

Discourse Effects of Biased Questions in Japanese

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1 Introduction

Biased questions are very common cross-linguistically. They have received much attention in the literature (Farkas & Roelofsen 2017; Gyuris 2016; Ladd 1981; Romero & Han 2004) because they point to the type of information that the context has to be able to encode. An important goal in this area is to propose a typology of biased questions that is able to predict the parameters according to which biased questions may differ across languages. This paper examines a subset of biased questions in Japanese, in which different types of contextual information are conveyed by particles and by their combinations.

Japanese has a variety of ways of forming biased questions. For instance, (1) illustrates a biased question that conveys the speaker's bias in favor of a positive sentence as an answer. Here, outer negation (henceforth *nai*₂, as opposed to inner negation *nai*₁) is used to convey such a bias.

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- (1) Ima, ame HUtte nai?
 now rain fall *nai*₂
 ‘It is raining now, isn’t it?’

Another way of conveying bias is by the use of *no(da)*, illustrated in (2). Example (3) illustrates that *no(da)* and *nai*₂ may be used simultaneously.

- (2) Ima, ame hutteru no?
 now rain falling NO(DA)
 ‘(Wow,) is it raining now?’
- (3) Ima, ame hutteru nja nai?
 now rain falling NO(DA) *nai*₂
 ‘Isn’t it raining now?’

This paper attempts to achieve two goals. First, I will characterize the contextual properties that license the type of biased questions illustrated in (1-3). I assume that all polar questions in (1-3) and polar questions without any special particles share the same semantic denotation, namely a set of possible answers: $\{p, \neg p\}$, following Hamblin (1973). Despite their having the same semantics, I will assume, following Farkas and Roelofsen (2017), that biased questions such as those shown in (1-3) are marked and have special discourse effects that basic polar questions (i.e., *p*+rising intonation or *p+ka*) do not have. The differences among biased questions (1-3) lie in the different discourse effects associated with each type of questions. Some discourse effects indicate what the input context should look like (neutral or biased) and others convey the additional information about a bias that the person who asks that question has at that moment.

In this paper, I will focus on (i) what I call a *nai*₂ question, a question with outer negation and (ii) a *no(da)*-question. Following Sudo (2013), I argue that the crucial parameters in licensing biased questions in Japanese are public evidence, which is accessible to all interlocutors in the immediate context, and private bias, which is accessible only to the speaker. I will make a slight modification to Sudo’s characterization of these biased questions so as to clarify the discourse effects of each kind of biased question. I will also show that the discourse effects of *no(da)*-questions are derived from the basic meaning of this particle. *P-(noda)* in declaratives signals that the speaker has just faced contextual evidence that supports *p* and then *p* has become a new part of her knowledge. In interrogatives, by using *noda*, the speaker is signaling that she needs a confirmation from the addressee that *p* is true facing contextual evidence that supports *p* in order to store *p* as new knowledge.

Second, I will show that the discourse effects of biased questions involving multiple discourse particles can be derived compositionally. Unlike biased

questions in English, different types of biased questions in Japanese are realized as different combinations of discourse particles, rather than as different sentence types. This peculiar characteristic of Japanese biased questions enables us to investigate how discourse effects can be combined.

In order to demonstrate this, I will use the negative morpheme in Japanese *nai* ‘not’, which is ambiguous in interrogatives and can be interpreted as either inner negation or outer negation. As Ito and Oshima (2014) report, the ambiguity of *nai* disappears when it is combined with *no(da)* in a certain order. I claim that this fact can be explained easily, once we assume discourse effects are compositional: unavailable interpretations are ruled out because of the infelicity of the discourse effect that results from the combination of the particles. It is also shown that the speaker’s credence in the truth of the proposition expressed by the sentence radical, which is claimed to be encoded in some of English biased questions (Farkas & Roelofsen 2017), is also communicated by a certain type of Japanese biased question as well, but this is done in a different manner, namely by a combination of discourse particles.

