 \text{t}_3]]]]]
\]

This results in semantic representation, where the parallelism condition (29) is not satisfied due to the intermediate traces \(t''_1\) and \(t'_3\) 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. 'Who1 (the hell) and what2 [t1 gave t2 to Mary]?'

\((47)\)?*(Ittai) **nani-o** sosite **dare-ga** Mary-ni ageta no?

(who-Nom) what-Acc and who-Nom Mary-Dat gave Q?

Lit. 'What2 (the hell) and who1 [t1 gave t2 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):

\[
(48) \quad [\text{CP} \text{dare-ga}_1 [\text{TP} \text{t'}_1 [\text{vP} \text{Mary-ni nani-o ageta}]] C_{[+Q]}]
\]

\(\text{who-Nom} \quad \text{Mary-Dat} \quad \text{what-Acc} \quad \text{gave}\)

### 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.
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