

# IN-SITU PROPERTIES OF FRAGMENT ANSWERS: EVIDENCE FROM JAPANESE\*

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## 1 Introduction

The goal of this paper is to propose a non-movement analysis of fragment answers (short answers) in Japanese, shedding light on a hitherto unnoticed structural parallelism/identity requirement on ellipsis. In Japanese, like many other languages, a *wh*-question such as (1Q) can be answered either by a fully sentential answer (SA) like (1A), or by a fragment answer (FA) like (1A'). The answer phrase in an SA bears focus signaled by a prosodic accent (henceforth indicated by small capitals), while the other non-focused elements may be prosodically weakened (deaccented). In an FA, the answer phrase stands alone, while the other parts are not overtly realized.

- (1) Q: Taro-wa nani-o tabeta no?  
Taro-TOP what-ACC ate Q  
'What did Taro eat?'
- A: Taro-wa RINGO-(O) HUTATU tabeta (no da/desu). (*Sentential Answer, SA*)  
Taro-TOP apple-ACC two-CL ate C COP  
'Taro ate TWO APPLES.'
- A': ringo-(o) hutatu (da/desu). (*Fragment Answer, FA*)  
apple-ACC two-CL COP  
'Two apples.'

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Interestingly, Japanese, unlike many other languages, allows a wh-element to be located within a compound, as shown in (2Q). We will refer to this type of wh-question as “compound wh-question” (CwhQ). This type of question can be followed by an FA like (2A) or an SA like (2A’).

- (2) Q: keisatu-wa [[[N1 nani]-[N2 gorosi]]-no hannin]-o tukamaeta no? (CwhQ)  
 police-TOP what-slaughter-LNK culprit-ACC caught Q  
 lit. ‘[The [what-slaughter] culprit] did the police catch?’
- A: noraneko (da/desu). (FA)  
 stray.cat COP  
 ‘Stray cat(s).’
- A’: keisatu-wa [[N1 NORANEKO]-[N2 gorosi]-no hannin]-o tukamaeta (no da/desu). (SA)  
 police-TOP stray.cat-slaughter-LNK culprit-ACC caught C COP  
 ‘The police caught the [STRAY.CAT- slaughter culprit].’

Though quite idiosyncratic, the compound wh-question construction is fully productive in Japanese, perhaps made available by its genuine wh-in-situ strategy. As we will see in the following discussion, compound wh-questions like (2Q) exhibit several interesting differences from phrasal wh-questions (PwhQ) like (3), despite their similarity.

- (3) keisatu-wa [[[NP nani]-o korosita] hannin]-o tukamaeta no? (PwhQ)  
 police-TOP what-ACC killed culprit-ACC caught Q  
 lit. ‘[The culprit that killed what] did the police catch?’

In this paper, we will explore the syntax of compound wh-questions and their FAs, and discuss their implications for the study of ellipsis in human language.

This paper is organized as follows. Section 2 reviews the previous analyses of FAs in Japanese put forth by Saito (2004), Nishigauchi (2006, 2010, 2011) and Nishigauchi and Fujii (2006). Section 3 presents several arguments against these analyses, including the one based on FAs to compound wh-questions, and proposes an alternative analysis that makes no recourse to movement of the answer element. Section 4 demonstrates that a compound wh-question allows a more restricted range of FAs than its corresponding phrasal wh-question, and discusses some implications of this fact for the study of ellipsis. Section 5 summarizes the whole discussion.

## 2 Previous Analyses of FAs in Japanese

To set the stage for our discussion, this section reviews major past analyses of FAs in Japanese.

### 2.1 Cleft Analysis

Saito (2004) claims that certain instances of FAs are derived from the cleft construction. The derivation is illustrated in (4). Under this analysis, the answer phrase occurs in the focus position of a cleft sentence, and is related to a gap within the presuppositional clause, mediated by the A’-movement of a null operator *Op*. Then, the presuppositional clause undergoes CP-deletion, leaving the answer phrase and the copular verb intact.

- (4) a. [<sub>CP</sub> *Op<sub>i</sub>* [<sub>TP</sub> Taro-ga *t<sub>i</sub>* tabeta] no]-wa RINGO-O HUTATU<sub>*i*</sub> da/desu. (Cleft)  
           Taro-NOM ate C-TOP apple-ACC two-CL COP  
           ‘It is TWO APPLES<sub>*i*</sub> that Taro ate *t<sub>i</sub>*.’
- b. [<sub>CP</sub> *Op<sub>i</sub>* [<sub>TP</sub> ~~Taro-ga *t<sub>i</sub>* tabeta~~] no]-wa RINGO-O HUTATU<sub>*i*</sub> da/desu. (Deletion)  
           Taro-NOM ate C-TOP apple-ACC two-CL COP

One nice consequence of this analysis is that it can naturally capture the optional appearance of the copular verb *da/desu* in Japanese FAs (see (1A’)). Furthermore, the A’-movement can also be utilized to account for various “connectivity” effects, such as case, binding, and so on.

