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How Topical is the Contrastive *Wa*?

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1. Introduction

Japanese has a topic marker *wa*, which is unique in that it is morphologically realized. Kuno (1973) argues that there are two usages of *wa*: thematic and contrastive usages. It has been assumed that thematic *wa* never has focus meaning and establishes a topic-comment relationship while contrastive *wa* can include focus meaning and entails a contrastive set that consists of the *wa*-marked entity and the other entities of the same category. For instance, *Taro-wa* in (1b) is thematic because it never bears focus meaning and creates a topic-comment relationship (topic=*Taro* and comment=*is a doctor*). In contrast, *Taro-wa* in (2b) is contrastive because it entails the contrastive proposition that *Taro passed the exam, but other students did not*. In other words, contrastive *wa* not only refers to an entity but also indicates that there exist alternatives about which the speaker wants to talk.

- (1) a. What does Taro do?
b. Taro-wa isya-desu.
'As for Taro, he is a doctor.'
- (2) a. Who passed the exam?
b. Taro-WA uka-tta-yo.
'Taro passed the exam (, but other students did not).'

Although there are many studies about the topic marker '*wa*' (Tateishi 1991, Kuroda 1992 and so forth), few studies have explored contrastive aspects of *wa* (Munakata 2002, Nakanishi 2000, Tomioka 2010, Vermeulen 2007). Moreover, the semantic notion of 'contrastiveness' is vague. Should it be regarded as topic? If so, how topical is it? In order to answer these questions, I will examine the topicality of contrastive *wa* using Centering Theory. In conclusion, I propose that contrastive *wa* should be regarded as discourse-topic because it is discourse anaphoric as frequently as thematic one is.

This paper is organized in the following way. Section 2 overviews the previous studies about topic marker *wa* and the mechanism of Centering Theory. Section 3 provides a centering analysis of contrastive topic. Section 4 discusses the results of my analysis. Section 5 summarizes my conclusions briefly.

2. Previous Studies

2. 1. Topic Marker *Wa*

Kuno (1973) observed that there are two usages of the topic marker *wa* in Japanese.

According to him, thematic *wa* occurs only in the leftmost position while contrastive one can arise in any position. For instance, in (3a), the *wa*-marked *soko* ‘there’ has only contrastive meaning because it is not positioned in the sentence-initial position. On the other hand, in (3b), *soko* ‘there’ is set in the sentence-initial position and thus can be interpreted as thematic.

- (3) a. Taro-ga soko-e-wa it-ta. There=Contrastive
 Taro-NOM there-to-TOP go-PAST
 ‘Taro went there (, but he didn’t go to other places).’
- b. Taro-wa soko-e it-ta. Taro=Thematic or Contrastive
 Taro-NOM there-to go-PAST
 ‘Taro went there.’ or ‘Only Taro went there (, and other didn’t go there).’

Therefore, it is necessary to take the *wa*’s position into consideration in order to explore the function of contrastive *wa* objectively.

Some studies insist that contrast is a link, which connects the previous discourse with the discourse entity in the present utterance. A link is informally defined as what the sentence is about, which correlates with topicality. Munakata (2002) argues that the function of contrastive *wa* is to introduce a link and to create an alternative set that is contrasted with a D-linked element. Brunetti (2009) contends that the contrastive interpretation of a link arises from the fact that a link implies an alternative set. Moreover, Vermeulen (2007) contends that contrastive *wa* is discourse anaphoric. Although she claims that a discourse anaphoric entity is not always a topic, a discourse anaphor can be regarded as a link, which has a strong connection with topicality. Since Rizzi (1997), cartography has taken the position that discourse anaphoric referents are topics.

Yet, Shimojo (1995, 2005) observed that *wa*-marked referents should be divided into two groups: anaphorically salient and anaphorically non-salient ones. This fact agrees with the idea that thematic *wa* is anaphorically salient whereas contrastive *wa* is anaphorically non-salient. Moreover, Imamura (2014, 2015, 2016, 2017a, b) found that *wa*-marked entities tend to be intermediately accessible. This result can be accounted for by supposing that the

anaphoric aspect of thematic *wa* was offset by the non-anaphoric aspect of contrastive *wa*.

In sum, contrastiveness seems to be related to linking, which also correlates with topicality. However, it is not clear how topical contrastive referents are. Furthermore, it is conceivable that contrastive *wa* is not topical at all. The present analysis will disentangle these issues.

2.2. Centering Theory

Centering Theory is a model of local discourse coherence which was first formulated by computational linguists for tracking participants' center of attention in discourse (Brennan, Friedman and Pollard 1987; Grosz, Joshi, and Weinstein, 1983,1995; Joshi and Weinstein, 1981; Kameyama 1985). According to Centering Theory, discourse coherence is measured by three concepts: backward-looking center, forward-looking center, and preferred center.

