Varieties of wh-exclamatives: A view from the negative wh-expressives in Japanese

Sawada, Osamu

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Osamu Sawada[*]

Abstract. Wh-exclamatives are usually considered degree constructions (e.g., Zanuttini & Portner 2003; Castroviejo 2008; Rett 2008). However, Japanese possesses what I call negative wh-expressives, which are unrelated to degree. I argue that unlike typical wh-exclamatives, negative wh-expressive sentences express a speaker's negative attitude, and their compositional system is similar to that of an interrogative sentence except for the speech act operator. That is, a negative wh-expressive occurs with a speech act operator, which takes a set of propositions Q and (i) presupposes that there is a unique proposition p in Q that is salient, and (ii) conventionally implies that p is unexpected and that the speaker has a negative attitude toward it. In this paper, we also look at cases in which the wh expression is embedded in the complement of *omo-tteiru* 'think' and cases in which *nani* 'what' acts as an adjunct, and show that these cases can also be explained by the core component of the proposed mechanism. This paper shows that wh-related exclamatives have both scalar and non-scalar types, and considers a new typology of exclamatives.

Keywords. exclamatives; negative wh-expressive; speech act; scalar vs. non-scalar; conventional implicature; presupposition; Japanese

1. Introduction. Wh-expressions are often used to convey a speaker's heightened emotions (surprise). The English wh-exclamative in (1a) and the Japanese wh-adverb *nan.te* in (1b) convey the speaker's surprise about the extreme degree of a target (e.g., Zanuttini & Portner 2003, Ono 2006, Castroviejo 2008, Oda 2008, Rett 2008, Hirayama 2021):

(1) a. What delicious desserts John bakes!
     b. Nan.te ookina ie-da!
         what.te big   house-PRED
         'What a big house it is!'

However, in Japanese (and English), a wh-expression can express the speaker's negative attitude, as in (2)(see also Kato 2015):

(2) a. (Context: A teammate made a simple mistake in baseball.)
         Nani ya-{tte-nda   / tten-no}!
         what do-PROG-PRED / PROG-Q
         'What are you doing!'

    b.   (Context: The addressee is driving a car and suddenly turned around.)

        Doko mi-{te-nda   / ten-no}!
        where look-PROG-PRED / PROG-Q

        'Where are you looking!'

(2) can be interpreted as questions, but if the sentence has a descending intonation, it is interpreted expressively, with the speaker conveying a negative attitude toward a given situation.[1]

What are the differences between the exclamative sentences in (1) and (2)? What is the relationship between the expressive meaning and the ordinary question in (2)?

In this paper, I claim that although wh-exclamatives (=1) and negative wh-expressives (=2) convey a speaker's unexpected feelings, their meanings are different. In the negative wh-expressive, the proposition corresponding to the answer to the question (if it is a question) is salient in the context, and the speaker has a negative attitude toward it. I argue that the negative wh-expressive in Japanese is not a degree construction, and that its compositional system is similar to that of an interrogative sentence, except for the speech act operator. More specifically, I will claim in Section 3 that the negative wh-expressive utilizes an expressive speech act E-force$_{Neg.attitude}$, which takes a set of propositions Q and (i) presupposes that there is a unique proposition p that is in Q and is salient in the given context, and (ii) conveys that p is unexpected and that the speaker has a negative attitude toward it at the level of conventional implicature (CI)(Potts 2005; McCready 2010; Sawada 2010, 2018; Gutzmann 2012).

Note that a negative wh-expressive can appear in a more complex environment than (2). In Section 4, I will discuss what I call the indirect type of negative wh-expressive that co-occurs with the verb *omo-tteiru* 'thinking':

(3)   Indirect type (Context: The speaker and hearer gather at a mountain trailhead to climb Mt. Fuji. The following utterance was made when the speaker saw the listener arrive at the meeting place wearing beach sandals.)

        Oioi   doko-(ni) iku-to omo-tte-nda.
        hey.hey where-to go-that think-PROG-PRED

        'lit. Where do you think you are going!'

Here, the speaker is not complaining about the fact that the addressee thinks he is going to Mt. Fuji. Rather the speaker is complaining about the situation where the addressee wears beach sandals while thinking that they are going to Mt. Fuji. I assume that *omo-tteiru* with a

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[1] The English wh interrogative sentence can also be ambiguous between a regular question and a negative expressive. For example, the following sentences can be interpreted as expressives:

(i)   (Context: A teammate made a simple mistake in a baseball game.)
      What are you doing!
      (Negative attitude: The speaker expresses a negative attitude toward a teammate making a mistake.)