2 Biased Questions and their Discourse Effects

2.1 Outer Negation Questions

The Japanese negative morpheme *nai* in declarative sentences is usually interpreted at the predicate level (Yabushita 1992), and does not scope over the subject, as shown in (4). However, a negative morpheme is ambiguous when it is used in interrogative sentences; it could be interpreted as either outer negation or inner negation, as in (5).

- (4) Sannin-ga konakatta.
 3 people-NOM come. NEG.PAST
 ‘Three people did not come.’ (3 > ¬, *¬ > 3)
- (5) Taro-wa hasira-nai desu ka?
 Taro- TOP run. IMPF-NEG COP Q
 (i) ‘Taro is going to run, isn’t he?’ (*nai*₂: outer negation)
 (ii) ‘Is Taro not going to run?’ (*nai*₁: inner negation)

Inner and outer negation *nai*_{1/2} can be distinguished from each other in several ways. First, *nai*₁ can bear phonological focus and license NPIs, whereas *nai*₂ cannot be a focus and can appear with PPIs (Ito & Oshima 2014). Second, they differ with regard to how the polarity particles (*hai* ‘yes’/ *iie* ‘no’) are used to answer the questions. As discussed in the literature (Pope 1972; Yabushita 1992), Japanese *yes/no* only signals (dis)agreement with the highlighted proposition (a proposition under discussion or put on the Table

(Farkas & Bruce 2010)). For example, in (5), answering ‘Yes’ to the *nai*₁ question signifies agreement with the negative proposition (Taro is NOT running), while *yes* to the *nai*₂ question shows agreement with the positive proposition (Taro IS running). Given these differences between *nai*₁ and *nai*₂, we can conclude that *nai*₁ occupies a position inside the sentence radical while *nai*₂ is located outside of it.

The difference between a polar interrogative without any particle and a question with *nai*₁ is clear: in a question with *nai*₁, the highlighted proposition is a negative proposition. By contrast, positive polar questions and *nai*₂ questions illustrated in (5i) highlight the same proposition, namely that expressed by *Taro is running*. The question that arises then is how they differ. Following Farkas and Roelofsen (2017), I will assume that *nai*₂ questions are marked questions compared to questions without particles, and that they therefore have special discourse effects. They are summarized in (6).

(6) *The discourse effects of nai*₂ *questions*

- a. The speaker has a positive bias for *p*.
- b. The context should be neutral with regard to the truth of *p*.

As Sudo (2013) argues, Japanese polar questions are used in neutral contexts, i.e., contexts that do not contain evidence in favor of either answer. *Nai*₂ questions are the same in this respect: (6b). This aspect is illustrated by the infelicity of (7a-b), in which the context, namely the wet rain coat, provides evidence in favor of the highlighted proposition.

(7) *A enters a room in a wet rain coat. B asks:*

- a. #Ima ame huttemasu ka?
 now rain falling Q
 ‘Is it raining?’ [Polar question]
- b. #Ima ame HUtte nai₂?
 now rain falling nai₂
 ‘It’s raining, isn’t it?’ [Nai₂ question]

The condition in (6a) is what differentiates *nai*₂ questions from polar questions. *Nai*₂ questions are different from polar questions, in that they need to encode the speaker’s positive bias toward *p*. Thus (8a), but not (8b), can be followed by *yappari* ‘as expected’, indicating that the speaker had a prior bias in favor of *p*. By contrast, *nai*₂ questions cannot be followed by the same person’s expressing her complete surprise at the truth of the highlighted proposition (‘*Oh, is that so?*’), whereas polar questions can be so followed.

(8) *A is sitting in a windowless room. B is in a different room, which has a window.*

- a. A: *Nee, soto, ame futte nai₂?* ‘It is raining outside, isn’t it?’
 B: ‘Yes, it is raining.’
 A: *Yappari.* ‘As expected.’ / [#]E, soonano!?’ ‘Oh, is that so!?’
- b. A: *Nee, soto, ame futtemasuka?* ‘Is it raining outside?’
 B: ‘Yes, it is raining.’
 A: ^{??}*Yappari.* ‘As expected.’ / E, soonano!?’ ‘Oh, is that so!?’