The basic assumption of Centering Theory is that speakers will make a connection between a referent in their current utterance and a referent in their previous utterance so that they can maintain local coherence in their utterance. This referent is called backward-looking center (Cb) which is a connection with the previous sentence; it is the most significant discourse referent under discussion in both the current and previous utterances. To put it more informally, Cb is what the sentence is about and usually corresponds to anaphoric topic. What I should note here is that Cb always entails a link, but not vice versa. This is because the scope of Cb is the immediately preceding utterance but a link has no such a limitation; its scope includes all of the preceding context. Thus, if a referent is Cb, it is also a link, but if a referent is not Cb, it cannot be concluded that it is not a link. Even when it is not Cb, it may be a link.

Centering Theory simultaneously presupposes that speakers draw on referents from their current utterance to frame their next one. These referents are called forward-looking centers (Cfs), which are defined as members of an ordered set of referents corresponding to referents mentioned in the current utterance. They are a list of all discourse entities in a sentence that may be linked to a succeeding utterance. In other words, Cfs are candidates for becoming Cb in the following utterance. The set of Cfs is ordered by salience, ranked most often in terms of a hierarchy of grammatical relations: SUBJECT is higher than OBJECT which is higher than OTHER constituents.

The highest-ranked member of a current utterance's Cfs is designated as the preferred center (Cp) and it is the most probable candidate to become Cb in a succeeding utterance. One of the members of the current utterance's Cfs is a Cb. This Cb is the highest-ranked entity from the previous utterance's Cfs that is realized in the current utterance. Let us look at a simple example. (4a) is the beginning of the discourse and has no preceding sentence and thus it has

no Cb. In (4a), there are two referents: *apple* and *table*. They are Cfs. Since SUBJECT is higher than OBJECT in the Cf ranking, Cp is *apple*. In (4b), *apple* is Cb because it is the only referent that arises in both (4a) and (4b). Furthermore, *Ken* is higher than *apple* in the Cf ranking and hence *Ken* is Cp.

- (4) a. There is an apple on the table. Cb:[?] Cf:[apple, table] Cp:[apple]
 b. Ken ate it. Cb:[apple] Cf:[Ken, apple] Cp:[Ken]

In sum, Centering Theory is based on three important concepts: Cb, Cfs. and Cp. In the following section, I will analyze contrastive *wa* based on the centering algorithm.

3. Analysis

The aim of this analysis is to calculate the topicality of contrastive *wa* objectively by using Centering Theory.

3.1. Method

3.1.1. Corpus Data

In order to collect relevant sentences, actual examples were assembled from *Aozora bunko*, which is a database containing a collection of novels written in modern Japanese.

3.1.2. Materials

SUB-TOP OBJ-TOP V-PAST sentences were collected in order to calculate the topicality of contrastive *wa*. Moreover, OBJ-ACC SUB-TOP V-PAST sentences are counted. However, the frequency of SUB-NOM OBJ- TOP V-PAST and OBJ-TOP SUB-TOP V-PAST sentences was very low and χ^2 -test could not be conducted for them.

Note that OBJ-TOP is contrastive in SUB-TOP OBJ-TOP V-PAST sentences because it does not occur in a sentence initial position. Although SUB-TOP can be contrastive, since it is a typical position for thematic *wa*, it is counted as thematic *wa* in this paper.

3.1.3. Data Analysis

After the data were assembled, two analyses were implemented. In the first step, using the χ^2 -test, I looked at whether Cb of the target sentences is SUBJECT or OBJECT. In the second step, χ^2 -test was conducted to see if Cp of the target sentences is SUBJECT or OBJECT.

3.2. Results

Table 1. The observed frequencies of Cb and Cp in SUB-TOP OBJ-TOP V-PAST

Grammatical relations	Cb	Cp
S	9	15
O	10	6

Summary of observed frequencies of Cb and Cp in SUB-TOP OBJ-TOP V-PAST sentences is shown in Table 1. First, χ^2 -test was conducted for the Cb in the target sentences. This revealed that there was not a significant difference between the frequencies of S and O in Cb ($\chi^2(1)=0.053$, $p=.819$). Second, there was a significant difference in frequency between S and O as Cp ($\chi^2(1)=3.857$, $p<.05$).