(ii)   (Context: The addressee is driving a car and suddenly turned around.)
      Where are you looking!
      (Negative attitude: The speaker expresses a negative attitude toward a given situation (i.e., The addressee is looking at a different place (e.g., turning around.))

The expressive meaning may need to be reinforced through appropriate intonation so that it is not interpreted as a regular question. For example, if there is intonational emphasis on "you", to convey the negative expressive meaning. I thank Thomas Grano for the valuable comments.

negative wh-expressive is connected to the utterance situation and is understood as 'thinking p while performing a contextually given act'. By assuming as such it is possible to analyze the direct type and indirect type in a unified manner using the same expressive speech act operator.

In Section 5, I also examine the case of *nani* 'what', which behaves as an adjunct:

(4) Nani ore-no keeki ku-tte-nda.
     what I-GEN cake eat-PROG-PRED
     'I have a negative attitude toward your behavior that you are eating my cake.'

In this case, I argue that the adjunctive expressive "*nani* (plus *nda*)" itself has become an illocutionary force operator. I will also clarify the similarities and differences between the adjunct negative wh-expressive *nani* and accusative wh-adjunct *nani-o*.

This paper clarifies that, in addition to a scalar type, there is a non-scalar type of wh-exclamatives that involves the speaker's emotional attitude and shows the similarities and differences between the semantics of question and the semantics of negative wh-expressive.

2. Differences between ordinary questions and negative wh-expressives. Let us first clarify the difference between an ordinary question and a negative wh-expressive in Japanese. First, an ordinary question and a negative wh-expressive differ in terms of intonation. In standard Japanese, normal interrogative sentences have an ascending intonation. In contrast, wh-sentences with emotive/expressive meaning (rhetorical questions) have descending intonation (e.g., Kato 2015; Tanaka 2021):[2]

(5) a. Nani-o   ya-tteiru-no?↑
         what-ACC do-PROG-Q
         'What are you doing?'
     b. Doko mi-ten-no?↑
         where look-PROG-Q
         'Where are you looking?'

(6) a. Nani-o   ya-tteiru-no?↓
         what-ACC do-PROG-Q
         'What are you doing!'
     b. Doko mi-ten-no?↓
         where look-PROG-Q
         'Where are you looking!'

Second, an ordinary question and a negative wh-expressive are different in that the latter, but not the former, does not request an answer. In negative wh-expressive sentences, the speaker knows what is going on in the current situation and is not asking a question. The speaker conveys a negative attitude toward the proposition that is salient in discourse. Thus the conversation in (7) sounds strange:

(7) A: (Context: A teammate made a simple mistake in a baseball game.)
         Nani ya-{tte-nda   / ten-no}!
         what do-PROG-PRED / PROG-Q
         'What are you doing!'

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[2] In negative wh-expressive there is a tendency to drop the particle, but doing so is not essential.

B: # Yakyuu-o   ya-ttei-masu.
  baseball-ACC do-PROG-PERF.HON
 'I am playing a baseball.'

The following conversation sounds natural, but in this case, B is only apologizing:

(8) A: (Context: A teammate made a simple mistake in a baseball game.)
   Nani ya-{tte-nda / ten-no}!
   what do-PROG-PRED / PROG-Q

   'What are you doing!'
  B: Gomen gomen.
   sorry sorry
   'I am sorry.'

Third, unlike the ordinary question, the negative wh-expressive has a reactive property. For example, in the following example, the speaker reacts to the fact that Taro received a C on the test:

(9) (Context: The speaker (a mother) just learned that Taro (her son) received a C on his exam.)

 Anta nani-ya-tten-no!
 you   what-do-PROG-Q

 'What are you doing!'

Thus, we cannot suddenly use the negative wh-expressive when nothing is happening. For example, while an ordinary question can begin with *tokorode* 'by the way' to start talking about a new topic, the negative wh-expressive cannot co-occur with *tokorode*:

(10) (Ordinary wh-question)

 Tokorode kinoo doko-ni iki-mashi-ta-ka?
 by.the.way yesterday where-to go-PERF.HON-PST-Q

 'By the way, where did you go yesterday?'

(11) (Negative wh-expressive)

 ?? Tokorode nani ya-tten-no!
  by.the.way what do-PROG-Q

 'By the way, what are you doing!'