## 2.2 Focus Movement Analysis

Nishigauchi (2006, 2010, 2011) and Nishigauchi and Fujii (2006) propose another movement-based analysis. They claim that FAs are derived from their corresponding SAs by focus movement and deletion. Under their analysis, the underlying structure for FAs like (1A’) is the so-called “*no-da*” in-situ focus construction as in (5a), where the tensed clause is embedded into the complement of the nominalizer complementizer *no*, followed by the copular verb *da/desu*. Nishigauchi and Fujii analyze *no* and *da/desu* as the heads of Fin(iteness)P and Foc(us)P, respectively (see Rizzi 1997; see also Hiraiwa and Ishihara 2010). The answer phrase undergoes focus movement to the clause-initial position (Spec-FocP) as in (5b) (“overt QR” under Nishigauchi’s 2011 analysis), and then the CP headed by *no* undergoes deletion as in (5c).

- (5) *Nishigauchi and Fujii’s Focus-movement-based Analysis:*
- a. [[<sub>FinP</sub> Taro-wa RINGO-O HUTATU tabeta no] da/desu] (*no-da construction*)  
           Taro-TOP apple-ACC two-CL ate C COP  
           ‘It is that Taro ate TWO APPLES.’
- b. [<sub>FocP</sub> RINGO-O HUTATU<sub>*i*</sub> [<sub>FinP</sub> Taro-wa *t<sub>i</sub>* tabeta no] da/desu] (*Focus-movement*)  
           apple-ACC two-CL Taro-TOP ate C COP
- c. [<sub>FocP</sub> RINGO-O HUTATU<sub>*i*</sub> [<sub>FinP</sub> ~~Taro-wa *t<sub>i</sub>* tabeta no~~] da/desu] (*Deletion*)  
           apple-ACC two-CL Taro-TOP ate C COP

Like Saito’s (2004) cleft analysis, Nishigauchi and Fujii’s analysis can provide a succinct account of the optional appearance of *da/desu*, as well as various connectivity effects.

## 2.3 Bare Copular Analysis

Under Saito, Nishigauchi, and Fujii’s analyses, the derivation of FAs in Japanese involves A’-movement, and hence it is expected to be constrained by various locality conditions, including islands. However, Saito (2004) points out that certain FAs in Japanese do not exhibit island effects. As exemplified by (6), an FA may correspond to a wh-phrase located within an island (specifically a relative clause in (6Q)).

- (6) Q: [dono ginkoo-kara okane-o nusunda doroboo]-ga taihosareta no desu ka?  
           which bank-from money-ACC stole thief-NOM was.arrested C COP Q  
           lit. ‘[The thief that stole money from which bank] was arrested?’

- A: Tookyoo Ginkoo-kara da/desu. (FA)  
 Tokyo Bank-from COP  
 ‘From the Bank of Tokyo.’

Saito (2004) argues that such FAs like (6A) should be derived without movement. More specifically, he proposes the bare copular construction, illustrated in (7), as another possible source of FAs in Japanese (this proposal is endorsed by Nishigauchi and Fujii 2006 as well).

- (7) *Saito’s (2004) bare copular analysis:*  
*pro/sore-wa* [<sub>XP</sub> TOOKYOO GINKOO-KARA] da/desu.  
*pro/it-TOP* Tokyo Bank-from COP  
 ‘It is FROM THE BANK OF TOKYO.’

Here, *pro* is a pronoun, an empty version of *sore* ‘it’, referring to the entity denoted by the antecedent *wh*-phrase (or perhaps the event indicated by the antecedent question sentence), and the answer XP serves as a predicate of the null subject. This analysis can readily explain the island insensitivity, for it does not assume any extraction out of an island.

### 3 An In-Situ Analysis of FAs

In this section, we examine FAs involving a numeral quantifier (Section 3.1) and FAs to compound *wh*-questions (Section 3.2). We claim that such FAs constitute strong counterevidence to the previous analyses reviewed in Section 2. As an alternative, we propose a non-movement analysis, where an answer element stays inside an ellipsis site (Section 3.3).

#### 3.1 Collective Reading of Numeral Quantifiers

In Japanese, a numeral quantifier can be adjacent to its host noun as in (8), or be split off (“floated”) from its host noun as in (9) (Nakanishi 2007, 2008).

- (8) a. [san-nin-no otokonoko]-ga kinoo booto-o tukutta. (Non-split case)  
 three-CL-LNK boy-NOM yesterday boat-ACC made  
 (i) <sup>OK</sup> collective reading: ‘Three boys built a boat together yesterday.’  
 (ii) <sup>OK</sup> distributive reading: ‘Three boys each built a boat yesterday.’  
 b. [otokonoko san-nin]-ga kinoo booto-o tukutta. (Non-split case)  
 boy three-CL-NOM yesterday boat-ACC made  
 (i) <sup>OK</sup> collective reading: ‘Three boys built a boat together yesterday.’  
 (ii) <sup>OK</sup> distributive reading: ‘Three boys each built a boat yesterday.’
- (9) a. [otokonoko]-ga kinoo san-nin booto-o tukutta. (Split case)  
 boy-NOM yesterday three-CL boat-ACC made  
 (i) ?? collective reading: ‘Three boys built a boat together yesterday.’  
 (ii) <sup>OK</sup> distributive reading: ‘Three boys each built a boat yesterday.’

- b. san-nin kinoo [otokonoko]-ga booto-o tukutta. (Split case)  
 three-CL yesterday boy-NOM boat-ACC made  
 (i) ?? collective reading: ‘Three boys built a boat together yesterday.’  
 (ii) <sup>OK</sup> distributive reading: ‘Three boys each built a boat yesterday.’

