言語研究（*Gengo Kenkyu*）**160**: 43–68（2021）　doi: 10.11435/gengo.160.0_43

The Japanese Reactive Attitudinal *Nani-mo*: A New Class of Negative Polarity Items

【Invited Article】

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Abstract: In Japanese, there are two kinds of *nani-mo*: a quantifier *nani-mo* and a reactive attitudinal *nani-mo*. Although both types of *nani-mo* are negative polarity items (NPIs), the reactive attitudinal *nani-mo* has distinctive properties that the quantifier *nani-mo* (and typical NPIs) do not have. The reactive attitudinal *nani-mo* is non-propositional and usually appears with a negative modal. I argue that the meaning of the reactive attitudinal *nani-mo* conventionally implies that the speaker considers that the given proposition *p*, which is salient in the discourse, is extreme and unnecessary, and they object to *p* in a weak manner (i.e., not totally objecting to *p*). I then argue that the polarity sensitivity and occurrence with a modal in the case of the reactive attitudinal *nani-mo* are explained based on its lexical meaning and the general pragmatic constraint of attitude matching. It is generally assumed that NPIs are licensed by negation or downward-entailing operators (e.g., Ladusaw 1980) and non-veridical operators (e.g., Giannakidou 1998) at the level of syntax and logical structure. This paper shows that there is a new kind of NPI, a "reactive attitudinal NPI," that is not licensed by logical operators but, rather, requires a negative element due to its pragmatic function of objection.*

Key words: negative polarity item, reactive attitude, modality, conventional implicature, discourse

* I am grateful to Setsuko Arita, Kazuhiko Fukushima, Takuya Goro, Ikumi Imani, Hideki Kishimoto, Harumi Sawada, Jun Sawada, Koji Sugisaki, Satoshi Tomioka, Akira Watanabe and an anonymous reviewer of *Gengo Kenkyu* for their valuable and thought-provoking comments and suggestions. I would also express my gratitude to Anastasia Giannakidou, Thomas Grano, and Jason Merchant for helpful comments on the typology of NPIs and English data, which I discussed in the last part of the paper. Parts of this paper were presented at the seminars at Kwansei Gakuin University and Ritsumeikan University, the workshop "Polarity-Sensitive Expressions: Their Forms, Meanings, and Functions" (2019) and Japanese/Korean Linguistics Conference (2020), and I thank the audiences for their insightful comments. This study is based on work supported by JSPS KAKENHI Grant (18K00531) and the NINJAL collaborative research project 'Cross-linguistic Studies of Japanese Prosody and Grammar.' All errors are, of course, my own.

1. Introduction

In Japanese, there are two types of *nani-mo*: a quantifier *nani-mo* and what is named herein as "reactive attitudinal *nani-mo*," as exemplified in (1) and (2), respectively:[1]

(1) Taro-wa nani-mo tabe-nakat-ta. (Quantifier *nani-mo*)
Taro-TOP what-MO eat-NEG-PST
'Taro didn't eat anything.'

(2) Nani-mo ima sore-o su-ru hituyoo-wa
What-MO now it-ACC do-NON.PST necessity-TOP
nai. (Reactive attitudinal *nani-mo*)
exist.NEG
At-issue: You needn't do it now.
Implication: I am thinking that "to do it now" is too much and unnecessary.

(1) means that Taro did not eat anything, and here, *nani-mo* 'what-MO' is interpreted as the equivalent of the English NPI *anything*. However, *nani-mo* in (2) is not interpreted in this way. Intuitively, it behaves as an expressive—*nani-mo* in (2) signals that "to do it now'" is too much and unnecessary. Inoue (1986) calls the use of *nani-mo* as in (2) a modal adverb (*modaritii fukusi*), while Kawase (2011) calls it a mood adverb (*johoo fukusi*). Note that as Inoue (1986) observes, the quantifier *nani-mo* (=1) and the reactive attitudinal *nani-mo* (=2) are pronounced differently. For the reactive attitudinal *nani-mo*, *nani* receives a pitch accent, whereas for the quantifier *nani-mo*, the accent pattern is flat.

In terms of polarity sensitivity, both the quantifier *nani-mo* and reactive attitudinal *nani-mo* are negative polarity items (NPIs). If there is no negation, the sentences become ill-formed, as shown in (3) and (4):

(3) *Taro-wa nani-mo tabe-ta. (Quantifier *nani-mo*)
Taro-TOP what-MO eat-PST
'Taro ate anything.'

(4) *Nani-mo zenbu su-ru hituyoo-ga
What-MO all do-NON.PST necessity-NOM
aru. (Reactive attitudinal *nani-mo*)
exist
At-issue: You need to do everything.
Implication: I am thinking that "to do everything" is too much.

However, unlike the quantifier *nani-mo*, in the case of the reactive attitudinal

[1] The following abbreviations are used for example glosses: ACC: accusative, AUX: auxiliary, CL: classifier, COMP: complementizer, CONFIRM: confirmation, CONT: contrastive, GEN: genitive, HON: honorific, IMP: imperative, IND: indicative, LOC: locative, MO: Japanese particle *mo*, NEG: negation, negative, NOM: nominative, NON.PST: non-past tense, POLITE: polite, PRED: predicative, PROG: progressive, Prt: particle, PST: past, Q: question, TOP: topic.

nani-mo, negation alone is insufficient, and a modal (or modal-like) element is usually necessary. As the following example shows, the reactive attitudinal *nani-mo* cannot appear in a simple negative sentence:

(5) */?? Nani-mo ima sore-o si-nai.
What-MO now it-ACC do-NEG
'lit. *Nani-mo* you don't do it now.'

Kawase (2011) descriptively observes that the reactive attitudinal *nani-mo* co-occurs with negative expressions such as *nakutemo yoi* 'needn't' and *node-wa nai/wake-de-wa nai* 'it is not the case that,' which has to do with the speaker's negative construal toward an event. Thus, there is a concord-like relationship between the reactive attitudinal *nani-mo* and the negative modal.

Why is it that the reactive attitudinal *nani-mo* requires a modal element? What is the difference between the quantifier *nani-mo* and the reactive attitudinal *nani-mo*? What does the phenomenon of the reactive attitudinal *nani-mo* suggest for NPI theories? In studies of Japanese NPIs, the syntax and semantics of the quantifier *nani-mo*/wh-*mo* have been widely discussed (e.g., Watanabe 2004; Kataoka 2006; Shimoyama 2011). However, to the best of my knowledge, no serious investigation has been conducted focusing on reactive attitudinal *nani-mo* in the studies of NPIs. In this study, I will investigate the meaning and use of the reactive attitudinal *nani-mo* and suggest that it belongs to a new type of NPI, the distribution pattern of which cannot be analyzed using existing NPI theories.

Regarding the relationship between the quantifier and the reactive attitudinal *nani-mo*, in Sections 2-3, I argue that while the quantifier *nani-mo* is an at-issue NPI in that its meaning is part of "what is said" (interpreted at the semantic (propositional) level), the reactive attitudinal *nani-mo* is a conventional implicature (CI)-triggering expression, and its meaning is logically independent of "what is said" (at-issue meaning) (e.g., Grice 1975; Potts 2005). In Section 3, I specifically argue that it conventionally implies that the speaker considers the given proposition *p*, which is salient in discourse, as extreme and unnecessary, and they object to *p* in a weak manner (i.e., not totally objecting to *p*). Section 4 analyzes the meaning of the reactive attitudinal *nani-mo* based on the multidimensional theory of CI (Potts 2005).