Note that we need to distinguish between an ordinary question with a negative emotive meaning and a negative wh-expressive. In some cases, the meaning of a complaint is added to the ordinary question as follows:

(12) A: Oi doko iku-nda.
   hey where go-PRED
   'Hey, where are you going?'

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B: Chotto soko-made
        a.bit   there-to
        'Just up there for a moment.'

(13) A: Dooshite sonna koto-o   shi-ta-nda?
          why   such thing-ACC do-PST-PRED
          'Why did you do such a thing?
      B: Wakari-masen.
          know-NEG.POLITE
          'I don't know.'

In the above examples, one can get a negative meaning from A's utterance, but it is interpreted as a question; B's utterance is natural as an answer to A's question.

Furthermore, we need to distinguish between the negative wh-expressive and the wh-question with *ittai* 'the hell' as well. Like the case of the negative wh-expressive, the wh-question with *ittai* 'the hell' often expresses a speaker's strong emotions like anger or frustration (see Dikken & Giannakidou (2002) and Martin (2020) for discussions of the meaning/use of *wh the hell*):

(14) Ittai   Yamada-wa doko-ni i-tta-nda.
      the.hell Yamada-TOP where-to go-PST-PRED
      'Where the hell did Yamada go?'

However, unlike the negative wh-expressive, the wh-question with *ittai* is compatible only with a situation in which the speaker has no idea of the appropriate answer to the question (Oguro 2017).

Finally, the negative wh-expressive is also different from rhetorical questions (Sadock 1971; Han 2002; Caponigro & Sprouse 2007):

(15) Rhetorical question
      a. What has John ever done for Mary?
          (Assertion: John has not done anything for Mary.)
      b. Dare-ga   konna shigoto suru-daroo-ka.
          who-NOM such   job   do-will-Q
          'Who would do such a job?'
          (Assertion: No one would do such a job.)

Rhetorical questions have the characteristics of assertions (Sadock 1971) and, in these cases, the negation proposition (negation of the nucleus proposition) is asserted. This type of polarity-reversed assertive effect is not found in the negative wh-expressive.

3. Analysis of negative wh-expressives (direct type). Let us now consider how we can analyze the meaning of the negative wh-expressive formally based on the following example:

(16) (Context: A teammate made a simple mistake in baseball.)

      Nani ya-{tte-nda   / ten-no}!
      what do-PROG-PRED / PROG-Q

      'What are you doing!'

I consider that negative wh-expressive sentences and ordinary questions are the same except for their speech act operators. I propose that the negative wh-expressive utilizes an expressive speech act E-force$_{Neg.attitude}$, which takes a set of propositions Q and (i) presupposes that there is a unique proposition p that is in Q and is salient in the given context and (ii) conveys that p is unexpected and that the speaker (sp) has a negative attitude toward it at the level of conventional implicature (CI)(Potts 2005, McCready 2010, Gutzmann 2012):

(17) $[[\text{E-force}_{Neg.attitude}]]$: $\langle\langle\langle s^a, t^a\rangle, t^a\rangle, t^s\rangle =$
$\lambda Q_{\langle\langle s^a, t^a\rangle, t^a\rangle}$: $\iota p[p \in Q \ \wedge \ \text{salient}(p(w_0))]$. unexpected$(p(w_0))$ for $sp \ \wedge$
Neg-attitude$(sp, p(w_0))$

In terms of type, the superscript a stands for an at-issue type and the superscript s stands for a shunting type, which is used for the interpretation of CI that involves a resource-sensitive application (McCready 2010). Namely, the E-force operator returns only a conventional implicature and there will be no truth-conditional content in the utterance of negative wh-expressive. I assume that the uniqueness component of the force operator is a presupposition because it is contextually salient in discourse and is backgrounded, while the expressive component is a CI because it is speaker-oriented. Although I consider there to be a distinction between presupposition and a CI, they are not part of "what is said." Namely, they are not at-issue. This is corroborated by the fact that we cannot challenge the meanings by saying "No, that's false." Saying *sore-wa uso-da* 'that's false' after (16) is very strange.