Of interest is the fact that the split cases lack a certain possible interpretation that the non-split cases allow (Nakanishi 2007, 2008 and references cited therein). Observe first that the non-split cases in (8) are ambiguous between the so-called “collective” reading and “distributive” reading. Under the collective reading, three students built a boat together as a group yesterday. Under the distributive reading, each of the three students built a boat separately. Nakanishi (2007, 2008) points out that when a numeral quantifier is split from its host NP, the collective reading disappears. Thus, the split cases in (9) only allow the distributive reading. We summarize Nakanishi’s observation as follows.

- (10) The collective reading is available only when a numeral quantifier is adjacent to its host noun. (Nakanishi 2007, 2008)

This generalization is further supported by the following examples (Nakanishi 2007).

- (11) a. [san-nin-no gakusei]-ga kinoo Peter-o korosita. (Non-split case)  
 three-CL-LNK student-NOM yesterday Peter-ACC killed  
 b. [gakusei sannin]-ga kinoo Peter-o korosita. (Non-split case)  
 student three-NOM yesterday Peter-ACC killed  
 ‘Three students killed Peter yesterday.’ (collective reading)  
 (12) ?? [gakusei]-ga kinoo san-nin Peter-o korosita. (Split case)  
 student-NOM yesterday three-CL Peter-ACC killed  
 ‘Three students killed Peter yesterday.’

In contrast with (8a,b), (11a,b) lack the distributive reading, namely ‘three different students killed Peter separately.’ This interpretation conflicts with our world knowledge that one person cannot be killed multiple times. Thus, the non-split cases (11a,b) have only the collective reading. The split case (12) lacks the distributive reading for the same reason as (11a,b), and besides, the collective reading is unavailable for the split case in accordance with Nakanishi’s generalization. Therefore, it follows that (12) is degraded.

Bearing this in mind, let us consider FAs with a numeral quantifier. As exemplified by (13A), a numeral quantifier can stand alone as an FA in Japanese.

- (13) Q: kinoo [nan-nin-no gakusei]-ga Peter-o korosita no?  
 yesterday how.many-CL-LNK student-NOM Peter-ACC killed Q  
 ‘How many students killed Peter yesterday?’  
 A: go-nin (da/desu). (FA)  
 five-CL COP  
 ‘Five.’

(13A) is a felicitous answer and the intended interpretation is the collective reading, namely, ‘Five students killed Peter together yesterday.’ This type of FA poses a serious problem for the

previous analyses reviewed in Section 2. First, observe that the following copular expression is deviant as a response to the question (13Q).

- (14) sore-wa/sore-ra-wa/kare-ra-wa GO-NIN da/desu. (\*? as a response to (13Q))  
 it-TOP/it-PL-TOP/he-PL-TOP five-CL COP  
 ‘It is/they are FIVE.’

(14) indicates that, no matter which pronoun we choose, the bare copular structure cannot constitute a legitimate answer to (13Q). Let us suppose with Nishigauchi and Fujii (2006) that *pro*, which appears in their bare copular source, is a null version of *sore* ‘it’. If the phonological realization of the pronominal subject does not affect the acceptability, then the bare copular source with a null subject *pro* would be unacceptable just like (14). Therefore, the possibility of the bare copular analysis of (13A) is excluded.

Moreover, (13A) cannot be explained by the cleft analysis or by the focus movement analysis, either. Under these analyses, (13A) should have the structures (15) and (16), respectively.

(15) *Structure under Saito’s cleft analysis:*

- \*[<sub>CP</sub> *Op*<sub>i</sub> [<sub>TP</sub> kinoo *t*<sub>i</sub> gakusei-ga Peter-o korosita no]-wa GO-NIN<sub>i</sub> da/desu.  
 yesterday students-NOM Peter-ACC killed C-TOP five-CL COP  
 lit. ‘It is FIVE<sub>i</sub> that *t*<sub>i</sub> students killed Peter yesterday.’

(16) *Structure under Nishigauchi and Fujii’s focus-movement analysis:*

- ??[GO-NIN<sub>i</sub> [kinoo *t*<sub>i</sub> gakusei-ga Peter-o korosita ] no] da/desu].  
 five-CL yesterday students-NOM Peter-ACC killed C COP  
 lit. ‘It is that FIVE<sub>i</sub>, *t*<sub>i</sub> students killed Peter yesterday.’

We claim that the unacceptability/degradedness of (15) and (16) is due to the fact that they fail to gain an appropriate interpretation. Here, the distributive reading is unavailable due to the world knowledge that one person cannot be killed multiple times. More importantly, these sentences cannot have the collective reading, because the numeral quantifier *go-nin* ‘five-CL’ is split from its host noun, *gakusei* ‘student(s)’.

Given Nakanishi’s generalization (10), it follows that (13A) should be derived without splitting the numeral quantifier from its host noun. This can be implemented if the numeral quantifier stays in a position adjacent to its host noun. Therefore, we argue that the answer element *go-nin* stays in its underlying position, analyzing (13A) as either (17a) or (17b).

