

1 Introduction

This paper discusses questions that involve some elements marked with phonological focus and a particle *wa* (contrastive *wa* (Kuno 1973)), as illustrated in (1). In (1), what *wa* marks is a proper noun, and the question is a polar question. It is also possible to mark a *wh*-phrase with *wa*, as shown in (2). However, a constituent question with a *wa*-marked *wh*-phrase is very marked, and it is usually judged infelicitous when it is uttered out of the blue. Note that using *wa* in a polar question, as shown in (1), is not a default way to ask questions either and therefore is considered as marked.

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| (1) | [Taro] _F -WA kimasita ka?
Taro-WA came Q
'Did Taro _{CT} come?' | (2) | [Dare] _F -WA kimasita ka?
who-WA came Q
'Who _{CT} came?' |
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The purpose of this paper is to explain exactly what makes these sentences marked compared to non-*wa* counterparts. Note that adding *wa* to questions does not change the information requested by them. In other words, what *wa* is adding is not at-issue content but rather, it is conveying information about the context of discourse. This accords with the idea in Farkas and Roelofsen (2017) that marked questions have special discourse effects that default questions do not have.

In Japanese, which uses a variety of particles in questions, it is natural to suppose that at least some of these particles contribute conventional discourse effects. In this paper I claim that this is the case with *wa* in interrogatives. In particular, I propose that *wa* in both (1-2) marks a contrastive topic, which presuppose a complex discourse structure (Büring 2003, Constant 2014) built up on Questions under Discussion (QuDs (Roberts 1996)). The discourse effects of *wa* questions are derived based on the focus semantic value of the question (see Constant (2014)). In the process we also address a problem raised by Constant concerning the interaction of CT marking with *wh*-expressions.

2 Background

It is well-known that contrastive *wa* can appear in various kinds of sentence types (Tomioka 2009a). Questions are one of them, and it is not hard to find an example in which contrastive *wa* is used in polar questions and marks a non-*wh* phrase, as illustrated in (1). However, when a question is a constituent question and *wa* is attached to a *wh*-phrase, it is marked and judged infelicitous out-of-the-blue: (2).

Wa-constituent questions can be used felicitously when an appropriate context is set up. One such context is where there are multiple groups of individuals the speaker is trying to make a contrast about, which is illustrated in (3). In this case, what is contrasted by using *wa* is those who ate udon and others who ate soba.

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| (3) | [Dare] _F -WA udon-o tabete, [dare] _F -WA soba-o tabeta no?
who-WA udon-ACC ate who-WA soba-ACC ate Q
'Who _{CT} ate udon and who _{CT} ate soba?' |
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However, it is not the case that an explicit contrasted question is always necessary. *Wa* can target an implicit question under discussion that is introduced in the previous context, for example, as shown in (4).

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| (4) | a. A: paatii-wa doo datta?
party-TOP how was
'How was the party?' |
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- b. B: tumannakatta. Jiro kitenakatta si.
 was boring Jiro did not come
 ‘It was boring (since) Jiro wasn’t there.’
- c. A: ee, jaa, [dare]_F-wa kiteta no?
 well then who-WA came Q
 ‘Well, then, who was there?’

In this case, A’s question introduces a big QuD to be resolved: How the party was. Then B answers it by saying it was boring and mentioning an absentee at the party. This answer given by B introduces an implicit question: Who did not come to the party. B’s question asks who the attendees were and contrasts with the implicit question. This example shows that *wa*-constituent questions can be licensed by an implicit question given in the discourse.

3 Analysis

I assume that *wa* has the same properties in both polar and constituent questions: it occurs with an element that denotes a set of focused alternative (Rooth 1985, 1996) and adds some extra information about the discourse. To explain this effect, I propose that *wa* be analyzed as a contrastive topic marker. It is well known that contrastive topics are strategically used in the discourse to project what the discourse structure looks like in the immediate context. As a tool to derive the semantic denotations of questions with a contrastive topic, I will adapt Topic Abstraction proposed by Constant (2014), which is given here as (5). In the following section, I will show what the semantic denotations look like and how they can be connected to the discourse effects of *wa* questions.

