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The Syntax of Adjunct Wh-NPs

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1 Introduction

This paper investigates the type of wh-questions, studied by Kurafuji (1996a, b, 1997), in which the wh-word used is 'what,' but in which the interpretation is best translated as 'why.' Kurafuji reports that this construction is found in Japanese, Russian, and Modern Greek (1): As the translations show, 'what'-questions here are interpreted as 'why'-questions.

- (1) a. John-wa **naze/nani-o** awateteiru no? (Japanese)
John-TOP **why/what-Acc** panicking Q
'Why is John panicking?'
- b. **Pochemu/Chto** ty smejoshsja? (Russian)
why/what you laugh
'Why do you laugh?'
- c. **Giati/Ti** trehi esti aftos? (Modern Greek)
why/what runs so he
'Why is he running like this?' (cf. Kurafuji 1996a, b, 1997)

There are some pragmatic restrictions on the use of the question with this *what*. Among other things, this type of wh-question is most appropriate in a context in which the speaker is emotionally affected (i.e., puzzled, annoyed, etc.). For instance, although the examples in (2) are synonymous, (2b) with *nani-o* 'what' is best uttered in a situation in which the speaker is annoyed by John's running, or (s)he thinks that there is no need for John to run. Thus, it is more appropriate to translate *nani-o* in (2b) as "why the hell." We will come back to this point in section 4.

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- (2) a. John-wa **naze** hashitteru no?
 John-Top **why** running Q
 'Why is John running?'
 b. John-wa **nani-o** hashitteru no?
 John-Top **what-Acc** running Q
 'Why the hell is John running?'

Note that (2a) can be used in the same set of contexts suitable for (2b), but it is also felicitous in emotionally neutral contexts.

Kurafuji (1996a, b, 1997) also points out that this 'why'-like 'what' (henceforth 'adjunct wh-NP') shares some properties with true adjunct wh-phrases (such as locality effects; see below). We argue that the adjunct wh-NP is a strongly focused wh-phrase which originates as a VP-adjunct. We also claim that properties of the adjunct wh-NP bear crucially on such theoretical issues as the nature of unselective binding, i.e., the proposal that unselective binding is available for nominal wh-phrases but not for wh-adverbials (cf. Tsai (1994) and Reinhart (1995)). Based on the island sensitivity of the adjunct wh-NP in Japanese, we suggest that it is the argument vs. adjunct distinction that is relevant for unselective binding, contrary to Tsai (1994) and Reinhart (1995).

This paper is organized as follows. In section 2, we introduce more languages which allow adjunct wh-NPs. Section 3 deals with the question of where adjunct wh-NPs are base-generated. Based on Chinese data, we argue that they are adjuncts within VPs. In section 4, some peculiar properties of adjunct wh-NPs are discussed with respect to sluicing, locality, and multiple wh-questions. Concluding remarks are given in section 5.

2 More Languages with Adjunct Wh-NPs

We first demonstrate that the existence of the adjunct wh-NP is more widespread than reported by Kurafuji (1996a, b, 1997). Our preliminary investigation indicates that the adjunct wh-NP is attested also in Chinese (3), Ger-

man (4), Hebrew (5), Bulgarian (6), and Serbo-Croatian (SC) (7).¹ We will examine Chinese in the following section. As for the Bulgarian data in (6) and SC in (7), the (a)-examples are matrix questions and the (b)-examples are indirect questions.

- (3) a. John **weisheme** huang?
 John **why** hurry/panic
 'Why is John hurrying/panicking?'
 b. John huang **sheme**?
 John hurry/panic **what**
 'Why is John hurrying/panicking?' (Chinese)²
 c. Wo xiang-zhidao [John huang **sheme**].
 I wonder John hurry/panic **what**
 'I wonder why John is hurrying/panicking.'
- (4) Ich frage mich, **warum/was** Hans so gestresst ist.
 I ask myself **why/what** Hans that stresses is.
 'I wonder why Hans is so stressed.' (German)
- (5) a. **Lama/Ma** ata rac?
why/what you run
 'Why are you running?' (Hebrew)
 b. **Lama/Ma** ata kore et ha-sefer ha-ze?
why/what you read Acc the-book the-this
 'Why are you reading this book?'