(17) *In-situ analysis:*

- a. [~~kinoo~~ [GO-NIN-~~no~~ ~~gakusei~~]-ga ~~Peter-o~~ ~~korosita no~~] da/desu].  
 yesterday five-CL-LNK student-NOM Peter-ACC killed C COP  
 b. [~~kinoo~~ [~~gakusei~~ GO-NIN]-ga ~~Peter-o~~ ~~korosita no~~] da/desu].  
 yesterday student five-CL-NOM Peter-ACC killed C COP

Here, we assume with van Craenenbroeck and den Dikken (2006) and Kimura (2010, 2013a,b) that deletion is a PF operation that eliminates phonological features of all the recoverable elements except focus-marked elements inside the target constituent (see also Ott and Struckmeier to appear). In (17), deletion applies to the CP headed by *no*, and eliminates all the recoverable elements except the focus phrase *go-nin* ‘five-CL’. The numeral quantifier is a prenominal modifier in (17a), while it is a post nominal modifier in (17b). In either case, the

numeral quantifier is adjacent to its host noun. Then, it is natural that (13A) has the collective reading in accordance with Nakanishi's generalization. In passing, following Watanabe (2010), we claim that the insertion of *no*, a linking element, takes place only when its host noun is overtly realized. Then, in (17a), the insertion in question does not occur, since its host noun undergoes deletion.

So far, we have shown that an in-situ analysis is superior to the previous analyses in accounting for FAs with a numeral quantifier. In the following section, we will provide a further argument for our in-situ analysis based on FAs to compound wh-questions.

### 3.2 FAs for Compound Wh-Questions

As briefly noted in Section 1, Japanese, in contrast to many other languages like English, allows a wh-element to be part of a compound. (2) is repeated here as (18).

- (18) Q: keisatu-wa [[[N<sub>1</sub> nani]-[N<sub>2</sub> gorosi]]-no hannin]-o tukamaeta no? (CwhQ)  
 police-TOP what-slaughter-LNK culprit-ACC caught Q  
 lit. '[The [what-slaughter] culprit] did the police catch?'
- A: noraneko (da/desu). (FA)  
 stray.cat COP  
 'Stray cat(s).'
- A': keisatu-wa[[N<sub>1</sub> NORANEKO]-[N<sub>2</sub> gorosi]-no hannin]-o tukamaeta (no da/desu). (SA)  
 police-TOP stray.cat-slaughter-LNK culprit-ACC caught C COP  
 'The police caught the [STRAY.CAT-slaughter culprit].'

There is clear morpho-phonological evidence that *nani-gorosi* 'what-slaughter' in (18Q) forms a compound. First, we can observe *rendaku* (sequential voicing, a hallmark of compounding in Japanese), by which the initial [-voice] consonant of the second noun (N<sub>2</sub>) changes to its [+voice] counterpart. We can also observe accent shifting, another hallmark of compounding, in (18Q), where the lexical accent of the first noun (N<sub>1</sub>) is shifted to the initial syllable of N<sub>2</sub>. Thus, [N<sub>1</sub> náni] + [N<sub>2</sub> korosi] becomes [N [N<sub>1</sub> nani]-[N<sub>2</sub> górosi]] (see, e.g., Kubozono and Ota 1998, Kubozono 1999a,b for overview of these compound-specific processes in Japanese phonology). This type of compound wh-question can be answered by FAs like (18A) as well as SAs like (18A') (see Kimura and Narita 2016 for more examples).

Note first that FAs like (18A) cannot be explained by the bare copular analysis. The following copular sentence is unacceptable as an answer to the compound wh-question (18Q).

- (19) sore-(ra)-wa NORANEKO da/sesu. (\* as a response to (18Q))  
 it-PL-TOP stay.cat COP  
 'It is (A) STRAY CAT(S).'

In (19), the pronominal subject is overtly realized as *sore* 'it'. If we assume with Nishigauchi and Fujii (2006) that *pro* in the bare copular analysis is a null version of *sore* 'it', then the bare copular source with a null subject *pro* would be unacceptable, just like (19). Therefore, the possibility of the bare copular analysis of (18A) is excluded.

In addition, (18A) poses a problem for Saito's cleft analysis and Nishigauchi and Fujii's focus movement analysis. Under these analyses, (18A) should have a structure like (20) or (21), respectively.

(20) *Structure under Saito's (2004) cleft analysis:*

\*<sub>[CP Op<sub>i</sub> [TP keisatu-ga [ t<sub>i</sub>-[N<sub>2</sub> gorosi]-no hannin]-o tukamaeta no]-wa</sub>  
 police-NOM slaughter-LNK culprit-ACC caught C-TOP

*NORANEKO*<sub>i</sub> (da/desu).

stray.cat COP

lit. 'It is *STRAY CAT*(*S*)<sub>i</sub> that the police caught the *e<sub>i</sub>*-slaughter culprit.'

(21) *Structure under Nishigauchi and Fujii's focus-movement analysis:*

\*<sub>[NORANEKO<sub>i</sub> [keisatu-ga t<sub>i</sub>-gorosi-no hannin-o tukamaeta] no] da/desu].</sub>  
 stray.cat police-NOM slaughter-LNK culprit-ACC caught C COP

lit. 'It is that *STRAY CAT*(*S*)<sub>i</sub>, the police caught *t<sub>i</sub>*-slaughter culprit.'