What is important here is that the particle *nai₂* imposes two requirements, namely that the context be neutral, and that the speaker have a private bias for the highlighted alternative.

Note that even though Japanese negative questions are sometimes regarded as similar to English High Negation Polar Questions (HNPs) in that they can be ambiguous, the analysis given here reveals that they are different. It has been observed that HNPs in English are felicitous in contexts where the speaker’s private bias is for *p* and the context is biased for $\neg p$ (Northrup 2014). In such cases, however, *nai₂* questions are infelicitous since they require unbiased contexts.

To summarize this section, the difference between *nai₂* questions and polar interrogatives (PI) is illustrated in Table 1. The - feature indicates incompatibility with the question type. Therefore, the features -negative & -positive indicate that the context has to be neutral. On the other hand, the + positive feature indicates that the bias is obligatory. The claim made here differs from that in Sudo (2013), in that private bias is claimed to be required for *nai₂* questions, rather than just being compatible with them.

Q-type	Public Evidence	Private bias
PI(-ka)	-positive & -negative	none
<i>nai₂</i>Q	-positive & -negative	+positive

Table 1: PIs versus *nai₂* questions

2.2 *No(da)* Questions

We turn now to the second type of specially marked question, *no(da)* questions. First, it should be noted that this particle is different from *nai₂*, in that it is used in declaratives as well. Accordingly, I will first describe the effects of *no(da)* in declaratives, and will then derive its discourse effect in interrogative sentences from the basic meaning of this particle.

Following Ijima (2010), I assume that *no(da)* signals that the sentence to which it attaches is new information for the speaker.

(9) *The speaker just left the house, and a drop of rain hit his face.*

Ame-ga	hutte-iru	?(nda).
rain-NOM	fall-ing	noda

‘(Oh,) it is raining.’

By uttering (9), the speaker can convey that she has just realized that it is raining. There is no implication as such without *noda*, and the sentence without *no(da)* is degraded in this context. When there is no *no(da)*, the sentence is understood as the speaker’s statement concerning the weather at the time of utterance, which does not suit the context very well.

Here, “new information” does not have to be entirely new to the speaker: *no(da)* does not require her to have no expectation that the sentence be true. For example, (9) can be uttered by a speaker who has already checked the weather forecast and knows it is likely to rain: She can have a positive bias toward the sentence radical beforehand. Given this, the discourse effects of *noda* in declarative sentences can be summarized as in (10). By using a *p-noda* declarative sentence, the speaker commits to the truth of *p* and simultaneously communicates that she has just become aware of the fact that *p* is true. *No(da)*, therefore, signals that it cannot be the case that *p* was part of her knowledge before the utterance.

(10) *The discourse effect of noda declaratives*

By uttering a *no(da)* sentence, the speaker signals that she has just become aware that *p* is true, and has added it to her discourse commitment.

Given this basic discourse effect of *no(da)*, we can characterize the discourse effect of this particle in interrogatives as below:

(11) *The discourse effect of p-no(da) interrogatives*

- a. The speaker has just encountered public evidence for *p*.
- b. Based on the public evidence, the speaker assumes that *p* is more likely to be true than $\neg p$. (=The speaker has a private bias for *p*.)

When the speaker uses *no(da)* in an interrogative, she indicates that she has a private bias toward *p*, just as when she uses *nai*₂ questions. However, *no(da)* questions and *nai*₂ questions differ, in that with *no(da)* questions, there must be public evidence on which the speaker’s private bias is based, as in (12).

(12) *A is sitting in a windowless room. B comes into the room wearing a wet raincoat.*

Ame futteru *no*? ‘Is it raining *no*?’