¹ English allows a similar construction with the verb *care*. As shown in (ia), *care* does not take a direct object but allows *what* to cooccur, as in (ib). Its interpretation is similar to (ii).

- (i) a. John cares *(about/for) a novel.
 b. What do you care if John buys a new car?
 (ii) Why do/should you care if John buys a new car?

² Kurafuji (1996a) claims that Chinese does not have the adjunct wh-NP, based on the ungrammaticality of (i).

- (i) *Ni **weisheme**/***sheme** kude zheme lihai?
 you **why/what** cry so much
 'Why do you cry so much?'

As can be seen in (3), however, the adjunct wh-NP does occur in Chinese, but is restricted to a postverbal position.

- (6) a. **Zašto/Kakvo** si se umârlusila?
why/what aux self get down
 'Why are you so depressed?' (Bulgarian)
- b. Čudja se **zašto/kakvo** si se umârlusila.
 wonder (1, sg.) self **why/what** aux self get down
 'I wonder why you are so depressed.'
- (7) a. **Zašto/Šta** si ustao tako rano?
why/what have get up so early
 'Why did you get up so early?' (Serbo-Croatian)
- b. Pitam se **zašto/šta** si ustao tako rano.
 ask (1, sg) self **why/what** have get up so early
 'I wonder why you got up so early.'

3 Adjunct Wh-NPs as VP-adjuncts

Where does the adjunct wh-NP originate? We believe that Chinese is particularly informative in dealing with this question, since, like Japanese, it is a wh-in-situ language and, unlike Japanese, exhibits a rather rigid word order. Based on the evidence from this language, we suggest that the adjunct wh-NP is a VP-level adjunct.

As we can easily verify in (3), pure adjuncts such as *weisheme* 'why' and the adjunct *sheme* 'what' occupy different positions; the former occurs preverbally and the latter postverbally. Although the phrase structure status of Chinese has been under debate, let us follow Huang (1994) and assume that verbs in Chinese do not raise out of VP overtly. Some evidence for this claim is provided by the fact that verbs in Chinese never precede a negative element such as *bu* 'not,' as shown in (8). In this respect, Chinese patterns with English rather than French (cf. 9).

- (8) Negation *bu*: √ preverbal, * postverbal
- a. John bu xihuan Lisi.
 John not like Lisi
 'John does not like Lisi.'
- b. *John xihuan bu Lisi
 John like not Lisi
 'John does not like Lisi.'

- (9) a. John does not love Mary. (*John runs not.)
 b. John ne aime pas Mary.
 John like Neg Mary
 'John does not like Mary.'

In addition, the adjunct wh-NP *sheme* 'what' occurs only postverbally:

(10) adjunct wh-NP *sheme*: * preverbal, √ postverbal

- a. John huang **sheme**?
 John hurry/panic **what**
 'Why is John running/panicking?'
 b. *John **sheme** huang?
 John **what** hurry/panic (Chinese)

(11) to (13) show various kinds of adjuncts in Chinese, only the first of which patterns with adjunct wh-NPs: nominal duration adverbs in (11). Temporal/locative PP adjuncts occur only preverbally (12), and other manner adjuncts (involving *de*) occur either preverbally or postverbally (13).

(11) Duration adverbs: * preverbal, √ postverbal

- John (*san-ci) pao-le san-ci.
 John run-Asp three-times
 'John ran three times.'

(12) PP adjuncts (temporal/locative): √ preverbal, * postverbal

- John [zai libaitian] shuejiao (*zai libaitian).
 John on Sunday sleep
 'John sleeps on Sunday.'

(13) Manner adverbs: √ preverbal, √ postverbal

- a. John [hen renzhen de] gong-zuo.
 John very serious DE work
 'John works very seriously.'
 b. John gong-zuo [de hen renzhen].
 John work DE very serious

In fact, the adjunct wh-NP *sheme* 'what' and nominal duration adverbs show an almost parallel distribution in transitive contexts as well, as shown in (14) and (15), thereby confirming the adjunct status of *sheme* 'what.'

- (14) a. John qiao-le **san-ci** men.
 John knock-ASP **three-times** door
 'John knocked on the door three times.'
 b. John qiao men qiao-le **san-ci**.
 John knock door knock-Asp **three-times**
 'John knocked on the door three times.'
- (15) a. John qiao **sheme** men?
 John knock **what** door
 'Why is John knocking on the door?'
 b. ?John qiao men qiao **sheme**?
 John knock door knock **what**
 'Why is John knocking on the door?'