Both of these structures are completely unacceptable. Thus, (18A) cannot be derived from either of these structures. One question that arises here is why (20) and (21) are unacceptable. We may attribute the unacceptability to the principle of lexical integrity, which bans extraction out of a compound (see Di Sciullo and Williams 1987). As long as some version of this principle is on the right track, it follows that (18A) should be derived without movement of *noraneko* 'stray cat(s)' out of the compound *noraneko-gorosi-(no)* 'stray.cat-slaughter'.

Based on these considerations, we claim that (18A) is best analyzed as (22).

(22) *In-situ analysis:*

[keisatu-wa [[<sub>[N<sub>1</sub> NORANEKO]-[<sub>N<sub>2</sub> gorosi]]-no hannin]-o tukamaeta]-no] da/desu].</sub>  
 police-TOP stray.cat-slaughter-LNK culprit-ACC caught C COP</sub>

'It is that the police caught the [*STRAY.CAT*-slaughter culprit].'

Here, *noraneko* stays inside the compound in accord with lexical integrity, while deletion applying to CP phonologically reduces all but the focus-marked element *noraneko*. Under this analysis, the FA is derived from a structure homologous to the SA like (18A') simply via deletion, without any additional operation such as movement.

In this section, we examined hitherto unnoticed types of FAs, which led us to the conclusion that the in-situ analysis is superior to previous analyses of FAs, such as the bare copular analysis, Saito's cleft analysis and Nishigauchi and Fujii's focus movement analysis. In what follows, we will consider further consequences of FAs for compound wh-questions.

## 4 Further Implications of FAs for Compound Wh-Questions

In the rest of this paper, we will show that FAs for compound wh-questions have theoretical implications for several controversial issues in the study of ellipsis. One such issue is the parallelism/identity condition on ellipsis. It has been widely assumed that ellipsis/deletion succeeds only when a certain parallelism/identity condition is satisfied, though the exact nature of this condition is still controversial. Another controversial issue is whether the elliptical construction indeed involves hidden (phonologically unrealized) structure. We will show that the



morphosyntax of the *wh*-element serves as a critical constraint on the possible set of FAs, which will be demonstrated on the basis of the contrast between compound *wh*-questions vs. phrasal *wh*-questions. Based on this consideration, we will provide arguments against (i) a purely semantic account of the identity condition on ellipsis (Merchant 2001 and others), and (ii) non-structural/direct interpretation approaches to FAs that deny the existence of hidden structures behind FAs (Culicover and Jackendoff 2005, Nagatsugu 2010, 2013, and others).

#### 4.1 The Morphosyntax of *Wh* as a Critical Constraint on FAs

As we observed in the previous sections, Japanese allows compound *wh*-questions like (23a), which are not observed in many other languages including English. Of interest is the fact that a compound *wh*-question disallows certain forms of FAs that are perfectly felicitous for phrasal *wh*-questions. For instance, the compound *wh*-question in (23a) and the phrasal *wh*-question in (23b) are semantically equivalent, and so are the FAs in (24A<sub>1</sub>) and (24A<sub>2</sub>). However, the phrasal *wh*-question (23b) allows the FA (24A<sub>2</sub>) as well as (24A<sub>1</sub>), whereas the compound *wh*-question (23a) allows only (24A<sub>1</sub>) as an FA.

- (23) a. keisatu-wa [[[N<sub>1</sub> nani]-[N<sub>2</sub> gorosi]]-no hannin]-o tukamaeta no? (CwhQ)  
 police-TOP what-slaughter-LNK culprit-ACC caught Q  
 lit. '[The [what-slaughter] culprit] did the police catch?'
- b. keisatu-wa [[NP nani]-o korosita] hannin]-o tukamaeta no? (PwhQ)  
 police-TOP what-ACC killed culprit-ACC caught Q  
 '[The culprit that killed what] did the police catch?'
- (24) A<sub>1</sub>: noraneko (da/desu). (FA: <sup>ok</sup> for (23a), <sup>ok</sup> for (23b))  
 stray.cat COP  
 'Stray cat(s).'
- A<sub>2</sub>: [[CP kainusi-ga i-nai] neko] (da/desu). (FA: \* for (23a), <sup>ok</sup> for (23b))  
 owner-NOM be-NEG.PRES cat COP  
 'Cat(s) [CP that has no owner].'

Note first that this fact cannot be explained by a purely semantic identity condition, like the one proposed by Merchant (2001). Merchant points out that strict form identity is not required for ellipsis, providing examples like (25).

- (25) [<sub>A</sub> Decorating for the holidays] is easy if you know how [<sub>E</sub> ~~to decorate for the holidays~~].

In (25), the elided part E is not structurally identical to the antecedent A, in that the former is an infinitival form whereas the latter is a gerundive form. Despite the structural mismatch, ellipsis succeeds in this case. Based on data like (25), Merchant (2001) proposes a semantic identity condition on ellipsis in (26), formulated in terms of mutual entailment.

- (26) A constituent  $\alpha$  can be deleted only if  $\alpha$  is e-GIVEN, where an expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo  $\exists$ -type shifting, (i) A entails F-clo(E), and (ii) E entails F-clo(A) (Merchant 2001).