In Section 5, I posit that the polarity sensitivity and the occurrence with a modal are explained based on the interaction between the lexical meaning of the reactive attitudinal *nani-mo* and the general pragmatic constraint of attitude matching: the speaker's attitude in the CI dimension and the at-issue dimension must match. In Section 6, I examine more complicated cases, such as the embedded reactive attitudinal *nani-mo*, co-occurrence with another NPI, and an elliptical case; then, I show that the proposed analysis can naturally explain them as well. In Section 7, I evaluate a related phenomenon and show that a similar reactive function can be observed in Japanese expressive NPI *totemo*. In Section 8, I consider the polarity sensitivity of the reactive attitudinal *nani-mo* from a broader theoretical perspective and propose that it belongs to a new type of NPI, a reactive atti-

tudinal NPI, which is not licensed by negation or downward-entailing operators (e.g., Ladusaw 1980) or non-veridical operators (e.g., Giannakidou 1998) at the level of syntax/logical structure but rather requires a negative expression to satisfy its pragmatic function (i.e., objection).

2. Meaning of the quantifier *nani-mo*

Before investigating the meaning and use of the reactive attitudinal *nani-mo*, let us first discuss the basic characteristics of the quantifier *nani-mo* as follows:

(6) Taro-wa nani-mo tabe{-nakat-ta /*-ta}. (Quantifier-type)
Taro-TOP what-MO eat-NEG-PST /PST
'Taro did not eat anything./ *Taro eat anything.'

In the literature, various approaches have been proposed regarding the syntax and semantics of the quantifier *nani-mo*, but generally, there are two primary analytic approaches: narrow-scope existential and wide-scope universal approaches. In the narrow-scope existential approach, the wh-indeterminate is viewed as an existential and negation scopes over it, as shown in the following:

(7) $\neg \exists$ x P(x) (*Narrow scope existential*)

This view is consistent with the assumption that NPIs are licensed by negation or downward-entailing operators (Ladusaw 1980) or non-veridical operators, such as question, modal, and conditional (Giannakidou 1998; see also Progovac 1994 for the syntactic/binding approach to NPI). In contrast, in the wide-scope universal approach, wh-*mo* (including *nani-mo* 'what-MO' in (1)) is considered to be a universal quantifier that takes scope over negation (Shimoyama 2011; Kataoka 2006), similar to the case of n-words in Hungarian (Szabolcsi 1981) and Greek (Giannakidou 2000):

(8) $\forall$ x $\neg$P(x) (*Wide-scope universal*)

Logically, (7) and (8) are equivalent; thus, it is difficult to determine which approach is better or more theoretically plausible; what is crucial for our discussion is that in either approach, the meaning of the quantifier *nani-mo* is part of a proposition and should be interpreted at the "at-issue" level (within "what is said" in the sense of Grice (1975)).[2] This is supported by the fact that a denial can target the meaning of the quantifier *nani-mo*, as shown in the conversation in (9):

(9) A: Taro-wa nani-mo tabe-nakat-ta.
Taro-TOP what-MO eat-NEG-PST
'Taro did not eat anything.'
B: Iya, sore-wa uso-da. Susi-wa tabe-ta-yo.
No that-TOP false-PRED Sushi-CONT.TOP eat-PST-Prt

[2] Kataoka (2006) and Shimoyama (2011) claim that, at least at the semantic level, the wide-scope universal approach is preferable based on the discussion of scope interaction with other quantifiers such as *taitei* 'mostly.'

'No, that's false. He ate Sushi.'

The quantifier *nani-mo* is interpreted/regulated in a narrow syntactic/semantic structure.

3. Basic properties of the reactive attitudinal *nani-mo*

Let us now turn our attention to the reactive attitudinal *nani-mo*. This section considers the basic properties of the reactive attitudinal *nani-mo*, beginning with the historical relationship between the quantifier *nani-mo* and the reactive attitudinal *nani-mo* and discussing the expressive/CI properties of the reactive attitudinal *nani-mo*.

3.1. Historical development of the reactive attitudinal *nani-mo*

Historically, the reactive attitudinal *nani-mo* was developed from the quantifier *nani-mo*. Kawase (2011) postulates that among non-existential sentences with the quantifier *nani-mo*, sentences that express the nonexistence of events may reflect the speaker's judgment of the event as being "unnecessary." Kawase then claims that this use has been conventionalized as the "mood" *nani-mo* (= the reactive attitudinal *nani-mo*) in the late Edo period (late 18th–19th centuries). Crucially, this semantic shift is only observed in *nani-mo*, and the other indeterminate pronouns plus *mo*, such as *dare-mo* 'anyone,' did not develop the reactive attitudinal use. From the perspective of grammaticalization, we can say that there was a semantic change from a propositional meaning to an expressive in the sense of Traugott (1989).

3.2. Expressive/CI property of the reactive attitudinal *nani-mo*

Let us now closely examine the expressive property of the reactive attitudinal *nani-mo*. Expressives indicate emotional or evaluative attitudes; typical examples include expressions such as *ouch* and *bastard* (Kaplan 1999; Potts 2005, 2007):

(10) a. Ouch! (Kaplan 1999)
b. That bastard Conner got promoted. (Potts 2005: 157)

For example, the expression *that bastard* in (10a) conveys that the speaker has a negative attitude toward Conner. In the literature, expressives are typically analyzed as having CIs (Potts 2005; McCready 2010). In Gricean pragmatics, CIs are considered part of the meaning of words, but they are (logically and compositionally) independent of "what is said" (e.g., Grice 1975; Potts 2005, 2007; Horn 2007; McCready 2010; Sawada 2010, 2018; Gutzmann 2012). In this theory, it is often considered that CI is speaker-oriented by default. The idea that an expressive is a CI is corroborated by the fact that denial cannot target the meaning of *a bastard*:

(11) A: The bastard Kresge is famous. B: No, that's false.

I argue that the reactive attitudinal *nani-mo* is also an expressive and should be analyzed as a CI-triggering expression, similar to *ouch* and *bastard*, but it has a more nuanced and complex meaning and function. Namely, it expresses an attitude

in a reactive context, and its attitudinal meaning is more indirect in that it does not have a high degree of affection, as does *ouch* and *bastard*. I define the meaning and function of the reactive attitudinal *nani-mo* as follows:

(12) The descriptive definition of the reactive attitudinal *nani-mo*: The reactive attitudinal *nani-mo* conventionally implies that the speaker considers that the given proposition *p* (proposition without a modal and negation), which is salient in discourse, is extreme and unnecessary, and the speaker weakly objects to *p* (i.e., not totally objecting to *p*).[3]

There are several pieces of evidence to support the idea that the emotive meaning triggered by reactive attitudinal *nani-mo* is a CI. First, emotive meaning cannot be challenged:

(13) A: Nani-mo zenbu su-ru hituyoo-wa
What-MO all do-NON.PST necessity-TOP
nai-desu-yo.
exist.NEG-PRED.POLITE-Prt
'We needn't do everything.'
CI: "Doing everything" is extreme and unnecessary, and I react negatively in a weak manner.

B: Iya sore-wa tigau-yo. Zenbu su-ru hituyoo-ga
No that-TOP false-Prt All do-NON.PST necessity-NOM
aru-yo.
exist-Prt
'No, that's false. We need to do everything.'

B': Iya sore-wa tigau-yo. #Sore-wa kyokutanna
No that-TOP false-Prt That-TOP extreme
koto-de-wa nai-yo.
thing-PRED-CONT.TOP exist.NEG-Prt
'No, that's false. # That is not an extreme thing.'