(5) *Topic Abstraction* (Constant 2014, 95)

- a. $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^o = \lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^o$ (Ordinal Semantic Value)
- b. $\llbracket \text{CT-}\lambda_i \phi \rrbracket_g^f = \{ \lambda x. \llbracket \phi \rrbracket_{g[i \rightarrow x]}^f \}$ (Focus Semantic Value)

3.1 Polar Questions

Let us first look at the results of applying Topic Abstraction to a polar question like (1). Constant analyzes this kind of question by assuming that a question operator takes scope under the CT operator. That said, the ordinal semantic value and the focus semantic value of (1) are derived as below:

- (6) a. *The ordinal semantic value of ‘Did Taro_{CT} come?’*
 $\llbracket (1) \rrbracket_g^o = \llbracket [\text{Taro}]_F [\text{CT-}\lambda_3 Q[t_3 \text{ came}]] \rrbracket_g^o$
 $= \{ \text{Taro came} \} \rightarrow \text{Did Taro come?}$
- b. *The focus semantic value of ‘Did Taro_{CT} come?’*
 $\llbracket (1) \rrbracket_g^f = \llbracket [\text{Taro}]_F [\text{CT-}\lambda_3 Q[t_3 \text{ came}]] \rrbracket_g^f$
 $= \{ \{ \text{Taro came} \}, \{ \text{Jiro came} \}, \{ \text{Saburo came} \} \} = \text{For each person, did they come?}$

The ordinary semantic value in (6a) denotes a set that consists of a single proposition, which can be regarded as the denotation of yes-no questions (Büring 2003, 532). By contrast, the focus semantic value is going to be a set of sets, each of which consists of a singleton proposition, namely a set of polar questions. Each of the polar questions differs from the other with respect to the value marked by phonological focus. In other words, the questions range over a set of focus alternatives.

The ordinary semantic value concerns at-issue content, namely whether Taro came or not. So the denotation is exactly the same as what we would get with a question without a phonological focus. This is desirable because the information the speaker asks for with a *wa* question is the same as the information she asks for with its *wa*-less counterpart.

What does the focus semantic value tell us then? It basically tells us what are possible questions to ask in the discourse. In other words, it conveys what could have been immediate QuDs in context. In this particular case, other questions that could have been asked concern other people in the domain and whether or not they came to the party. By projecting these possible questions in the discourse,

the speaker makes the question she wants an answer to stand out relative to these other possible questions.

The result we get after applying Topic Abstraction is as we saw above, a set of polar questions. This is in effect very similar to the approach taken in Tomioka (2009a). The difference is that no speech act operator is assumed.

3.2 Constituent Questions

Now let us turn to looking at constituent questions. Constant did not closely look at the case where a CT marks a *wh*-phrase, and just speculates that constituent questions with and without a CT could have different ordinal semantic value, as shown in (7).

(7) *The ordinary semantic values of constituent questions* (Constant 2014, 113)

- a. $\llbracket \text{Q who came} \rrbracket_g^o = \{\text{Fred came, Mary came, ...}\}$
= Who came?
- b. $\llbracket \text{Q who CT-}\lambda_4 t_4 \text{ came} \rrbracket_g^o = \{\{\text{Fred came}\}, \{\text{Mary came}\}, \dots\}$
= For each person, did they come? \rightsquigarrow Who came?

Note that here Q, a question operator takes wide scope over the *wh*-phrase and the CT operator. This contrasts with the configuration we saw for CT-polar questions, in which the question operator takes scope under the CT operator. The question operator needs to take wide scope as long as we adopt the semantics of questions by Beck (2006): a question operator must immediately command the *wh*-phrase. Otherwise it is not possible to get an interpretation of the sentence. What is interesting here is that even if it is possible to get the different semantic denotations for constituent questions with and without a CT, the information asked by the two questions is the same. In other words, answers to these two questions will be identical. The problem posed by Constant is how those two different denotations can be used in a language.

In this paper, I will assume that *wa* attached to the *wh*-phrase is still a contrastive topic marker, but argue that we need different configurations of semantic compositions from those proposed by Constant in order to account for the data. In particular, as opposed to Constant's approach, I propose that a CT operator takes wide scope over the question operator even in the case of constituent questions.¹ Basically the *wh*-phrase is treated as an indefinite pronoun, which denotes a set of people in the domain. The ordinary semantic value ends up being the same as constituent questions without *wa*, which indicates that *wa* does not change the information requested by the question. The focus semantic value of *wa* constituent questions, however, is different from the ordinary semantic value and also from constituent questions without a CT. The focus semantic value is a set of polar questions, which is the same as the one with polar questions with *wa*.