Table 2. The observed frequencies of Cb and Cp in OBJ-ACC SUB-TOP V-PAST

Grammatical relations	Cb	Cp
S	9	24
O	19	5

Table 2 is the summary of the observed frequencies of OBJ-ACC SUB-TOP V-PAST sentences. First, χ^2 -test revealed that the difference between OBJ-ACC and SUB-TOP was marginal in Cb ($\chi^2(1)=3.571$, $p<.10$) Second, there was a significant difference between SUB-TOP and OBJ-ACC in Cp ($\chi^2(1)=12.448$, $p<.001$).

4. Discussion

There are two main points regarding SUB-TOP OBJ-TOP V-PAST sentences. First, the results of χ^2 -test have demonstrated that contrastive *wa* is as strong as thematic *wa* in Cb. As mentioned above, Cb can be treated as anaphoric topic. This supports the opinion that contrastive *wa* is as topical as thematic *wa*. This answers the questions stated in the beginning: should contrastive *wa* be regarded as topic? The answer is ‘yes’ in terms of anaphor properties because it has been shown that contrastive *wa* is Cb, which can be regarded as anaphoric topic. In addition, thematic *wa* is a typical topic and the fact that there is no difference between thematic *wa* and contrastive *wa* in anaphoric topicality suggests that contrastive *wa* is also topic because thematic *wa* is topic. The other question was ‘If so, how topical is it?’ My answer is that contrastive *wa* is as topical as thematic *wa*. This agrees with the cartographic position that contrastive *wa* is topic.

Second, thematic *wa* is apparently preferred to contrastive *wa* as Cp. However, this may

be because subjects are generally preferred as Cp over objects. Further data are needed in order to investigate the cause of the difference between SUB-TOP and OBJ-TOP in Cp. One way to inquire into this question is to examine OBJ-TOP SUB-TOP V-PAST sentences. If thematic *wa* is preferable to contrastive *wa*, the object will be Cp because thematic *wa* is the object in OBJ-TOP SUB-TOP V-PAST sentences. If so, from the view point of information structure, the difference between thematic *wa* and contrastive *wa* may be attributed to the likelihood of each becoming the Cp. On the other hand, if subjects are preferred to objects, subjects will be Cp. If so, whether a referent is thematic or contrastive has nothing to do with Cp, and thus there would be no statistical difference between thematic *wa* and contrastive *wa* as Cp.

The analysis of OBJ-ACC SUB-TOP V-PAST has shown that contrastive subjects are much more common than scrambled objects as Cp, but scrambled objects are more common than contrastive subjects as Cb. The behavior of Cb is intriguing in that objects are much more common as Cb than subjects. Therefore, given that contrastive *wa* is topical, a scrambled object is more topical in some sense. However, this is uncommon because accusative objects are generally not topical. Why are accusative objects topical in spite of their case and grammatical relation? One possibility is that scrambling may mark the anaphoric topicality of an accusative object (Imamura 2014, 2015, 2016, 2017, 2018). If we take a cartographic approach, accusative objects will be classified into a different category from contrastive topic because cartography supposes a one-to-one relationship between syntactic position and discourse function. It is not economical to consider a scrambled object to have the same discourse function as contrastive topic. Then, what kind of topic is a scrambled object likely to be? It may be shifted topic. As mentioned above, scrambled objects are Cb, which entails a link. According to Brunetti (2009), a link correlates with shifted topic. Thus, scrambled objects may be shifted topics because they are a link. Furthermore, when scrambling and contrastive topic co-occur, scrambled constituents are Cb. This means that contrastive topic is not shifted topic because it is contradictory to presuppose that both scrambled constituents and contrastive *wa* are shifted topic. This violates the cartographic presupposition that a discourse function has a corresponding syntactic position. In addition, Brunetti (2009) presupposes that shifting topic can have a contrastive meaning, but Ishii (2001) argues that scrambled objects do not have a contrastive meaning. Further studies are necessary to disentangle this issue.

5. Conclusion

Using Centering Theory, the present study has explored the function of contrastive *wa* quantitatively. As a result, it has been revealed that contrastive *wa* is as topical as thematic *wa*

under the framework of Centering Theory. However, contrastive *wa* differs from thematic *wa* in how it affects the following sentence. Furthermore, contrastive *wa* is generally Cb unless a scrambled object is present, which then has a strong tendency to become Cb.

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対照の「は」のトピック性について

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和文要旨

本論文では、中心化理論の枠組みに基づき、対照の「は」の談話機能について量的な分析を試みた。その結果、対照の「は」は主題の「は」と同程度の確率でCbになることが示された。すなわち、用法の違いによって前方照応性の点で差異が生まれなかった。これは対照の「は」が主題の「は」と同程度のトピック性を帯びているということを意味する。したがって、対照対照の「は」はトピックとみなすことができるという結論へ達した。