Second, the reactive attitudinal *nani-mo* cannot be scoped out by logical operators such as tense or another modal. For example, in (14), the at-issue proposition is in the past tense, but the reactive attitudinal *nani-mo* is not interpreted relative to the past tense, and it is anchored to the speech time:

(14) Kimi-wa nani-mo soko-made iu hituyoo-wa
You-TOP what-MO that-degree say necessity-TOP
nakat-ta. (with past tense)
NEG-PST
At-issue: You needn't have said that (much).
CI: "Your saying of that much" is extreme and unnecessary, and I am reacting

[3] Inoue (1986) posits that the reactive attitudinal *nani-mo* (what he calls a modal *nani-mo*) has a pragmatic function of objection to an established proposition.

negatively in a weak manner.

Let us now take a close look at the definition in (12) and empirically verify the meaning and use of the reactive attitudinal *nani-mo*. The first important characteristic is that the reactive attitudinal *nani-mo* requires that a proposition *p* (without a modal and negation) that co-occurs with it must be salient in the discourse. This component is a precondition for expressing a speaker's reactive attitude. Thus, this part can be assumed to be a presupposition in a broad sense. Here, I define a salient proposition as a proposition that is currently under discussion in the discourse or a proposition that is derived from an utterance situation and is perceived in the speaker's (and hearer's) consciousness at the time of utterance. The notion of saliency here is similar to Prince's (1981) notion of "givenness in the sense of saliency" or Dryer's (1996) notion of activation in which some entity or proposition is "'lit up' in the individual's attention, their [=the individual's] consciousness, or what they [=the individual] are thinking about at a given pint of utterance" (Dryer 1996: 480). Crucially, a salient proposition is one that is salient/activated in a speaker's mind but is not believed by the speaker. In the sentence with the reactive attitudinal *nani-mo*, the speaker rejects this proposition. Let us consider this point in detail based on some examples. (15B) is natural because A asks whether we should finish it tomorrow, and the information that "we finish it by tomorrow" is salient in the discourse:

(15) A: Asu-made-ni sore-o
Tomorrow-by-at it-ACC
kansei-sase-ru-beki-desu-yo-ne?
finish-make-NON.PST-should-PRED-Prt-CONFIRM
'We should finish it by tomorrow, right?'
B: Nani-mo asu-made-ni kansei-sase-ru hituyoo-wa
What-MO tomorrow-by-at finish-make-NON.PST necessity-TOP
nai-desu.
exist.NEG-PRED.POLITE
'You needn't finish it by tomorrow.'

However, B's utterance becomes unnatural if it is intended as a reply to a wh-question:

(16) A: Itu-made-ni sore-o kansei-sase-ru-beki-desu-ka?
When-by-at it-ACC finish-make-NON.PST-should-PRED-Q
'By when should we finish it?'
B: (#Nani-mo) asu-made-ni kansei-sase-ru hituyoo-wa
What-MO tomorrow-by-at finish-make-NON.PST necessity-TOP
nai-desu.
exist.NEG-PRED.POLITE
'You needn't finish it by tomorrow.'
(CI: I am assuming that "finishing it by tomorrow" is extreme and reacting negatively in a weak manner.)

(16B) sounds odd because the proposition "You will finish it by tomorrow" is not salient in the discourse. Notice that the utterance is perfectly natural if we omit *nani-mo*.

Note that a salient proposition does not have to be discourse-old information. The reactive attitudinal *nani-mo* can also be used in a situation where the speaker witnesses an extraordinary situation and reacts to it:

(17) (Context: It is extremely hot today. The speaker is looking at someone who is engaging in farming outside.)
Nani-mo ima noosagyoo-o si-naku-temo yoi-noni.
What-MO now farming-ACC do-NEG-even.if good-Prt
At-issue: You needn't engage in farming now.
CI: I assume that engaging in farming now is extreme and unnecessary, and I am reacting negatively in a weak manner.

Although the information of engaging in farming now is not discourse-old information, the speaker witnesses it, and it is salient in discourse (i.e., salient in the speaker's mind).

Let us now consider another characteristic of the reactive attitudinal *nani-mo* in (12), that is, that the salient proposition *p* is extreme for the speaker. The existence of such characteristics is supported by the following contrast:

(18) Nani-mo [{ima/?? ato-de} ya-ru] hituyoo-wa nai.
What-MO now / later-LOC do-NON.PST necessity-TOP exist.NEG
'You needn't do it {now/??later}.'

Usually, "to do it now" is extreme, while "to do it later" is normal. Note that it is often the case that part of the given proposition (here *ima* 'now') receives stress, which contributes to highlighting that a given proposition (rather than its alternative propositions) is extreme, and this focus creates a set of alternative propositions that are less extreme than the given proposition.[4]

[4] As a reviewer pointed out, there are some cases where the "extremeness" is not obvious at a lexical level, as in (i) and (ii), and in those cases where the extremeness of a proposition is understood pragmatically:

(i) (Q: You entered the school of law in order to become a lawyer, right?)
Iie. Nani-mo [bengosi-ni na-ru-tameni hoogakubu-ni hait-ta]-
No What-MO [lawyer-to become-NON.PST-for school.of.law-to enter-PST]-
node-wa-arimasen.
AUX-TOP-NEG.POLITE
'No, *nani-mo* I didn't enter the school of law to become a lawyer.' (I just entered the school because I heard that the school of law is advantageous when looking for a job.) (Based on a reviewer's example, slightly revised)

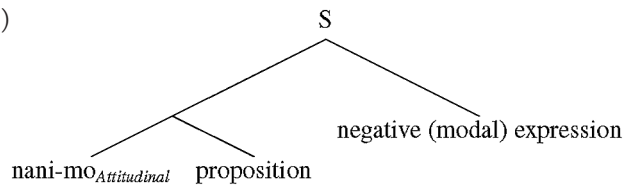
(ii) (Q: You took a day off because Mr. Sato also took a day off, right?)
Iie. Nani-mo [Satoo-san-ga yasun-da-kara
No What-MO [Sato-HON-NOM absent-PST-because

Finally, we verify that the reactive attitudinal *nani-mo* has a pragmatic function of weak objection. The reactive attitudinal *nani-mo* corresponds to the attenuation of the NPI in the sense of Israel (1996, 2004). Israel assumes that there are two types of NPIs: emphatic and attenuating NPIs. The emphatic NPI has a low scalar value and a pragmatic function of emphasis (e.g., English minimizer *budge an inch* or *sukosi-mo* 'a bit-even' in Japanese). In contrast, the attenuating/understating NPI has a high scalar value and a pragmatic function of attenuation (e.g., *all that* or *sonnani* 'that much'). We can say that the reactive attitudinal *nani-mo* is an attenuating/understating NPI because it has a high scalar meaning (i.e., extreme) and an attenuating function (i.e., *p* is unnecessary, and the speaker is objecting to *p* in a weak manner). The quantifier *nani-mo* is an emphatic NPI. The reactive attitudinal *nani-mo* may appear idiosyncratic, but its meaning and function can be captured systematically under a typology of NPIs.[5]

4. Formal analysis of the reactive attitudinal *nani-mo*

Let us now consider how the meaning of the reactive attitudinal *nani-mo* can be formally analyzed. Structurally, unlike the quantifier *nani-mo*, the reactive attitudinal *nani-mo* is not placed in the argument position of a verb (see also Nakao and Obata 2009; Watanabe 2015). I assume that the reactive attitudinal *nani-mo* has the following basic structure:

(19)



Note that the first argument of the reactive attitudinal *nani-mo* does not need to be a simple proposition. It can be complex and have a negative proposition that includes another NPI (e.g., *nani-mo*, *mattaku*, 1-CL-*mo*), as shown in (20):

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yasun-da]-node-wa-arimasen.
absent-PST]-AUX-TOP-NEG.POLITE
'No, *nani-mo*, I didn't take a day off because Sato-san did.' (I took the day off because I caught a cold.) (Based on a reviewer's example, slightly revised)

(i) is naturally used in a context where the proposition that "I enter the school of law to become a lawyer" is pragmatically construed as extreme. In the case of (ii), it is used in a context where the proposition that "I took a day off because Sato-san did" is pragmatically construed as extreme.