We can obtain  $F\text{-clo}(X)$  by replacing focus-marked parts of  $X$  with  $\exists$ -bound variables of the appropriate type. According to Merchant, deletion can apply as long as semantic equivalence holds between the ellipsis site and its antecedent. Thus, given that  $A$  entails  $F\text{-clo}(E)$  and  $E$  entails  $F\text{-clo}(A)$  in (25), deletion succeeds despite the syntactic difference between the gerundive form  $A$  and the infinitival form  $E$ .

However, semantic identity conditions like (26) have nothing to say about the contrast between (23a) and (23b) in their compatibility with (24A<sub>2</sub>). The compound *nani-gorosi-(no)* ‘what-slaughter’ in (23a) is semantically synonymous with the relative clause *nani-o korosita* ‘that killed what’ in (23b). Thus, it is reasonable to suppose that (F-closures of) (23a) and (23b) are equivalent; they would be something like ‘ $\exists x$ : the police caught the culprit of killing  $x$ ’ for (23a), and ‘ $\exists x$ : the police caught the culprit that killed  $x$ ’ for (23b). Then, the semantic identity condition in (26) predicts that (23a) and (23b) should yield the exact same set of possible FAs, contrary to fact. Therefore, the unavailability of (24A<sub>2</sub>) as an FA to the compound wh-question (23a) is unexpected under the purely semantic identity condition.

If this is the case, what makes (24A<sub>2</sub>) deviant as an FA to the compound wh-question in (23a), but not to the phrasal wh-question in (23b)? In order to address this question, consider the fact that the compound wh-question (23a) also disallows the following FAs, in contrast to the phrasal wh-question (23b), for which the FAs in (27a-c) are perfectly felicitous.

- (27) a. [NP [NP Tanaka-san]-no neko] (da/desu). (FA: \* for (23a), <sup>ok</sup> for (23b))  
           Tanaka-Mr.-LNK cat COP  
           ‘Mr. Tanaka’s cat.’
- b. [NP [QP san-biki]-no noraneko] (da/desu). (FA: \* for (23a), <sup>ok</sup> for (23b))  
           three-CL-LNK stray.cat COP  
           ‘(The) three stray cats.’
- c. [NP [AdjP (totemo) tiisana] noraneko] (da/desu). (FA: \* for (23a), <sup>ok</sup> for (23b))  
           very little stray.cat COP  
           ‘(A/The) (very) little stray cat(s).’

The FAs in (27) share one property with (24A<sub>2</sub>): they are all phrases, consisting of more than a noun (unlike the noun *noraneko* in (24A<sub>1</sub>)).

Note in this context that (23a) involves the morphosyntax of compounding, from which phrasal constituents are typically excluded. Then, it is tempting to attribute the contrast between (24A<sub>1</sub>) and (24A<sub>2</sub>)/(27a-c) to the general condition that no phrasal modifiers (like relative clauses, possessors, quantificational phrases or adjectival phrases) can occur in the word-internal structure of a compound (cf. lexical integrity; Di Sciullo and Williams 1987).

Pursing this line of reasoning, we propose that the identity condition on ellipsis is sensitive to the structural (morpho-syntactic) isomorphism between the remnant of deletion (the answer element) and its correlate (the corresponding wh-element in the antecedent question). The relevant condition can be summarized as (28).

- (28) *Morpho-syntactic identity between the remnant of deletion and its correlate:*

The remnant of deletion must be morpho-syntactically isomorphic to its correlate in the antecedent clause.

Specifically, for the ellipsis involved in FAs, (28) requires that, if the wh-element in the antecedent wh-question is part of a compound, the FA must also be of a form that fits into a compound. This condition cannot be satisfied by the compound wh-question in (23a) paired with the FA in (24A<sub>2</sub>), since the latter involves an NP with a relative clause that cannot enter into the morphosyntax of compounding, hence the FA cannot be isomorphic to the compound-internal wh in (23a). The same reasoning holds for the unacceptability of (27a-c) as FAs to (23a).

In contrast, when the correlate in the antecedent question is phrasal as in (23b), the FAs in (24A<sub>2</sub>)/(27a-c) become felicitous remnants in accordance with the condition in (28), a desirable result. (28) can also explain why (24A<sub>1</sub>) is an acceptable FA to the compound wh-question in (23a) as well as to the phrasal wh-question in (23b). *Noraneke* ‘stray cat(s)’ can be part of a compound like [<sub>N1</sub> *noraneke*]-[<sub>N2</sub> *gorosi*] ‘stray.cat-slaughter’, so it can satisfy (28) in relation to the correlate wh-element in (23a). Moreover, *noraneke* can be used as a phrase, too, and hence it can constitute a possible FA to the phrasal wh-question (23b) in accordance with (28).

In this section, we reported our finding that compound wh-questions disallow some FAs that their corresponding phrasal wh-questions allow. Specifically, we showed that compound wh-questions are not compatible with FAs that cannot undergo compounding (e.g., phrasal constituents). This poses a serious problem for purely semantic accounts of the identity condition on ellipsis (Merchant 2001 among others), while it can be succinctly explained by the morpho-syntactic identity condition in (28).