Let us consider the compositionality of the negative wh-expressive, based on (16). First, structurally, we can posit the following structure for (16). I assume that the sentence-final particle *n(o)da* or *no* with descending intonation is a phonological realization of the E-force operator:

(18)
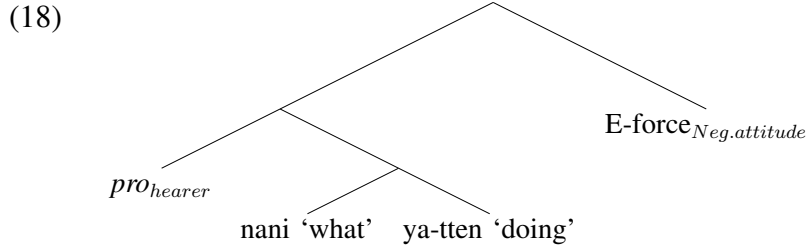
As for the meaning of *nani*, I assume that *nani* in (16) is concerned with an event and denotes a set of acts rather than a set of things.

(19)   a. $[[\text{nani}_{act}]] = \{a : a \in D_v \ \wedge \ a \text{ is an act}\}$
           $= \{$ an act of making a mistake, an act of playing defense in the infield, ... $\}$
       b. $[[\text{ya-(teiru)}]] = \{\lambda a \lambda x \lambda w. \text{doing}(x, a) \text{ in } w\}$

Nani$_{act}$ is then combined with other elements via the pointwise function application (Kratzer & Shimoyama 2002), as shown in:

(20)   Pointwise Functional Application (Kratzer & Shimoyama 2002): If α is a branching node with daughters β and γ, and $[[\beta]] \subseteq D_\sigma$ and $[[\gamma]] \subseteq D_{\langle\sigma,\tau\rangle}$, then $[[\alpha]] = \{a \in D_\tau : \exists b \exists c[b \in [[\beta]] \wedge c \in [[\gamma]] \wedge a = c(b)]\}$

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(21)　　　　$\{\lambda x\lambda w.$ do$(x,$ an-act-of-making-a-simple-mistake$)$ in $w,$
　　　　　　$\lambda x\lambda w.$ do$(x,$ an-act-of-playing-defense-in-the-infield$)$ in $w\}$

nani

$$\left\{\begin{array}{l}\text{an act of making a simple mistake}\\ \text{an act of playing defense in the field}\\ ...\end{array}\right\}$$

yatteru
$\{\lambda a\lambda x\lambda w.\text{doing}(x,a)$ in $w\}$

(22)　$[[$ya-tte(iru)$]]([[$nani$]])([[pro_{hearer}]]) = \{\lambda w'.$ the addressee is making a simple mistake in w', $\lambda w'.$ the addressee is playing defense in the infield in w', ...$\}$
　　　$=\{p : \exists a.\ a$ is act $\wedge\ p =[\lambda w'.$ the addressee is doing a in $w']\}$

The E-force$_{Neg.attitude}$ then takes the set of propositions (of type $\langle\langle s^a, t^a\rangle, t^a\rangle$), yielding a uniqueness presupposition and a CI:

(23)　$[[$E-force$_{Neg.attitude}]]$ $([[$nani ya-tte(iru)$]]) =$
　　　Presupposition: The unique proposition "the addressee is making a simple mistake in w_0" is salient.
　　　CI: "The addressee is making a simple mistake in w_0" is unexpected for $sp \wedge sp$ has a negative attitude toward the proposition that "the addressee is making a simple mistake in w_0".

I would like to say a few words about the possibility of other analytical methods. For simplicity, this study does not utilize the ideas of two-tier alternative semantics (Rooth 1985). However, a similar analysis can be performed using this type of semantics. In two-tier alternative semantics, lexical items have an ordinary semantic value and a focus semantic value, whereas wh-words are considered to have only focus semantic values (e.g., Beck 2006, Kotek 2015, Uegaki 2018). However, the two-tier alternative semantics approach also assumes that the expression that contains a wh-word ultimately has an ordinary semantic value (at-issue meaning) in the semantic interpretation of interrogatives. For example, Kotek (2015) proposed a special question operator, ALTSHIFT, that takes a set of propositions in the focus domain and shifts them into the ordinary domain.

3.1. COMPARISON WITH A PURE INTERROGATIVE SENTENCE. Let us now compare the analysis of the negative wh-expressive with that of a pure wh-question. As observed earlier, the following sentence can be ambiguous between the expressive reading and a pure question reading, and if there is an ascending intonation, it has a pure question reading:

(24)　(Pure wh-question)

　　　(Anata) nani ya-tten-no?
　　　you　　 what do-PROG-Q
　　　'What are you doing?'