[5] As a reviewer pointed out, there is still a difference between the reactive attitudinal *nani-mo* and a typical attenuating NPI (e.g., English *much*) in terms of a semantics/pragmatics interface. The former is outside the semantic scope of negation, while the latter has to be in the semantic scope of negation.

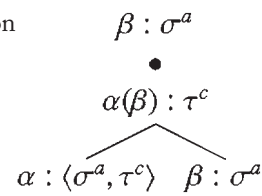
(20) a. Nani-mo [nani-mo nai]-wake-de-wa-nai.
What-MO what-MO exist.NEG-it.is.not.the.case.that
At-issue: It is not the case that there is nothing.
CI: The proposition that "there is nothing" is extreme and unnecessary, and I am reacting negatively in a weak manner.

b. (Context: A professor told students that they need not read all materials for the next class. The lazy student did not read any. A professor says angrily .....)
Nani-mo [{ mattaku / i-ppon-mo} yoma-naku-temo-ii]-to
What-mo [totally / one-CL_{piece}-even read-NEG-even-good]-that
iu-wake-dewa-nai!
say-it.is.not.the.case.that (Based on a reviewer's example)

The basic structure in (19), however, is unidimensional and does not distinguish between at-issue and CI levels. In this paper, I adopt Potts' (2005) multidimensional composition system. The crucial point in Potts' (2005) theory is that the system assumes there are two types, an at-issue type and a CI type, in natural language, and that each type is used in different dimensions. Potts (2005) assumes the following type system of $\mathcal{L}_{CI}$ in (21) and proposes a compositional rule termed CI application, as in (22):

(21) Type system for conventional implicature (Potts 2005: 55)
a. e^a, t^a, s^a are basic at-issue types for $\mathcal{L}_{CI}$.[6]
b. e^c, t^c, s^c are basic CI types for $\mathcal{L}_{CI}$.
c. If σ and τ are at-issue types for $\mathcal{L}_{CI}$, then $\langle\sigma, \tau\rangle$ is an at-issue type for $\mathcal{L}_{CI}$.
d. If σ is an at-issue type for $\mathcal{L}_{CI}$ and τ is a CI type for $\mathcal{L}_{CI}$, then $\langle\sigma, \tau\rangle$ is a CI type for $\mathcal{L}_{CI}$.

(22) CI application



In the application above, an α that is of type $\langle\sigma^a, \tau^c\rangle$ takes a β of type σ^a and returns a CI of type τ^c. Critically, this rule is resource-insensitive. β is taken by α, but simultaneously passes up to the level above the bullet. A bullet • is a metalogical device for separating independent lambda expressions.

Regarding the meaning of the reactive attitudinal *nani-mo*, I propose that it has the following denotation (The underlined part is a precondition for expressing the speaker's feeling of objection):

(23) [[nani-$mo_{Attitudinal}$]]: $\langle t^a, t^c\rangle = \lambda p$: <u>$p$ is salient in discourse</u>. extreme(p) $\wedge \neg\Box p$ for

[6] e is the type of entity, t is the type of proposition, and s is the type of world.

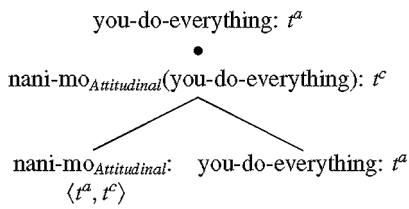
$sp \wedge \text{object-to}(sp, p) \wedge \mu_{objection} < \max_{objection}$

The reactive attitudinal *nani-mo* is a function that takes a proposition (that is salient in discourse) and conventionally implies that p is extreme and unnecessary, and the speaker is objecting to p in a weak manner (i.e., the degree of objection is less than the maximum, namely, not totally objecting to p).[7] Let us consider the compositionality of the reactive attitudinal *nani-mo* based on (24):

(24) Nani-mo zenbu su-ru hituyoo-wa nai.
What-MO all do-NON.PST necessity-TOP exist.NEG
At-issue: You needn't do everything.
CI: I am thinking that "to do everything" is too much.

First, *nani-mo* combines with the at-issue proposition via the CI application, as shown in (25):

(25)



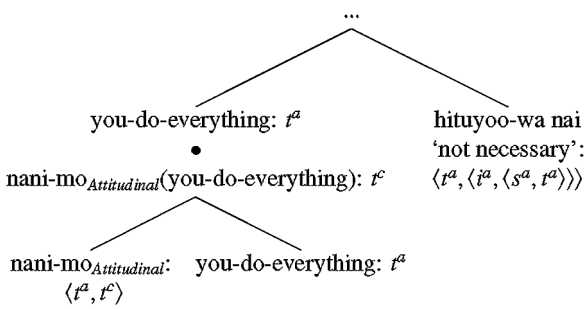
[7] One might think that the "$\neg\Box p$ for $sp \wedge \text{object-to}(sp, p) \wedge \mu_{objection} < \max_{objection}$" part of the attitudinal *nani-mo* sounds redundant. As a reviewer pointed out, if a speaker weakly objects to p, then the speaker will think that it is not necessary. However, I consider that the non-necessity part and the weak objection part are not the same. The former is concerned with the speaker's attitude toward a proposition, while the latter is concerned with a speech act. This is corroborated by the fact that while there can be various ways to object to A's utterances, the reactive attitudinal *nani-mo* cannot co-occur with an interrogative expression such as *soo desu-ka nee* 'Is that so?' that can be used as a weak objection:

(i) A: Tetuya-de kansei-saseru-beki-desu-yo-ne.
Staying.up.late-with finish-make-should-PRED.POLITE-Prt-Prt
'I should stay up all night to finish it, right?'
B: (?? Nani-mo) soo-desu-ka-nee.
What-MO that-PRED.POLITE-Q-Prt
'Is that so? (I am not sure).'
B': Iya nani-mo soko-made su-ru hituyoo-wa
No what-MO that-degree do-NON.PST necessity-CONT.TOP
nai-to omoi-masu.
NEG-that think-POLITE
'No, I don't think we need to go that far.'

The reactive attitudinal *nani-mo* is not just weakly objecting to p but also conveying that p is not necessary; the sentence with the reactive attitudinal *nani-mo* must use a modal(-like) expression that fits its function.

The at-issue proposition that is passed up to the at-issue dimension is then combined with a "negative modal expression" via the standard function application, as shown in (26):

(26)



It is important to clarify my assumptions regarding the semantics of negative modals. Here, I assume that negative modal expressions such as *hituyoo-wa nai* form a constituent, which is interpreted as a gradable modal (Lassiter 2017).

Lassiter (2017: 253) claims that the English *ought/should* is a relative gradable predicate, similar to adjectives such as *tall* and *good*. Typical relative-standard adjectives such as *tall* are sensitive to the comparison class. Whether "Taro is tall" is true depends on what kind of standard a speaker posits (he could be tall for a Japanese student, but he may be not tall for a basketball player). Lassiter claims that *ought* has this kind of context sensitivity. He claims that *ought* could hold a proposition ϕ in some contexts, depending on the alternatives that ϕ is compared to. In this view, *ought*(ϕ) means that the degree of obligation of ϕ is greater than the contextual standard θ:

(27) $\mu_{ought}(\phi) > \theta_{ought}$ (Lassiter 2017: 253)

I assume that, as with positive modals like *ought/should*, *hituyoo-wa nai* 'unnecessary' is also a relative gradable predicate. Whether a proposition is unnecessary is determined based on the contextual standard of necessity that a speaker posits. One piece of evidence for the idea that *hituyoo-wa nai* is gradable is that the degree modifiers such as *sonnani* 'that much' and *amari* 'that much/all that' can modify the negative modal expression *hituyoo-wa nai*:

(28) {Sonnani /amari} hituyoo-(wa) nai.
That.much /all.that necessary-TOP exist.NEG
'It is not so necessary.'