As for the structure of (14a), Huang (1994) argues that there is a V-to-V movement within VP, as shown in (16) (for Huang, XP is identified as a nominal IP, the gerundive construction).

- (16) John Infl [_{VP} knock [_{XP} three-times [X [_{VP} t_{knock} door]]]]
 ↑ _____ | (cf. Huang 1994)

Let us consider (15a). The fact that the adjunct wh-NP occurs between a verb, which stays within VP, and the direct object indicates that adjunct wh-NPs (as well as duration adverbs) are within VP.³ Note that the pure adjunct wh *weisheme* 'why' occurs higher, as suggested by the word order in (3a). We suggest that *weisheme* 'why' is an IP-level adjunct while the adjunct *sheme* 'what' is a VP-level adjunct.

4 Adjunct Wh-NPs and Some Theoretical Issues

In this section, we discuss a few peculiar properties of the adjunct wh-NP which distinguish them from other 'ordinary' wh-phrases.

4.1 Sluicing

One curious aspect of the adjunct wh-NP is the fact that cross-linguistically, it does not occur in sluicing constructions, unlike other wh-phrases, includ-

³ This view is different from Kurafuji's (1997) claim that adjunct wh-NPs are base-generated outside the VP. We cannot discuss his arguments for lack of space. See Ochi and Hsin (in progress) for details.

ing 'why'. In (17-20), we show data from four languages to illustrate the point: Japanese, German, Hebrew, and Serbo-Croatian.

- (17) John-ga awateteiru ga, ...
 John-Nom panicking but
 a. dare-mo **naze** (kare-ga awateteiru) ka siranai.
 nobody **why** he-Nom panicking Q know-not
 'John is panicking, but nobody knows why.'
 b. dare-mo **nani-o** ??(kare-ga awateteiru) ka siranai.
 nobody **what-Acc** he-Nom panicking Q know-not
 'John is panicking, but nobody knows why.' (Japanese)⁴
- (18) Hans ist gestresst, aber ...
 Hans is stressed, but
 a. ich weiss nicht **warum** (Hans ist gestresst).
 I know not **why** Hans is stressed
 b. ich weiss nicht **was** *(Hans ist gestresst).
 I know not **what** Hans is stressed
 'Hans is stressed but I don't know why.' (German)
- (19) Yosi ruc aval aui lo yodea **lama**/***ma**.
 Yosi run but I not know **why/what**
 'Yosi is running but I don't know why.' (Hebrew)

⁴ Some Japanese speakers find (17b) marginally acceptable. Interestingly, however, even those speakers do not accept the relevant sluicing example without the Case marker *-o* (i), although the Case marker on the wh-phrase is normally optional in sluicing (ii) (in fact, dropping of the Case marker is preferred for many speakers).

- (i) *... dare-mo [**nani** ka] siranai.
 nobody **what** Q know-not
 '... nobody knows why.'
- (ii) John-ga nanika-o katekita ga, daremo **nani(-o)** ka siranai.
 John-Nom something-Acc bought but nobody **what-Acc** Q know-not
 'John bought something, but nobody knows what.'

- (20) A: Vidi Ivana, sav se pokunjio.
 look-at Ivan, all self got-depressed
 'Look at Ivan, he is all depressed.'
- B: a. Da, zanima me **zašto** (se pokunjio).
 yes it-interests me **why** self got-depressed
 'Yes, I'd like to know why (he got depressed).'
- b. Da, zanima me **šta** *(se to on pokunjio).
 yes it-interests me **what** self he got-depressed
 'Yes, I'd like to know why (he got depressed).' (SC)

We suspect that this fact has something to do with the strongly focused nature of the adjunct wh-NP. As noted at the outset, a question with the adjunct wh-NP is always accompanied by the speaker's strong emotions (often negative) toward the event or state described in that question, which is not always the case with pure 'why'-questions (see (2b)).

Let us therefore entertain the following hypothesis.

- (21) A 'strongly' focused wh-phrase does not license sluicing.