In my analysis, up to the following stage, the semantic structure is the same as that of the negative wh-expressive:

(25) $[[\text{ya-tte(iru)}]]([[\text{nani}]])([[pro_{hearer}]]) = \{\lambda w'.$ the addressee is making a simple mistake in w', $\lambda w'.$ the addressee is playing defense in the infield in w', ...$\}$
$= \{p : \exists a.\ a$ is act $\land\ p = [\lambda w'.$ the addressee is doing a in $w']\}$

The difference between the negative wh-expressive and the ordinary question arises at a higher level. Following Dayal (1996), I assume that, in the case of an ordinary question, the set of propositions is combined with the Ans operator:

(26) The Ans operator as Max_{inf} (Dayal 1996, Fox 2012, Kotek 2018):
$[[\text{Ans}]](P) = Max_{inf}(P)$
$Max_{inf}(P)(w) = \iota p \in P$, s.t. $w \in p$ and $\forall q \in P\ (w \in q \rightarrow p \subseteq q)$ (Kotek 2018: 38)

(27)
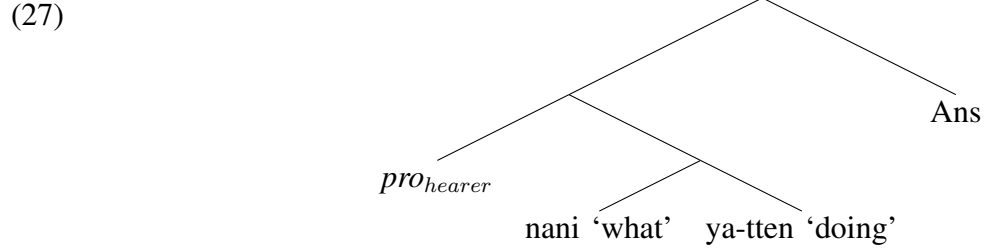
Dayal (1996) claims that a question has a unique maximally informative true answer. The Ans operator takes as input a set and is defined iff there is exactly one true proposition in the set that entails all other true propositions in the set. For the semantic analysis of ordinary interrogatives, including Dayal's analysis, the truth condition of the interrogative is considered to be the issue, and the illocutionary force is not assumed in the logical structure.

The question is how to derive an illocutionary force for the question. One possibility is to assume that there is a dedicated illocutionary force for ordinary interrogative sentences (e.g., Krifka (2001)).

(28)
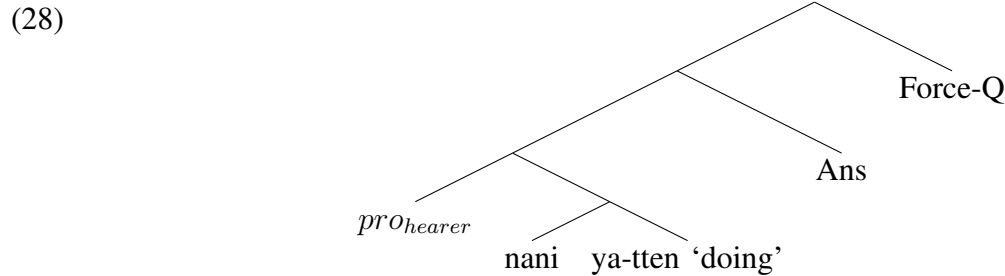
One potential issue is the relationship between truth-conditional meaning and illocutionary force. Ordinary questions have both a truth-conditional meaning (a set of answers) and an illocutionary force. It seems possible to apply Potts's (2005) CI function application, which is resource-sensitive. Under CI application, Force-Q takes the unique proposition (a unique maximally informative true answer) and returns an illocutionary force of question, but also makes the proposition pass up to the above level. This contrasts with the negative wh-expressive, which only has an expressive illocutionary force and no truth-conditional meaning is involved.

4. Analysis of the indirect type. Let us now consider an example of the indirect type. In the direct type, the proposition corresponding to the answer to the question (if it is a question) is salient in the context, to which the speaker has a negative attitude:

(29)   (Context: The speaker saw an apprentice making sushi that looked like a rice ball.)

     Oioi   nani-ya-tte-nda!
     hey.hey what-do-PROG-PRED

     'Hey hey, what are you doing!'