Recall that in the context in (12), a *nai*₂ question cannot be used because the context is biased. However, a *no(da)* question is felicitous, and the speaker in (12) is asking the addressee for her confirmation that it is because of rain that her raincoat is wet (public evidence for *p*=it is raining).

As mentioned, while *no(da)* questions are compatible with a context in which the speaker is surprised to discover *p* (i.e., the speaker did not have any prior expectation at all), there does not always have to be such a context. *No(da)* questions can be used when the speaker has bias beforehand and asks for confirmation from the addressee based on the information to which the addressee also has access. For example, in (13), the fact that the flight takes two hours would not be a surprise to the speaker.

(13) *The caller had looked at the flight schedule but called Schiphol information to make sure she had consulted the correct schedule.*

huraito wa 2 zikan kakaru n desu ka?
flight TOP 2 hours takes no COP Q

‘The flight takes two hours?’

In sum, *no(da)* in declaratives and interrogatives indicates that some contextual evidence that supports sentence radical *p* has just caught the speaker’s attention, and indicates that *p* is not a part of the speaker’s knowledge at the utterance time.

To recap what we have so far, polar interrogatives (PIs), *nai*₂ questions, and *no(da)* questions are different in terms of the kinds of evidence that are available to the speaker or in the context. These are summarized in Table 2.

Q-type	Public Evidence	Private bias
PI(-ka)	-positive & -negative	none
<i>nai</i>₂Q	-positive & -negative	+positive
<i>No(da)</i> Q	+positive	+positive

Table 2: PIs versus *nai*₂ Q versus *no(da)* Q

3 Interaction of a Negative Morpheme and *no(da)*

Thus far, we have investigated the discourse effects of two kinds of biased questions in which only one particle is used to form marked questions. As mentioned in Introduction, multiple sentence-final expressions can be used simultaneously in Japanese to make other kinds of biased questions. In this section, we will look at how the discourse effects of such complex interrogative sentences are composed. In particular, I will claim that multiple particles form hierarchical structures whose complex discourse effect is derived compositionally.

As an illustration, the combinations of negative morphemes and *no(da)* are examined in the following sections. Ito and Oshima (2014) reported that the ambiguity of the negative morphemes sometimes disappears depending on how they are used with other particles. The paradigm we need to explain is as follows (Ito & Oshima 2014: pp. 9-10):

- (14) Possible combinations of *nai* and *no(da)s* and their interpretations:
- a. $nai+noda \rightarrow nai_1+noda$
 - b. $noda+nai \rightarrow noda+nai_2$
 - c. $noda+nai+noda \rightarrow noda+nai_{1/2}+noda$

From (14), we can tell that the discourse effects cannot be simply additive; if they were, the order would not matter at all, but that is not the case. This tells us that particles have a hierarchical structure, and that their discourse effects are sensitive to it. In the following sections, I will show how the discourse effects of sentences with multiple particles can be derived compositionally. Remember: *Nai₁* is inner negation: negation that works at a predicate level; *Nai₂* is outer negation, which occupies a higher position than the sentence radical.

3.1 Pattern 1: *nai+noda* \rightarrow *nai₁+noda*

When *nai* precedes *no(da)*, it must be interpreted as *nai₁*. I claim that the *nai₂* interpretation is impossible because putting *noda* after *nai₂* yields incoherent discourse effects. Throughout the discussion, I will assume that, when two or more discourse particles occur sequentially, those in outer positions take wide scope over the preceding expression. That is, the outer particle is attached to an expression that consists of a proposition and particle, and it encodes contextual properties pertaining to the information in that expression. For example, a sentence with *nai-no(da)* has the structure shown in (15), where *no(da)* takes the whole sequence of *p-nai* (a proposition and a particle) as its argument. That said, if *nai* in (15) were *nai₂*, then the interpretation of this sentence would be (15c), which could be compositionally derived from (15a-b).