Note in this connection that the English *wh-the-hell* phrase (cf. Pesetsky 1987) likewise does not occur in sluicing constructions (22b').

- (22) John seems to have kissed someone, but ...
- a. I have no idea who he kissed.
 a.' I have no idea who.
 b. (?)I have no idea who the hell he kissed.⁵
 b.' *I have no idea who the hell.

Further, as Lasnik and Saito (1992) point out, the *wh-the-hell* phrase patterns with adjunct wh-phrases in its distribution. (23a-b) shows that in English, only argument wh-phrases are allowed in-situ. As shown in (23c), the *wh-the-hell* phrase patterns with adjunct wh-phrases in this respect. Also, movement of the *wh-the-hell* phrase out of an island yields a strong violation as shown in (24c).

⁵ Speakers tend to find (22b) slightly awkward. Still, what is crucial for us is the fact that all speakers find a clear contrast between (22b) and (22b').

- (23) a. Who bought what?
 b. *Who left why?
 c. *Who bought what-the-hell? (cf. Pesetsky 1987)
- (24) a. ??What do you wonder [who wrote t]?
 b. *Why do you wonder [who left]?
 c. *What the hell do you wonder [who wrote t]?
 (Lasnik and Saito 1992)

Thus the adjunct wh-NP and the *wh-the-hell* phrase share several properties in common. In order to account for the adjunct-like behavior of the *wh-the-hell* phrase, Lasnik and Saito (1992) argue that this phrase is focused in nature and must occur in an adjoined position at some point in the derivation. If so, the fact shown in (22b') may fall under the scope of the hypothesis in (21).

There is another case of sluicing from SC which may be relevant. As Željko Bošković (p.c.) points out, wh-questions in SC with the complementizer *li* do not license sluicing either. *Li* is normally used in cleft-type constructions and it involves strong focus. This is another case where sluicing is not allowed due to the strongly focused element being involved.

- (25) Marija voli nekog. *Pitam se koga li.
 Maria likes someone I-ask self who Q
 'Maria like someone. I wonder who.'

The question is why strongly focused wh-phrases (or complementizers) resist sluicing. Note that sluicing is one way of enhancing the focusing property of the wh-phrase. It could be then that sluicing wh-phrases which are already 'strongly' focused wh-phrases is somewhat redundant. But we must leave this question open.

4.2 Locality

The adjunct wh-NP also raises interesting questions for locality issues. We will discuss two language groups separately; wh-in-situ languages and wh-fronting languages.

Let us first discuss wh-in-situ languages. As observed by Kurafuji (1996a, b, 1997), the interpretation of the adjunct wh-NP *nani* 'what' in

Japanese is not clause-bound, as shown in (26a), although it is sensitive to islands such as the complex NP island (26b).⁶

- (26) a. (?)Kimi-wa [John-ga **nani-o** awateteiru to] omou no?
 you-Top John-Nom **what-Acc** panicking that think Q
 'Why do you think that John is panicking?'
 b. *Kimi-wa [[**nani-o** awateteiru] hito]-o shikatta no?
 You-Top **what-Acc** panicking person-Acc scolded Q
 '*Why did you scold [a person [who was panicking t]]?'

In this respect, the adjunct wh-NP in Japanese patterns with true adjunct wh-phrases such as *naze* 'why.' In languages such as Chinese and Japanese, adjunct wh-phrases but not argument wh-phrases are subject to islands such as the Complex NP constraint (cf. Huang 1982 and Nishigauchi 1986).

- (27) a. John-ga [[**nani-o** katta] hito]-ni atta no?
 John-Nom **what-Acc** bought person-Dat met Q
 '??What did John meet a person [who bought t]?'
 b. *John-ga [[**naze** hon-o katta] hito]-ni atta no?
 John-Nom **why** book-Acc bought person-Dat met Q
 '*Why did John meet a person [who bought a book t]?'

The fact that the adjunct wh-NP patterns with *naze* 'why' has theoretical implications for the nature of unselective binding.⁷ Tsai (1994) and Reinhart (1995) claim that only nominal wh-phrases can be licensed by unselective binding (hence without movement), an option not available for adverbial wh-phrases. Hence, non-nominal wh-phrases such as *naze* 'why' must move to the spec of the Q-Comp for interpretation, thus violating the island constraint in examples such as (27b).