One noteworthy feature of (28) is that it has to do with the identity between an FA (the remnant) and the corresponding wh-element in the antecedent question (the correlate). While it is commonplace in the literature to discuss the parallelism/identity between the antecedent of ellipsis and the elided structure (e.g., as in A and E in (25)), there is relatively little discussion on the morpho-syntactic parallelism/identity requirement between the remnant and the correlate of deletion, to the best of our knowledge (see Fox and Lasnik 2003). Thus, our data from compound wh-questions and their possible FAs constitute novel evidence for the view that the identity/parallelism condition on ellipsis is structural in nature, and governs the morphosyntax of not only the elided structure but also the remnant of deletion.

## 4.2 Further Remarks on the Hidden Structure of FAs

In this section, we will show that the empirical generalization discussed in the previous section has a further consequence for another controversial issue concerning ellipsis, namely whether or not elliptical constructions like FAs indeed involve unpronounced syntactic structure.

It is argued by van Riemsdijk (1978), Culicover and Jackendoff (2005), and others that FAs do not involve any phonetically unrealized structure. This type of approach has been dubbed as the “non-structural approach” or the “direct interpretation approach.” Under this approach, the syntactic representation of the FA in (1A’) is just as shown in (29), involving nothing more than what is phonetically visible therein, namely an NP (see also Nagatsugu 2010, 2013).

- (29) [<sub>NP</sub> ringo-(o) hutatu] (da/desu).  
 apple-ACC two-CL COP  
 ‘Two apples.’

The interpretation of the missing part is supplemented by some extra-syntactic mechanism, although the conception of the mechanism differs among the advocates of this approach.

In contrast, Morgan (1973), Merchant (2004), and many others argue that FAs involve a hidden (phonetically unpronounced) structure. More specifically, they assume that FAs are derived from the same structure as their SAs. Under this approach, (1A) is derived from the full sentential structure of the SA in (1A) via deletion, as shown in (30).

- (30) ~~Taro-wa~~ RINGO-(O) HUTATU ~~tabeta~~-(no da/desu).  
 Taro-TOP apple-ACC two-CL ate C COP  
 ‘Taro ate TWO APPLES.’

This type of approach has been dubbed the “structural approach.” Our non-movement (in-situ) analysis proposed in Section 3 belongs to this family.

Our data from compound wh-questions and their possible FAs constitute a strong piece of evidence for the structural approach over the non-structural approach. Recall that a compound wh-question disallows some FAs that its corresponding phrasal wh-question allows, as shown in (23)-(24), repeated here as (31)-(32) (see (27) for more examples).

- (31) a. keisatu-wa [[[N1 nani]-[N2 gorosi]]-no hannin]-o tukamaeta no? (CwhQ)  
 police-TOP what-slaughter-LNK culprit-ACC caught Q  
 lit. ‘[The [what-slaughter] culprit] did the police catch?’  
 b. keisatu-wa [[[NP nani]-o korosita] hannin]-o tukamaeta no? (PwhQ)  
 police-TOP what-ACC killed culprit-ACC caught Q  
 lit. ‘[The culprit that killed what] did the police catch?’  
 (32) a. noraneko (da/desu). (FA: <sup>ok</sup> for (31a), <sup>ok</sup> for (31b))  
 stray.cat COP  
 ‘Stray cat(s).’  
 b. [[CP kainusi-ga i-nai] neko] (da/desu). (FA: \* for (31a), <sup>ok</sup> for (31b))  
 owner-NOM be-NEG.PRES cat COP  
 ‘Cat(s) [CP that has no owner].’

Now, consider how (32a,b) are analyzed under the non-structural approach. This approach does not assume covert syntactic structure in FAs. Under this approach, then, the syntactic representations of (32a,b) should be something like (33a,b), respectively.

- (33) *Non-structural approach:*  
 a. [NP noraneko] (da/desu).  
 b. [NP [CP kainusi-ga i-nai] neko] (da/desu).

The interpretation of the missing part is supplemented by an extra-syntactic (discourse-semantic) mechanism, crucially without recourse to phonetically nonexistent structures.

Under the non-structural approach, then, it is a purely accidental fact that phrasal wh-questions but not compound wh-questions allow phrasal FAs, given the alleged nonexistence of covert structures. Therefore, advocates of the non-structural approach cannot explain why the generalization in (28) holds, clearly an undesirable result.

The drawbacks of the non-structural approach are further amplified by the fact that a contrast very similar to the one between (32a) and (32b) can be observed in their non-elided sentential counterparts in (34)-(35).

- (34) a. keisatu-wa [[<sub>N1</sub> NORANEKO]-[<sub>N2</sub> gorosi]-no hannin]-o tukamaeta (SA)  
 police-TOP stray.cat-slaughter-LNK culprit-ACC caught  
 (no da/desu).  
 C COP  
 lit. ‘The police caught the [[<sub>N</sub> STRAY.CAT]-slaughter culprit].’
- b. \*keisatu-wa [[<sub>N1</sub> [<sub>CP</sub>KAINUSI-GA I-NAI] NEKO]-[<sub>N2</sub>gorosi]-no (SA)  
 police-TOP owner-NOM be-NEG.PRES cat slaughter-LNK  
 hannin]-o tukamaeta (no da/desu).  
 culprit-ACC caught C COP.PRES  
 lit. ‘The police caught the [[<sub>N</sub> CAT [<sub>CP</sub> THAT HAS NO OWNER]]-slaughter culprit].’
- (35) a. keisatu-wa [[<sub>NP</sub> NORANEKO]-o korosita] hannin]-o tukamaeta (no da/desu). (SA)  
 police-TOP stray.cat-ACC killed culprit-ACC caught C COP  
 ‘The police caught [the culprit that killed [<sub>NP</sub> STRAY CATS]].’
- b. keisatu-wa [[<sub>NP</sub> [<sub>CP</sub> KAINUSI-GA I-NAI] NEKO]-o korosita] (SA)  
 police-TOP owner-NOM be-NEG.PRES cat-ACC killed  
 hannin]-o tukamaeta (no da/desu).  
 culprit-ACC caught C COP.PRES  
 ‘The police caught [the culprit that killed [<sub>NP</sub> CATS [<sub>CP</sub> THAT HAVE NO OWNER]]].’