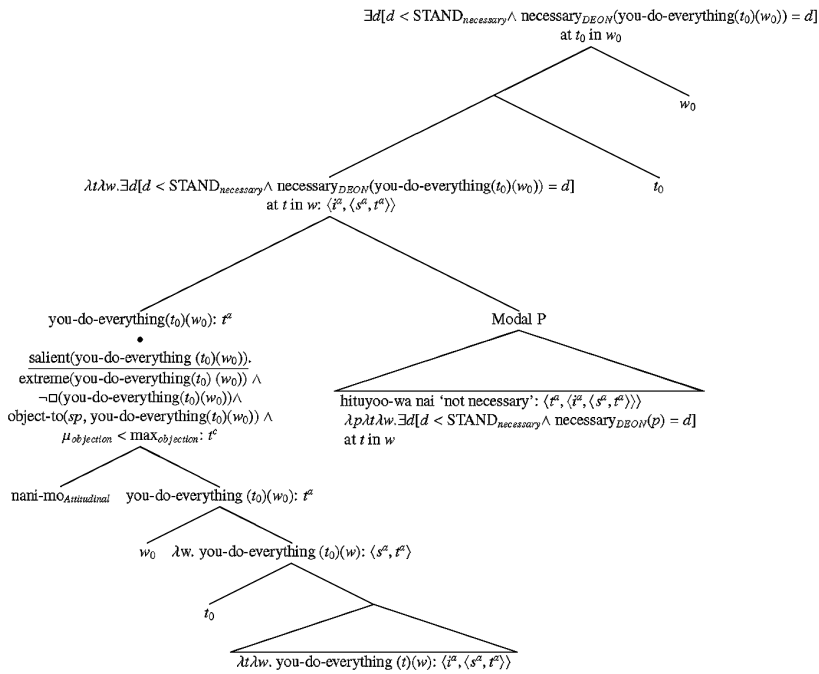
I assume that *hituyoo-(wa) nai* has the following denotation (*i* is the type of tense, *s* is the type of world, and *d* is a variable for degree):

(29) [[hituyoo-(wa) nai]]: $\langle t^a, \langle i^a, \langle s^a, t^a\rangle\rangle\rangle$
$= \lambda p\lambda t\lambda w.\ \exists\, d[d < \text{STAND}_{necessary} \wedge \text{necessary}_{DEON}(p) = d]$ at t in w

Hituyoo-(wa) nai 'unnecessary' takes a proposition p, a time t, and a world w, and

denotes that the degree of necessity of p is less than a contextual standard. The following figure shows the logical structure of the entire sentence in (24), where t_0 is the current time and w_0 is the current world):[8]

(30)



5. Explaining distribution patterns

Let us now consider the distribution of reactive attitudinal *nani-mo*. I argue that the distribution of the attitudinal *nani-mo* is naturally explained by the combination of the lexical meaning of the reactive attitudinal *nani-mo* and the pragmatic constraint of attitude matching:

(31) (Lexical meaning of reactive attitudinal *nani-mo*)
[[nani-mo$_{Attitudinal}$]]: $\langle t^a, t^c\rangle = \lambda p$: p is salient in discourse. extreme(p) $\wedge \neg\Box p$ for $sp \wedge$ object-to(sp, p) $\wedge \mu_{objection} <$ max$_{objection}$

(32) Pragmatic constraint of attitude matching: The speaker's attitude in the CI dimension and the at-issue dimension must match.

In this approach, the reactive attitudinal *nani-mo* needs to appear with negation because otherwise, there will be a mismatch between the CI and at-issue

[8] The CI meaning of type t^c is interpreted at the root node via parsetree interpretation (Potts 2005).

dimensions in terms of the speaker's attitude, as shown in the following two-dimensional representation:

(33) Infelicitous situation
at-issue dimension: p

CI dimension: extreme(p) $\wedge$ $\neg\Box p$ for sp $\wedge$ object-to(sp, p) $\wedge$ $\mu_{objection} < \max_{objection}$

However, the crucial point is that, as noted in the introduction, the reactive attitudinal *nani-mo* usually cannot appear in a simple negative sentence:

(34) a. ??Nani-mo ima sore-o si-nai.
What-MO now it-ACC do-NEG
'lit. *Nani-mo* you don't do it in a hurry.'
b. ??Nani-mo (watasi-wa) zenbu tabe-nai.
What-MO I-TOP all eat-NEG
'lit. *Nani-mo* I do not eat everything.'

A simple negation sentence (usually) has the function of a firm denial ($\neg p$), which does not match the speaker's attitude in the CI component (i.e., the meaning of nonnecessity and weak objection/denial).

Note that the matching between a CI component and an at-issue component by the general pragmatic constraint of attitude matching is done at a pragmatic (attitudinal) level, rather than at a logical (truth-conditional) level. For example, as a reviewer pointed out, from a purely logical perspective, the "weak objection to p and $\neg\Box p$" meaning is consistent (not contradictory) with "$\Diamond p$." However, as the following example shows, the reactive attitudinal *nani-mo* cannot co-occur with the modal expression *-temo yoi* 'may,' which expresses permission:

(35) *Nani-mo [isoide sore-o si]-temo yoi.
What-MO in.a.hurry it-ACC do-even.if good.
At-issue: You may do it in a hurry.
CI: I am thinking that "you do it in a hurry" is extreme and unnecessary.
(Based on a reviewer's example)

At the CI level, the reactive attitudinal *nani-mo* conveys that "you do it in a hurry" is extreme and unnecessary, and the speaker weakly objects to the proposition; however, in the at-issue level, "you may do it in a hurry" expresses permission (not objection), and they do not match at the attitudinal level. In the following subsections, we will consider the circumstances under which a sentence with the reactive attitudinal *nani-mo* becomes natural.

5.1. Co-occurrence with a negative deontic modal

The most typical negative expression that the reactive *nani-mo* co-occurs with is a negative deontic modal such as *hituyoo-(wa) nai* 'not necessary,' *naku-temo yoi*

'needn't' and *koto-wa nai* 'needn't' :[9]

(36) (With a deontic modal, $\neg\Box_{deontic}$)
Nani-mo isoide sore-o {su-ru hituyoo-wa
What-MO in-a-hurry it-ACC do-NON.PST necessity-TOP
nai / si-naku-temo yoi / su-ru-koto-wa
exist.NEG / do-NEG-even.if good / do-NON.PST-thing-TOP
nai}.
exist.NEG
At-issue: You needn't to do it in a hurry.
CI: "You do it in a hurry" is too much and unnecessary.