(8) *CT-constituent questions in Japanese*

- a. $\llbracket \text{who [CT-}\lambda_4 \text{Q [} t_4 \text{ came]} \rrbracket_g^o = \{\text{Fred came, Mary came, ...}\}$
= Who came?
- b. $\llbracket \text{who [CT-}\lambda_4 \text{Q [} t_4 \text{ came]} \rrbracket_g^f = \{\{\text{Fred came}\}, \{\text{Mary came}\}, \dots\}$
= For each person, was it the person who came?

The focus semantic value also checks who are people that came. However, the way to check it is different from what is suggested by the ordinal semantic value — it directs the addressee to check for each person whether it was the case that the person came. An important thing to note here is that once the addressee finishes collecting individuals that got the *yes* answer to the corresponding

¹The reason Constant changed the position of the question operator would be just because, as far as Beck's semantics of questions is adopted, the question will be uninterpretable whenever the question operator does not immediately command the *wh*-phrase. That is largely motivated by intervention effects: When there is another operator intervening between the question operator and the *wh*-phrase, the question ends up being ill-formed or infelicitous. In Japanese, however, we have different kinds of intervention effects from those observed in English (Tomioka 2007), which are not caused by syntactic configurations but by infelicity of information-packaging.

polar questions and flattens the answer, it will be indistinguishable from the answer to the question denoted by the ordinary semantic value. However, constituent questions with and without *wa* give the addressee different directions as to how to reach the answer.

In sum, *Wa*-constituent questions, therefore, are marked because it has a distinct focus semantic value derived by that particle *wa* plus the phonological focus. It is because of those effects that *wa*-constituent questions are degraded in out-of-blue contexts. The context needs to be such that it is reasonable for the person who uses a *wa*-question directs their addressee to go through a set of polar questions and pick up the ones that got a *yes*-answer. What can license such a context is another question that targets the same domain of individuals and is contrasted with the *wa*-question. As shown in the introduction, such questions can be either explicit or implicit.

4 Consequences

Treating *wa* as a CT and analyzing *wa* questions accordingly has some good consequences. One of them is mentioned in the previous section: the focus semantic value can tell us the underlying QuD structure that the speaker has in their mind when asking a question. The QuD structure also indicates what kind of strategy the addressee is supposed to employ in answering the question. With *wa*-constituent questions, in particular, it is easy to see a difference — the addressee is directed to check the list of alternatives one by one and then provide the information requested by the question. In this section, I will show some other empirical observations that can be accounted for by employing the proposal sketched in the previous section.

4.1 *Wa* used in answer to *Wa*-questions

When a question is marked by *wa*, it is natural to use *wa* in answering the question. This applies to both constituent questions and polar questions, as shown by (9b-10b). This can be explained by assuming *wa* used in the answer is also contrastive *wa* and therefore a CT. The focus semantic value of (9b), for example, ends up with the same as (8b), namely a set of polar questions. In other words, by using *wa* in the answer, the speaker who answers the *wa*-marked question can indicate that they did follow the direction given by the *wa*-question. They checked that the answer to the question *Did Taro come?* was *yes*, and use the individual in the answer as a result. The appearance of *wa* both in the question and the answer can be accounted for assuming that *wa* is used here to mark a CT and Topic Abstraction is applied to both sentences in the same way.

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|-----|----|---|------|----|--|
| (9) | a. | [Dare] _{F-WA} kimasita ka?
who-WA came Q
'Who _{CT} came?' | (10) | a. | [10-nin] _{F-WA} kimasita ka?
10-CL-WA came Q
'[10 people] _{CT} came?' |
| | b. | [Taro] _{F-WA} kimasita
Taro-WA came
'Taro _{CT} came.' | | b. | Hai, [10-nin] _{F-WA} kimasita.
yes, 10-CL-WA came
'[10 people] _{CT} came.' |

4.2 Weaker ignorance inferences from *wa* answers to polar questions

Let us look at (10a) next. Here *wa* is marking a numeral and the question is a polar question. The answer to the question is also marked by *wa*. In this case, [10-nin]_{F-WA} can roughly be translated as *at least 10 people*. Therefore, if the QuD asks the exact number of people, answering with (10b) is likely to trigger the ignorance effect that the speaker does not know the exact number of the people who came. This is simply predicted by the cooperative principle (Grice 1975). If the number of people were actually exactly 10 and the speaker knew it, contrastive *wa* would not be used because the focus invokes alternatives, which will not be necessary if the speaker knows the exact number.²

By contrast, if (10b) is used as an answer to a polar question with *wa* such as (10a), ignorance inferences are not readily available. This is predicted by the analysis given here. The question in

²This does not necessarily mean that ignorance inferences are always available, however. When a context establishes a possible contrast between a number and another, contrastive *wa* does not trigger ignorance inferences.