It is easy to see why the structure in (34b) is deviant: a phrasal constituent like a relative CP cannot be a member of an  $N_1N_2$  compound like *X-gorosi* ‘X-slaughter’ (cf. lexical integrity). Clearly, then, the ill-formedness of the SA in (34b) parallels the deviance of (32b) as an FA to the compound wh-question in (31a). Both involve an irreducibly phrasal constituent being forced into compound-internal morphosyntax, and yield the same degree of degradedness. In contrast, a simple N like *noraneko* can naturally fit into the compound word, hence the acceptability of (34a). Furthermore, as shown by (35a,b), the contrast between N and NP with a relative CP naturally disappears when they serve as a simple non-compound argument NP.

Now, the non-structural approach has nothing to say about the parallelism between the SAs in (34)-(35) and the FAs in (32). The SAs in (34)-(35) involves no ellipsis, and hence they are exclusively a matter of overt syntax, while some totally independent, extra-syntactic mechanism must be invoked to explain the deviance of (32b)/(33b) as an FA to the compound wh-question in (31a).

The generalization missed by the non-structural approach here is essentially due to its core hypothesis that there is no unpronounced syntactic structure involved in FAs. In contrast, the structural approach can provide a rather straightforward account of the parallelism between the SAs and the FAs in question. Under the structural approach, the SAs in (34) and (35) are the very structures that underlie (32a,b). Specifically, in our in-situ analysis of FAs, we proposed that FAs are derived from their corresponding SAs simply by deleting all elements within the CP except the focus-marked element (without any extraneous movement involved; see Section 3). Thus, the FAs (32a,b) for (31a) and (31b) are derived simply via deletion from (34a,b) and (35a,b), respectively, as shown in (36)-(37) (glosses omitted).

(36) *Structural approach (couched in our in-situ analysis):*

- a. ~~keisatu-wa~~ [[<sub>N1</sub> NORANEKO]-[<sub>N2</sub> ~~gorosi~~]-no hannin]-o tukamaeta (no da/desu).  
 b. \*~~keisatu-wa~~ [[<sub>N1</sub> [<sub>CP</sub> KAINUSI-GA I-NAI] NEKO]-[<sub>N2</sub> ~~gorosi~~]-no hannin]-o tukamaeta  
 (~~no~~ da/desu).

- (37) a. ~~keisatu-wa~~ [[[NP NORANEKO]-o korosita] hannin]-o tukamaeta (no da/desu).  
 b. ~~keisatu-wa~~ [[[NP [CP KAINUSI-GA I-NAI] NEKO]-o korosita] hannin]-o tukamaeta (no da/desu).

Under the structural approach, then, the unavailability of (32b) as an FA to (31a) can be directly attributed to the ungrammaticality of (34b)/(36b). This analysis predicts that the set of possible FAs strongly correlates with the set of possible SAs, which is evidenced by (32) and (34)-(35).

In this section, we pointed out that the structural approach is superior to the non-structural approach, in that only the former can provide a systematic account of the parallelism between SAs and their corresponding FAs. Therefore, our results strongly indicate that FAs indeed involve the same sort of structure as their structurally isomorphic SAs.

## 5 Conclusion

In this paper, we have proposed a non-movement analysis of FAs. The availability of the collective reading of a numeral quantifier indicates that a numeral quantifier as an FA must stay in situ. In addition, the general ban on extraction out of a compound indicates that an FA to a compound wh-question must be derived without extraction out of a compound. This can be implemented in our non-movement analysis. We have also pointed out that a compound wh-question disallows certain FAs that its corresponding phrasal wh-question allows. This fact has several significant implications for the study of ellipsis. We argued that mere semantic identity/parallelism is not sufficient, and proposed a novel morpho-syntactic identity condition that holds between the remnant of deletion and its correlate (28). Specifically, for FAs, we argued that the FA must be morpho-syntactically isomorphic to the wh-element in the antecedent question. We have further shown that this condition is best captured under a structural approach to the generation of FAs, while a non-structural approach cannot make sense of the structural isomorphism. For these reasons, we conclude that our in situ structural approach provides the most suitable account of the ellipsis in FAs.

It is worth pointing out that we would not be able to reach these conclusions unless we attended to language-specific constructions in Japanese, namely compound wh-questions and their FAs. We hope that the comparative study reported in this paper will serve as a further clue to a better understanding of the nature of deletion in human language (Universal Grammar).

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