Naku-temo yoi is the morphologically concessive expression 'good even if,' but it has a negative modal expression meaning 'needn't,' and I assume that, similarly to *hituyoo-(wa) nai*, it forms a negative deontic modal expression. As the following figure shows, adding a deontic modal ($\neg\Box$) makes the at-issue meaning of the sentence consistent with the CI meaning of the reactive attitudinal *nani-mo*:

(37) Negative sentence with necessity modal
at-issue: $\neg\Box p$

CI dimension: extreme(p) $\wedge$ $\neg\Box p$ for sp $\wedge$ object-to(sp, p) $\wedge$ $\mu_{objection} < \max_{objection}$

This analysis predicts that prohibition modals ($\Box\neg$) cannot naturally co-occur with the attitudinal *nani-mo*. This prediction is borne out as shown in (38):

(38) (With a deontic (prohibition) modal, $\Box_{deontic}\neg$)
?? Nani-mo isoide sore-o {yatte-wa ike-nai /
What-MO in.a.hurry it-ACC do-TOP good-NEG /

---

[9] Note that *koto-wa nai* is lexically ambiguous between a negative modal expression (meaning 'needn't') and a regular non-modal nominalized expression (see also Kawase 2011). Thus, the following sentence can be ambiguous between a modal interpretation 'needn't' and a literal interpretation:

(i) (Ambiguous between a quantifier reading and a reactive attitudinal reading)
Nani-mo ima ya-ru-koto-wa nai.
What-MO now do-NON.PST-thing-TOP NEG
Reading 1: *Nani-mo* you needn't do it now. (= modal interpretation)
Reading 2: I have nothing to do now. (*koto-wa nai* 'there is nothing' = literal interpretation)

Note, however, that the following sentence has only a quantifier reading:

(ii) Ima ya-ru-koto-wa nani-mo nai. (Quantifier reading only)
Now do-NON.PST-thing-TOP what-MO NEG
'I have nothing to do now.'

In this environment, *nani-mo* cannot take a proposition as its argument.

ya-ru-beki-de-wa nai}.
do-NON.PST-should-PRED-TOP NEG
At-issue: You mustn't/shouldn't do it in a hurry.
CI: "You do it in a hurry" is extraordinary and unnecessary.

Here, there is a mismatch between *nani-mo*'s CI meaning (¬□) and the meaning of the prohibition modal (□¬) in terms of the speaker's attitude, as shown in (39):

(39) ?? At-issue dimension: $\square\neg p$

CI dimension: extreme(p)∧ $\neg\square p$ for $sp \wedge$ object-to(sp, p) $\wedge \mu_{objection} < \max_{objection}$

5.2. Examples with external negation

The attitudinal *nani-mo* can also naturally co-occur with external negative expressions (see also Inoue 1986):

(40) (With external negation/epistemic necessity, $\neg\square_{epistemic}$)
Watasi-wa nani-mo hantai site i-ru
I-TOP what-MO objection do PROG-NON.PST
{-wake-dewa nai / -node-wa nai}.
-it.is.not.the.case.that /-AUX-TOP NEG
At-issue: I am not necessarily opposing.
CI: Your idea that I am opposing is too much, and it is not necessarily the case.

I assume that these external negative expressions have the modal meaning 'not necessarily the case' (= $\neg\square_{epistemic}$), at least pragmatically, which is used to convey a weak objection.[10] Thus, they match the CI component of *nani-mo*, as shown in (41):

(41) at-issue dimension: $\neg\square p$

CI dimension: extreme(p) ∧ $\neg\square p$ for $sp \wedge$ object-to(sp, p) $\wedge \mu_{objection} < \max_{objection}$

5.3. Examples with a contrastive *wa*

The addition of a contrastive topic *wa* also satisfies the general constraint of attitude matching:

(42) (The speaker, the president of a company, requested that an employee perform a job, but the employee hesitated to accept the request.)
Watasi-wa nani-mo [ima ya-re]-*(to)-wa
I-TOP what-MO now do-IMP-that-CONT.TOP
itte i-masen.
say PROG-NEG.POLITE
At-issue: I am not saying that you should do it now.

[10] Yoshimura (2013) analyzes the function of *wake-dewa nai* and *node-wa nai* in terms of objection based on relevance theory.

CI: "Doing it now" is extreme and unnecessary.
Implication via the contrastive topic: I am saying that you should do it later.

Here, the speaker denies the salient proposition "you do it now" (which is embedded under the imperative morpheme), but the speaker's attitude of denial is weak because by using the contrastive *wa*, the speaker signals that the hearer should do it anyway (later). By using a contrastive topic, the speaker indicates that they are asking the hearer to do it anyway, and pragmatically, they do not completely deny the possibility of doing it.[11]

6. Further investigation of the reactive attitudinal *nani-mo* distribution

In this section, we will further examine some seemingly complicated/non-straightforward cases, such as embedding in a relative clause, co-occurrence with another NPI in the same clause, and an ellipsis and show that the proposed analyses can naturally explain these cases as well.

6.1. Embedded case

One seemingly non-straightforward case is the embedded reactive attitudinal *nani-mo*. As the following example shows, the reactive attitudinal *nani-mo* can appear inside a relative clause (Satoshi Tomioka, personal communication):

[11] A reviewer suggested that *tumori-wa-nai* 'not intend to do' and *omo-tte-nai* 'not thinking' are also consonant with the reactive attitudinal *nani-mo*, and I consider that contrastiveness is also involved in these cases as well:

(i) a. (Q: Are you going to eat all?)
Nani-mo zenbu tabe-ru tumori-wa nai.
What-MO all eat-NON.PST intention-CONT.TOP NEG
'*Nani-mo*, I don't intend to eat all.'
b. (Q: Are you thinking that that child ate all?)
Nani-mo anoko-ga zenbu tabe-ta-to-wa
What-MO that.child-NOM all eat-PST-that-CONT.TOP
omotte i-nai.
think PROG-NEG
'*Nani-mo*, I am not thinking that that child ate all.'

Note that, as the reviewer pointed out, without *nani-mo*, these expressions usually convey "stronger" claims than what is said. For example, (ia) without *nani-mo* can be taken to have conveyed "I intend not to eat all," and (ib) without *nani-mo* can be taken to have conveyed "I am thinking that the child didn't eat all." In the literature, this is often called the NEG-raising phenomenon, which concerns the raising of negation from the embedded/subordinate clause of certain predicates to the main clause, and it is often considered that NEG-raising sentences are perceived as more polite than their counterparts (see, e.g., Horn 1989). However, it seems that if the reactive attitudinal *nani-mo* is added, a stronger interpretation (e.g. "S thinks that not p") becomes not salient due to its pragmatic function (i.e., the speaker objects to p in a weak fashion).

(43) (Sore-wa) nani-mo wazawaza tiketto-o katte-made
That-TOP what-MO taking.the.trouble.to ticket-ACC buy-so.far.as
mi-tai eiga-de-wa nai.
watch-want movie-PRED-TOP NEG
'It is not a movie that I want to watch going so far as buying a ticket for it.'

The salient proposition is "I (or we) buy a ticket." Crucially, since the adverb *waza-waza* 'all the way/taking the trouble to' is a speaker-oriented adverb/CI-expression, it is not part of a salient proposition. This sentence is natural in the following context:

(44) (Context: A and B are looking at a list of movies.)
A: Kono eiga, tiketto-o kae-ba mir-eru-kedo mi-tai?
This movie ticket-ACC buy-COND watch-can-but watch-want
'We can watch this movie if we buy tickets. Do you want to watch it?'
B: (Sore-wa) nani-mo [wazawaza tiketto-o katte-made
That-TOP what-MO taking.the.trouble.to ticket-ACC buy-so.far.as
mi-tai eiga-de-wa nai-yo.
watch-want movie-PRED-TOP NEG-Prt
'It is not a movie that I want to watch going so far as buying a ticket for it.'

An interesting point of this sentence is that although *nani-mo* is embedded (and does not interact with a modal), it still requires a negative element in the main clause. If there is no negative element in the main clause, the sentence becomes unnatural:

(45) (Sore-wa) (*nani-mo) [wazawaza tiketto-o katte]-made
That-TOP what-MO taking.the.trouble.to ticket-ACC buy-so.far.as
mi-tai eiga-da.
watch-want movie-PRED
'It is a movie that I want to watch so far as buying a ticket for it.'