(15) $[[p\text{-}nai_2]\text{-}no(da)]?$

- a. $P\text{-}no(da)?$: There is public evidence that supports the truth of P .
- b. $P=p\text{-}nai_2$: The speaker has a private bias towards p .
- c. $[[p\text{-}nai_2]\text{-}no(da)]$ (From a and b): There is public evidence that indicates that the speaker has private evidence that p is true, and having such a private bias is new information to the speaker.

Based on the definition of private bias, which is only available to the speaker herself, there cannot be any public evidence for it. In addition, it would be strange for the speaker's having some bias to be new information for herself, and she needs to depend on the addressee to support it. This is why the nai_2 interpretation is unavailable in this construction.

By contrast, when nai is inner negation, namely nai_1 , there is no problem with combining it with $no(da)$. In this case, the contextual requirement is for there to be public evidence that suggests that $\neg p$ is true, and that would be new information to the speaker if it is confirmed as true by the addressee.

3.2 Pattern 2: $noda+nai \rightarrow noda+nai_2$

When nai follows $noda$, only the nai_2 interpretation is available. In this case, the nai_1 interpretation is unavailable because of a specific interpretation of the negated $no(da)$ sentence: When $no(da)$ is negated, it usually accompanies a focused associate, and negation is interpreted as sentential negation. This is a special case in Japanese, in which negation is usually predicate-level negation, as we have seen in Section 2.1. Since this negation is sentential, the sentence implies that there is another true proposition, as shown in (16). Here, not only is the speaker denying that Taro is a student, but she is also indicating that Taro has another property, namely being an office worker.

(16) Taro-wa [_Fgakusee] na nja nai. (kaishain da.)
 Taro-TOP student COP no(da) NEG officeworker COP
 'Taro is not a student, (but an office worker).'

This effect is preserved when the sentence is interrogative, and this is why the nai_1 interpretation is not available. (17) is infelicitous, because, in this case, the speaker is supposed to have an alternative question to ask. In our case, the speaker could have asked whether Taro was an office worker instead of asking (17). (18) supports this idea: When the speaker conjoins the property that she thinks is true of Taro, a negative morpheme nai after $no(da)$ can be interpreted as nai_1 . So I claim that $no(da)+nai_1$ is not ruled out on syntactic grounds, but rather because the question is pragmatically infelicitous.

- (17) # Taro-wa gakusee na nja nai₁?
 Taro- TOP student COP no(da) nai₁
 ‘Is Taro not a student?’
- (18) Taro-wa kaishain de, gakusee na nja nai₁?
 Taro- TOP officeworker COP student COP no(da) nai₁
 ‘Is Taro an office worker, not a student?’

Let us look at what kind of interpretation we would obtain if *nai* were *nai*₂ instead. Unlike a sentence in which *nai* precedes *no(da)*, this time, the sentence is meaningful, and as a result the question is felicitous. The interpretation can be compositionally derived as below:

- (19) [[*p-noda*]-*nai*₂]?
- P-nai*₂?: The speaker has a private bias for *P*, and there cannot be conflict and shared evidence.
 - P=p-noda*: There is public evidence that *p* is true.
 - [[*p-noda*]-*nai*₂]?: (from a and b): The speaker has a private bias that there is public evidence that supports *p*.

In other words, the speaker believes that there is potential contextual evidence that suggests that *p* is likely to be true. As a result, she thinks it is more likely that *p* is true than that $\neg p$ is true because of the potential evidence. The contrast can be made clearer when we compare this type of question with a *nai*₂ question, in which the speaker does not have to have any evidence regarding *p*. In a context in (20), which is from Ito and Oshima (2014), the speaker is supposed to have no evidence that supports the expectation that Yamada will be in the very first room. She just knows that Yamada will be in one of the ten rooms.