⁶ We will leave aside Chinese, since there is a variation with respect to the locality of the adjunct *sheme* 'what.' Some speakers accept examples like (i) while others find such examples somewhat degraded.

(i) Ni renwei John qiao **sheme** men?
 you think John knock **what** door
 'Why do you think [John is knocking on the door t]?'

⁷ We thank Nobuhiro Miyoshi (p.c.) for this point.

Regarding the noun vs. non-noun distinction, Reinhart provides empirical evidence for the distinction. Consider (28). Let us assume with Chomsky (1995) that English *wh*-in-situ is licensed via unselective binding. Given that *how* and *what way* are synonymous, the contrast in grammaticality in (28) could be due to the categorial difference between the two *wh*-phrases; *what way* is an NP whereas *how* is not. Hence only *what way* in (28b) can be licensed by unselective binding, according to Reinhart.

- (28) a. *Who kissed Mary how?
 b. Who kissed Mary [_{NP} what way]? (cf. Reinhart 1995)

As we saw in (26b), however, the adjunct *wh*-NP is not licensed by unselective binding, despite the fact that it is a noun. Hence, we conclude that the nominal status of an in-situ *wh*-phrase is not sufficient for unselective binding. Then, departing from Tsai (1994) and Reinhart (1995), we make the following claim:

- (29) Only argument *wh*-(nominal) phrases can be licensed via unselective binding.

It is not totally obvious to us if 'argumenthood' is a sufficient condition for unselective binding, or if a *wh*-phrase must also be a nominal for the purpose of unselective binding. Either way, according to (29), the adjunct *wh*-NP cannot be licensed via unselective binding, because it is not an argument (although it remains to be seen how to make the argument vs. adjunct distinction precise in current theoretical terms).

Given this discussion, we need to reconsider Reinhart's (1995) empirical argument in favor of the noun vs. non-noun distinction in (28). Recall that according to Reinhart, *what way* in (28b) can be licensed in-situ due to its nominal status, whereas *how* in (28a) cannot, because it is not a noun. But this is not conclusive, since (28b) might contain a null preposition in the sense of Huang (1982). Under Huang's analysis, then, *what way* is an argument of the preposition as shown in (30a) while *how* is not, as shown in (30b).

- (30) a. Who kissed Mary [_{PP} (in) [_{NP} what way]]?
 b. *Who kissed Mary [in/by [how]]? (cf. Huang 1982)

In short, Reinhart's example is not conclusive in this respect. On the basis of the discussion here, we conclude that 'argumenthood' plays a crucial role for the purpose of unselective binding.

Let us turn to *wh*-fronting languages. Surprisingly, the interpretation of the adjunct *wh*-NP is clause-bound, which is confirmed on a cross-linguistic scale. This again distinguishes the adjunct *wh*-NP from other adjunct *wh*-phrases, including 'why.'

- (31) a. **Warum** glaubst du daß er so lange schlafat?
why believe you that he so long sleeps
 'Why do you believe [that he sleeps so long] t?'
 'Why do you believe [that he sleeps so long t]?'
 b. **Was** glaubst du daß er so lange schlafat?
what believe you that he so long sleeps
 'Why do you believe [that he sleeps so long] t?'
 *'Why do you believe [that he sleeps so long t]?' (German)
- (32) a. **Zašto** Petar tvrdi da se Ivan pokunjo?
why Peter claims that self Ivan got-depressed
 'Why does Peter claim [that Ivan is depressed] t?'
 'Why does Peter claim [that Ivan is depressed t]?'
 b. **Šta** Petar tvrdi da se Ivan pokunjo?
what Peter claims that self Ivan got-depressed
 'Why does Peter claim [that Ivan is depressed] t?' (SC)
 *'Why does Peter claim [that Ivan is depressed t]?'

The same pattern obtains when we consider English *wh-the-hell* phrases. Although the argument *wh-the-hell* phrase can undergo long-distance movement as shown in (33), the clause-bound restriction crops up with adjunct *wh-the-hell* phrases. In (34b), it is very difficult to get the reading in which *why the hell* modifies the embedded clause.⁸

- (33) What the hell do you think that John bought t?

⁸ The construction with the verb *care* (see footnote 1) shows the same clause-bound restriction, as shown in (ia). This contrasts with (ib) with *why*.