I consider that the oddity of (45) with *nani-mo* can be explained based on the pragmatic constraint of attitude matching. At the CI level, the speaker construes that the proposition that "I buy a ticket" is extreme and unnecessary for the speaker, and they are objecting to it in a weak manner. At the same time, at the at-issue level, the speaker says that it is a movie that they want to watch. Thus, there is inconsistency between the speaker's attitude at the embedded (local) level and the main clause (global) level. There is no sense of objection in the main clause (note that (45) without *nani-mo* is perfectly natural). This example suggests that it is difficult to explain the distribution of reactive attitudinal *nani-mo* only in terms of syntactic structures. We must consider the level of the speech act.

6.2. Co-occurrence with another NPI and use in rhetorical questions

Another seemingly complicated case is co-occurrence with another NPI. In the literature on NPI, it is widely observed that a single negation can license multiple

occurrences of NPIs (e.g., Kato 1985; Ladusaw 1992; Aoyagi and Ishii 1994):

(46) a. Maria didn't say anything to anybody. (Ladusaw 1992: 244)
b. Taro-wa dare-ni-mo nani-mo hanasa-naka-tta.
Taro-TOP who-to-MO what-MO speak-NEG-PST
'Taro didn't say anything to anyone.'

However, as the following example shows, the reactive attitudinal *nani-mo* and at-issue NPI wh-*mo* cannot co-occur in the same clause:

(47) ?? Nani-mo dare-mo ku-ru hituyoo-wa nai.
What-MO who-MO come-NON.PST necessity-TOP NEG
'Lit. *Nani-mo*, it is not necessary that anyone comes.'

The oddity of (47) makes sense considering the fact that while the reactive attitudinal *nani-mo* is pragmatically required to co-occur with a modal-like expression (in a simple sentence), the at-issue quantifier NPI *dare-mo* is not. In fact, the NPI *dare-mo* cannot be licensed beyond a clause boundary ((47) without *nani-mo* sounds odd). Note that if *ga* is added after *dare-mo* in (47), the sentence becomes natural. However, in that case, *dare-mo* is interpreted as the universal quantifier 'everyone':

(48) Nani-mo dare-mo-ga ku-ru hituyoo-wa nai.
What-MO who-MO-NOM come-NON.PST necessity-TOP NEG
'Lit. *Nani-mo*, it is not necessary that everyone comes.'

Although the reactive attitudinal *nani-mo* cannot co-occur with an emphatic NPI, this does not mean that the reactive attitudinal *nani-mo* cannot co-occur with another NPI with a single negation. As in the following example, it can co-occur with an attenuating NPI such as *sonnani* 'that (much)':

(49) Nani-mo sonnani isogu hituyoo-wa {nai /*aru}.
What-MO that hurry necessity-TOP exist.NEG / exist
At-issue: You needn't go in such a hurry.
CI: "You go in such a hurry" is extreme and unnecessary and I am reacting negatively in a weak manner.

How can we explain this fact theoretically? Similar to the reactive attitudinal *nani-mo*, *sonnani* is an attenuating NPI that cannot appear in a positive sentence:

(50) Sonnani isogu hituyoo-wa {nai /*aru}.
That.much hurry necessity-TOP NEG /exist
'You needn't be in such a hurry.'

However, they differ in terms of their semantics/pragmatic interface. While the reactive attitudinal *nani-mo* has the property of a CI, *sonnani* has the property of an at-issue. The high degree meaning triggered by *sonnani* can be challenged by saying "No, that's false. This is very urgent." I would like to consider that each NPI needs to co-occur with negation for different reasons. The reactive attitudinal

nani-mo coveys that the salient proposition *sonnani isogu* 'you go in such hurry' is extreme and unnecessary and "requires" a negative modal to satisfy its pragmatic function of weak objection. In contrast, in the case of *sonnani*, it should be "licensed" by negation in the at-issue dimension.

Note that as many Japanese descriptive studies mention, *sonnani* has a broad distribution pattern, and it can appear conditionals and questions (see Ido 2019). Interestingly, the reactive attitudinal *nani-mo* can also appear in the questions:

(51) Nani-mo sonnani isogu hituyoo-wa aru-no?
What-MO that.much hurry necessity-TOP exist-Q
'*Nani-mo* do you have to go in such a hurry?'

This sentence has been interpreted as a rhetorical question. It is used under the assumption that "to go in such a hurry" is unnecessary.[12]

6.3. Elliptical use of the reactive attitudinal *nani-mo*

The reactive attitudinal *nani-mo* can be used elliptically, but its elliptical behavior is somewhat different from that of the quantifier *nani-mo*. As Watanabe (2004) observes, the quantifier *nani-mo* can be used as an elliptical answer, as shown in (52):

(52) (Quantifier *nani-mo*)
Q: Nani-o mi-ta-no? A: Nani-mo.
What-ACC see-PST-Q What-MO
'What did you see?' 'Nothing.' (Watanabe 2004: 567)

In contrast, the reactive attitudinal *nani-mo* cannot be used in a completely elliptical fashion, and some additional elements that have an extreme meaning, such as *soko-made* 'that much,' must be added after the reactive attitudinal *nani-mo*, as shown in (53B'):

(53) (Reactive attitudinal *nani-mo*)
A: Syain zenin-ni kore-o yar-ase-masu.
Employee all-to this-ACC do-make-POLITE
'I will make all of the employees to do this.'
B: #Nani-mo. B': Nani-mo soko-made.
What-MO What-MO that-extent
'There is no need to do that much.'

This "semi-elliptical" behavior of the reactive attitudinal *nani-mo* can be under-

[12] The reactive attitudinal *nani-mo* can also occur in questions independently:

(i) Nani-mo ima ya-ru hituyoo-(wa) aru?
What-MO now do-NON.PST necessity-TOP exist
'*Nani-mo*, is it necessary to do it now?'

This sentence has a rhetorical meaning, and it implies that it is not necessary to do it now.

stood as a theoretical consequence of the semantic status of the reactive attitudinal *nani-mo*. Since the meaning of the reactive attitudinal *nani-mo* is non-at-issue (CI), it cannot be (part of) an answer for a question under discussion (QUD). However, by adding an additional element, an implicit negative modal statement becomes assessable (through the assistance of the meaning of the reactive *nani-mo*), and the negative modal statement serves as an answer to a QUD.

7. Related phenomenon: The Japanese reactive attitudinal *totemo*

So far, I have focused on the reactive function of *nani-mo*. In this section, I will show that the phenomenon of reactive attitudinal NPI is not peculiar to *nani-mo*, but it can also be found in the expressive *totemo* 'lit. very' in Japanese. As the following example shows, *totemo* can intensify the degree of a gradable predicate:

(54) Kono ie-wa totemo {ookii / *ookiku-nai}.
This house-TOP very big / big-NEG
'This house is {very big / not very big}.'

This use of *totemo* is a positive polarity item (PPI) because it cannot co-occur with logical negation, as shown in (54). However, *totemo* can also intensify a negative modal statement:

(55) (Question: Can you do it by tomorrow?)
Asita-made-ni-wa totemo {deki-nai-deshoo /
Tomorrow-by-TOP very can-NEG-will.POLITE /
*deki-ru-deshoo}.
can-NON.PST-will.POLITE
'It will be impossible to do it by tomorrow.' (Implication: I am emphasizing impossibility.)