- (20) *Context: The speaker is looking for her friend Yamada. She has been informed that Yamada is visiting one of the ten residents on the second floor of the dormitory, but does not know in which room he actually is. She decides to check the rooms one by one. She first goes to room #201, and asks the resident:*
- ✓Nee, Yamada-kun kite-nai₂? [nai₂-question]
 - #Nee, Yamada-kun kiteru nja nai₂? [noda+nai₂-question]

(20a) is a *nai*₂ question, and therefore it is acceptable in this context. It is felicitous, as long as the speaker has a private bias that Yamada might be there. By contrast, (20b) is infelicitous here because of the lack of any particular evidence that Yamada is in that room. In all, *noda-nai*₂ questions

are similar to English tag questions, which indicate that the speaker has moderate to high credence in the truth of the sentence radical compared to its complement (Farkas & Roelofsen 2017). What is interesting here is that the effect could be derived compositionally in Japanese.

3.3 Pattern 3: *noda+nai+noda* → *noda + nai_{1/2} + noda*

Finally, let us look at cases in which the negative morpheme *nai* is sandwiched by two *no(da)*s. In this case, both of the *nai_{1/2}* interpretations are available, and each produces a different discourse effect.

Pattern 3-1: *noda + nai₂ + noda*

We have just seen that *no(da)+nai₂* suggests that the speaker has a private bias that there is public evidence that supports *p*. By adding *noda*, the speaker is seeking for the addressee's confirmation of whether it is reasonable to think in that way based on the context. Such a context is illustrated in (21).

(21) Context: Hanako reports to Mariko that she found a lipstick mark on Taro's shirt. Mariko says:

Taroo, uwakisiteru nja nai no?

Taro cheating noda nai₂ noda

'Taro is cheating (on you), isn't he?'

=Is it acceptable to have a bias that Taro is cheating on you based on the public evidence (i.e., a lipstick mark on the shirt)?

In (21), Mariko conjectures that Taro might be cheating on Hanako, based on Hanako's story. By using two *nodas* and *nai₂*, Mariko suggests that the lipstick mark could be public evidence that suggests a proposition, *Taro is cheating on Hanako*, is true. At the same time, Mariko is avoiding committing to the truth of this possibility and is, therefore, asking for Hanako's confirmation that her conjecture is reasonable.

Pattern 3-2: *noda + nai₁ + noda*

When the negative morpheme is interpreted as *nai₁*, the entire question is designed to ask for confirmation that the actual world is not included in the *p*-world. In this case, the speaker had a bias toward *p*, but encounters evidence that falsifies *p*, and thus she asks for confirmation for it. For example, let us assume that we have the context depicted in (22), following (21). In this instance, Hanako found that Taro was not cheating on her and told Mariko so. Mariko's reaction is the same in terms of the words used in the utterance, but this time *nai* in (22) is interpreted as *nai₁*.

(22) *Context: Later, Taro tells her that a stranger had just bumped into him on a train. Hanako reports to Mariko about it, and Mariko asks:*

Jaa, Taroo, uwakisiteru nja nai₁ no?

Then Taro cheating noda nai₁ noda

‘Then, Taro is not cheating you, is he?’

=Is it acceptable to assume it was not the case that Taro was cheating on you?

In this case, the speaker has to have a prior bias towards a proposition in the sentence radical, namely *Taro is cheating on Hanako*. It is not possible for Mariko to continue by saying *I did not expect he would be cheating on you at all, though*, which rejects such an expectation.

3.4 Summary

In this section, I illustrated how we could explain the possible combinations of *nai* and *no(da)* compositionally, based on their discourse effects. We also observed that, by combining these two expressions, it is possible to convey complicated information regarding private bias and public evidence, which are expressed by the use of different sentences types in English.

4 Conclusion and Future Directions

In this paper, I have discussed two kinds of biased questions in Japanese and showed how the combinations of two discourse particles could convey very intricate information about the context. Overall, the rich inventory of particles and their combinations in Japanese enables us to investigate how highly detailed information about the context is structured and conveyed.

The biased questions that I discussed in this paper are only the tip of the iceberg. There are many other discourse particles in Japanese that can be used in interrogative sentences. Identifying the discourse effects of these particles is an interesting topic for future research.

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