(10a) is asking whether it was the case that ten or more people came.³ The question also indicates that there are other possible numbers that can be questioned by projecting a set of polar questions that range over numbers. However, the ordinary semantic value will tell us that the number ten is of particular interest in the immediate context. Answering with *wa* conveys acknowledgment of such a structured discourse and confirms that the answer to the question *Did 10 people come?* was indeed *yes*. Since using *wa* is a way to acknowledge the QuDs provided by the question in this case, ignorance inferences are not conveyed. An experiment has shown that ignorance inferences are weaker when the QuD is a polar question with *wa* (Hirayama and Brasoveanu 2017). This behavior of *wa* is similar to the behavior of *at least* in English (Westera and Brasoveanu 2014) in that *wa* does convey ignorance inferences under certain QuDs (e.g., *How many*-questions) but when the minimum number is under discussion, it does not necessarily trigger such inferences.

4.3 *Wa*-questions as biased questions

I argue that *wa*-questions have different focus semantic values from questions that do not have *wa*. In particular, the focus semantic value ends up being a set of polar questions, which can make an implicit direction as to how to answer the question; checking each alternative one by one. In turn, the focus semantic value can indicate that the speaker has a bias that there should be some individual that returns a *yes* answer to the question. These observations suggest that *wa*-questions can be a type of biased question that can convey the speaker's private bias (Sudo 2013). The content of bias varies depending on whether the question is a polar question or a constituent question.

Polar questions with *wa* end up being biased questions that convey that the speaker has the bias that the answer to the question is to be *yes*. This effect can be obtained from the fact that the focus semantic value indicates there are other possible questions to be asked. The speaker chooses one of them as a question that they actually ask. Then there should be some reason why the speaker chose that particular question. I claim that their private bias could be a motivation. Actually, in a context where it seems that the speaker does not have any bias, the *wa*-question sounds degraded. If B in (11) knows Taro is a person who likes a party, the dialogue below is more natural.

(11) Context: B does not know Taro at all.

A: The party was boring. Jiro did not come and Saburo did not come, either.

B: (Randomly recalled Taro's name) #Well, [Taro]_F-*wa* was there?

When *wa* marks a *wh*-phrase in a constituent question, the speaker's bias is that there should be at least one polar question that gets a *yes* answer among the set consisting of polar questions, which is derived as the focus semantic value. Note that constituent questions themselves do have existential presuppositions. For instance, a question '*What did Taro buy yesterday?*' has a presupposition that Taro bought something yesterday, and the question is seeking what Taro bought. However, this presupposition can be canceled because '*Nothing.*' can be accepted as an answer without any problem. In addition, this existential presupposition can be canceled easily under the verb *know* (Groenendijk and Stokhof 1984), as shown in (12).

(12) If Hanako knows what Taro bought yesterday and actually Taro bought nothing yesterday, Hanako knows Taro bought nothing yesterday.

The existential presupposition derived by *wa*, however, seems to be stronger than one that constituent questions have in nature.⁴ When we put *wa* to *what* in (12), the result is infelicitous. The presupposition by *wa* is, therefore, not cancellable. As a result, *wa* constituent questions can convey private bias, in that the speaker believes that there should be at least some entity that will give them a *yes* answer. In other words, it conveys the bias that disfavors *nothing* as an answer to the question.

³I assume semantically a number *n* means *n* or more, and "exactly" interpretations come from the Gricean reasoning.

⁴The presupposition that *wa* questions have is very similar to one that *naze* has in terms of that they cannot be cancelled (Tomioka 2009b).

5 Conclusion

In this paper, I discussed in what context and how *wa*-questions can be licensed. I argued that the behavior of *wa*-questions can be best explained by assuming *wa* is a contrastive topic and used an operation called Topic Abstraction proposed by Constant (2014) to derive the focus semantic values of *wa*-questions. I have also shown how the focus semantic value can be used to account for the contexts in which *wa*-questions can be used, as well as for empirical data concerning these questions.

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