Totemo, in (55), emphasizes the degree of inability. Note that the positive counterpart is ill-formed. As Sawada (2019) pointed out, this use of *totemo* has a reactive property. In (55), *totemo* is natural in a context in which the proposition "you do it by tomorrow" is salient (activated) and expected to be true (see also Morita 1989; Watanabe 2001). Thus, it would be odd to utter (55) in an out-of-the-blue context. Furthermore, similar to the reactive attitudinal *nani-mo*, *totemo* in (55) behaves as an expressive, and its meaning is non-at-issue. This is supported by the fact that the meaning triggered by expressive *totemo* cannot be within the semantic scope of the modal *deshoo* 'will.' Although the expressive *totemo* is different from the reactive attitudinal *nani-mo* in that it has a strong rejective function, they both share the same properties, that is, they are reactive and have not-at-issue meanings.[13]

[13] There is also an expression, *betuni* 'particularly,' that has a similar pragmatic function to that of the reactive attitudinal *nani-mo* (Inoue 1986):

(i) Betuni {isogu hituyoo-wa nai / isoi-de i-nai}.
Particularly hurry necessity-TOP exist.NEG / hurry-in be-NEG
With a negative modal: 'You don't particularly need to be in a hurry.'

8. Toward a new typology of negative polarity items

Finally, let us discuss how the phenomenon of the reactive attitudinal *nani-mo* can be regarded as the variation of NPIs. The existence of the reactive attitudinal *nani-mo* (and also the reactive attitudinal *totemo*) suggests that there is a new class of NPIs, that is, reactive attitudinal NPIs belong to a new class of NPIs, as shown in Figure (56):

(56) Typology of Negative Polarity Items

	At-issue	CI
An NPI is inside the semantic scope of NEG	minimizer, *any* (Class 1)	None (Class 4)
An NPI is outside the semantic scope of NEG	n-word (Class 2)	reactive attitudinal NPIs (*nani-mo, totemo*) (Class 3)

Class 1 and Class 2 NPIs in Figure (56) have been extensively studied in the literature on NPIs/negative concord. Typical examples of Class 1 items are *any*-type NPIs and minimizer NPIs (e.g., Kadmon and Landman 1993; Krifka 1995; Chierchia 2013). These NPIs are within the semantic scope of negation, and their meanings are part of "what is said":

(57) a. John did not say anything.
b. John didn't say a word.
c. John doesn't give a damn.

The idea that the meanings of Class 1 NPIs are part of "what is said" is supported by the fact that their meanings can be challenged by saying "No, that is not true," as shown in the following example:

(58) A: There aren't any cookies left.
B: No, that is not true. There are some left.

The typical examples of Class 2 NPIs are emphatic n-words in Hungarian and Greek n-words (Szabolcsi 1981; Giannakidou 2000), the meanings of which are not in the semantic scope of negation but are part of "what is said." For example, Giannakidou (2000) argues that Greek emphatic n-words, such as TIPOTA in (59), are universal quantifiers that outscope negation based on various linguistic facts/diagnostics, including *almost/absolutely* modification, donkey anaphora, and predicate nominals.

(59) Dhen ipa TIPOTA. (Greek)
Not said.1sg n-thing

With simple negation: 'I am not particularly in a hurry.'

However, unlike *nani-mo*, *betuni* does not have a strong rejective meaning (Inoue 1986). Furthermore, *betuni* can appear in a simple negative sentence.

'I didn't say anything.' (Giannakidou 2000: 458)

In the literature, Class 2 NPIs are often called negative concord items (NCIs) because they are placed above negation and may appear in fragment answers. Because NCIs also need negation for legitimacy, I assume that NCIs constitute one variety of NPIs (see, for example, Giannakidou (2011) for the relationship between NPIs and NCIs). As we saw in Section 2, some researchers have argued that wh-*mo* has a wide-scope universal property and, in this view, it will belong to Class 2 NPIs (e.g., Kataoka 2006; Shimoyama 2011). Class 1 NPIs and Class 2 NPIs are different in terms of scope, but their meanings are all part of "what is said." They contribute to the truth condition of a given sentence.

The Japanese reactive *nani-mo* and *totemo* belong to neither Class 1 nor Class 2; they are beyond the scope of negation and do not contribute to "what is said."

Finally, let us consider the following question: Are there class 4 NPIs? Logically, there cannot be such NPIs. Specifically, there cannot be expressions that are within the scope of negation but do not contribute to "what is said." However, we can say that the so-called vulgar NPIs partially belong to this class (I thank Jason Merchant and Thomas Grano for valuable discussions regarding vulgar NPIs).

(60) a. He doesn't know shit about GB. (Postal 2004: 162)
b. Olmstead doesn't understand squat about topology. (Postal 2004: 159)

Postal (2004) claims that there is perfect equivalence between *any* and vulgar NPIs:

(61) Irma does not understand dick about clones.
= Irma does not understand anything about clones.

I argue that although the above sentences may be truth-conditionally equivalent, they differ at the not-at-issue level. It seems that the vulgar NPIs in the above sentences conventionally implicate a speaker's negative attitude/emotional feeling toward an utterance situation. I consider vulgar NPIs to be mixed content bearers in the sense of McCready (2010) and Gutzmann (2012) in that they have truth-conditional meaning similar to *any*, but in addition to that, they have an expressive/CI component. If we consider them as such, the not-at-issue component of vulgar NPIs will belong to Class 4, and the vulgar NPIs, as a whole, have properties of both Class 1 and Class 4.

9. Conclusion

In this study, I investigated the meaning and use of the reactive attitudinal *nani-mo*. I argued that, unlike the quantifier *nani-mo*, the reactive attitudinal *nani-mo* is an expressive, and it conventionally implies that the speaker considers that the given proposition *p*, which is salient in the discourse, is extreme and unnecessary, and they are objecting to *p* in a weak manner (i.e., not totally objecting to *p*). I have argued that the polarity sensitivity and occurrence with a modal are explained

based on the interaction between the CI meaning of the reactive attitudinal *nani-mo* and the general pragmatic constraint of attitude matching.

This study has important theoretical implications for the theory of NPIs. NPIs are generally assumed to be licensed by negation or downward-entailing operators (e.g., Ladusaw 1980) and non-veridical operators (e.g., Giannakidou 1998) at the level of syntax and logical structure. However, the reactive attitudinal *nani-mo* is not licensed by these operators in the syntax/semantics dimension. Rather, it requires a negative element due to its pragmatic function. This paper suggested a new type of NPI, a reactive attitudinal NPI the distribution patterns of which are restricted by its pragmatic function of objection. This type of NPI is highly distinctive in that it is used as an expressive and is highly discourse-oriented. In this paper, I primarily focused on Japanese data, and more serious investigations will be necessary regarding the extent to which the reactive attitudinal NPI is cross-linguistically generalizable.

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[Received 30 December 2020;
Accepted 20 May 2021]

【要　旨】

日本語の反応態度的な「何も」について
——否定極性項目の新たなクラス——

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日本語の否定極性表現（NPI）の「何も」には,「量化用法」と話者の否定的態度を表す「反応態度」用法があるが，後者は前者と異なり，非命題レベルで使われ，モダリティと共起するという点で通常の NPI には見られない特性を有している。本稿では, 反応態度的な「何も」は，発話状況で際立った（活性化された）命題 p は極端で必然的ではないという話者の感情を慣習的推意（CI）として表出しており，その極性およびモダリティとの共起性は,「何も」の CI と「意味論レベルと CI レベルで態度は一貫していなければならない」という一般的な語用論的制約との相互作用により説明することができることを論証する。これまでの NPI の研究では，統語論的・意味論的メカニズムにより認可される NPI に焦点が当てられてきた。本研究では，自然言語には，否定的な反応・態度的な語用論的機能により否定環境で現れる新たなタイプの NPI が存在することを示す。