- (i) a. *What do you think he cares if Mary buys a new car?
 b. Why do you think he cares if Mary buys a new car?

- (34) a. Why do you think John is angry? (ambiguous)
 b. Why the hell do you think John is angry? (matrix reading only)

At this point, we have no account of why there is such a restriction on adjunct wh-NPs in overt wh-fronting languages (and adjunct *wh-the-hell* phrases in English).⁹

4.3 Multiple Wh-Questions

Finally, we note an additional puzzle regarding adjunct wh-NPs. With the exception of Japanese, the adjunct wh-NP does not occur in multiple wh-questions.

Japanese allows the adjunct wh-NP in multiple wh-questions, as discussed by Kurafuji (1996a, b) (and our informants confirm this judgment).¹⁰

⁹ We cannot adopt Collins' (1991) analysis of *how come* in English, which also shares the clause-bound restriction.

- (i) How come you think John bought a car? (matrix reading only)

Collins argues that *how come* occurs under C and does not undergo long-distance movement (due to the Head Movement Constraint). But this analysis does not extend to adjunct wh-NPs. For instance, in languages such as Bulgarian and Serbo-Croatian, the adjunct wh-NP occurs with an overt interrogative C.

- (i) **Kakvo** li te pitom?
 what C you ask-I (Bulgarian)
 'Why on earth am I asking you? (why do I even bother to ask you?)'

Also, *why-the-hell* in English triggers subject-aux inversion, unlike *how come*, which shows that it is an XP, not a head.

¹⁰ As noted by Kurafuji, the adjunct wh-NP in Japanese exhibits anti-superiority effects (on a par with *naze* 'why'). In fact, the effect seems even stronger in (ib) than in (ia).

- (i) a. ?*Naze dare-ga awateteru no?
 why who-Nom panicking Q
 'Who is panicking why?
 b. *Nani-o dare-ga awateteru no?
 what-Acc who-Nom panicking Q

- (35) a. **Dare-ga naze** awateteru no?
who-Nom why panicking Q
 'Who is panicking why?'
 b. **Dare-ga nani-o** awateteru no?
who-Nom what-Acc panicking Q
 'Who is panicking why?'

However, all other languages we checked disallow the adjunct wh-NP in multiple wh-questions. Note that Serbo-Croatian does not show superiority effects in simple matrix questions (see Bošković 1997), as shown in (40a-b). As (40c-d) illustrate, multiple wh-questions with the adjunct wh-NP are ungrammatical irrespective of the order of wh-phrases.

- (36) a. **Koj zašto** je zamil taja kola?
who why her za-wash this car
 '*Who is washing this car why?'
 b. ***Koj kakvo** je zamil taja kola? (Bulgarian)
who why her za-wash this car
 (37) a. (?)**Shei weisheme** qiao men?
who why knock door
 'Who is knocking on the door why?'
 b. ***Shei qiao sheme** men? (Chinese)
who knock what door
 (38) a. ?**Wer schlaeft warum** so lange?
who sleeps why so long
 '*Who sleeps why so long?'
 b. ***Wer schlaeft was** so lange? (German)
who sleeps what so long
 (39) a. ?**Kto zachem** toropitsja?
who why hurrying
 '*Who is hurrying why?'
 b. ***Kto chto** toropitsja? (Russian)
who what hurrying
 (40) a. **Ko se zašto** pokunjio?
who self why get-depressed
 '*Who is depressed why?'
 b. **Zašto se ko** pokunjio?
why self who get-depressed

- c. ***Ko** se **šta** pokunjio?
who self **what** get-depressed
 '*Who is depressed why?'
 d. ***Šta** se **ko** pokunjio? (SC)
what self **who** get-depressed

Why is Japanese exceptional? Also, why is there such a restriction in other languages? We must leave these questions open for future research.

5 Conclusion

To summarize, we claimed in this preliminary report that the adjunct wh-NP is a strongly focused wh-phrase which is base-generated as an adjunct within VP. The fact that it cannot be licensed via unselective binding shows that it is the argument vs. adjunct distinction that is crucial for unselective binding, not the noun vs. adverb distinction, as argued by Tsai (1994) and Reinhart (1995). Many questions still remain, however, and we must leave them for future studies.

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