However, in the indirect type, which co-occurs with *omo-tteiru* 'thinking', the proposition that is the object of the negative attitude does not correspond to the answer to the question (if considered a question):

(30)   Indirect type (Context: A conversation in a sushi restaurant. Taro, the apprentice, is not washing his hands carefully. The owner, the speaker, noticed it and spoke.)

     Oioi   nani tsuku-tteiru-{#nda / to   omo-tteiru-nda}.
     hey.hey what make-PROG-PRED / that think-PROG-PRED

     'lit. Hey, {#what are you making!/ what do you think you are making!}'

    Here, the speaker does not complain about the apprentice making sushi, but expresses frustration that the apprentice has not washed his hands clean despite making sushi. Note that, in this context, if there is no *omo-tteiru* 'thinking', the sentence becomes odd as a way of expressing a negative attitude. A similar phenomenon can be found regarding other wh-expressions:

(31)   (Context: The manager saw a co-worker talking to the president in a casual manner. The manager's utterance)

     Kimi   dare-ni mukatte hanashi-teiru-{#nda / to   omo-tte-nda}!
     hey.you who-to toward talk-PROG-PRED   / that think-PROG-PRED

     'lit. You, {#who are you talking to!/who do you think you are talking to!}'

(32)   (Context: The speaker and hearer gather at a mountain trailhead to climb Mt. Fuji. The following utterance was made when the speaker saw the listener arrive at the meeting place wearing beach sandals.)

     Oioi   doko-(ni) iku-{#nda / to   omo-tte-nda}!
     hey.hey where-to go-PRED   / that think-PROG-PRED

     'lit. Hey, {# where are you going!/where do you think you are going!}'

The question is how we can analyze the indirect type of negative wh-expressive. I consider that the proposed analysis can naturally capture the meaning of the indirect type of wh-expressive as well if we consider that *omo-tteiru* is connected to the utterance situation and is understood as 'thinking while performing a contextually given act':

(33) $[[\text{omo-tteiru}]] = \lambda p_{\langle s^a, t^a \rangle} \lambda x \lambda w. \text{thinking}(x, p(w)) \ \wedge \ \text{performing}(x, \alpha) \text{ in } w$
     (where α is a contextually given act)

    In the case of example (30), the 'contextually given act' corresponds to the addressee's act of not washing his hands carefully. The following shows the denotation of *nani-o tsukutteiru to omo-tteiru* 'lit. what do you think you are making':

(34)   [[omo-tteiru]]([[nani-o tsuku-tteiru]])([[pro_{hearer}]])=

$\{\lambda w.$ thinking (the addressee, the addressee makes sushi in w)) $\wedge$ the addressee is not washing his hands carefully in w, $\lambda w.$ thinking (the addressee, the addressee makes udon in w)) $\wedge$ the addressee is not washing his hands carefully in w,... $\}$

$= \{p : \exists x.x$ is not human $\wedge$ $p = [\lambda w.$ thinking (the addressee, the addressee makes x in w) $\wedge$ the addressee is not washing his hands carefully in $w]$ $\}$

When the E-force$_{Neg.attitude}$ combines with the set of the propositions, the presupposition and the expressive CI meaning are triggered as follows:

(35)   [[E-force$_{Neg.attitude}$]] ([[omo-tteiru]]([[nani-o tsuku-tteiru]])([[pro_{hearer}]]))=
Presupposition: The unique proposition that "thinking (the addressee, the addressee makes sushi in w_0) $\wedge$ the addressee is not washing his hand carefully in w_0'' is salient.
CI: "thinking(the addressee, the addressee makes sushi in w_0) $\wedge$ the addressee is not washing his hands carefully in w_0'' is unexpected for the speaker $\wedge$ sp has a negative attitude toward the proposition that "thinking(the addressee, the addressee makes sushi in w_0) $\wedge$ the addressee is not washing his hands carefully in w_0''.

We have so far considered the indirect type of negative wh-expressive in Japanese, but a similar phenomenon can be found in English as well:

(36)   (Context: A conversation in a sushi restaurant. Taro, the apprentice, is not washing his hands carefully. The owner, the speaker, noticed it and said.)
Hey, what do you think you are doing!
Intended negative attitude: The speaker has a negative attitude toward Taro not washing his hands carefully, despite the fact that he is making sushi.

(37)   (Context: Taro is a young employee. The manager saw Taro (the addressee) talking to the president in a casual manner. The manager's utterance)
Hey, who do you think you are talking to!
Negative attitude: The speaker has a negative attitude toward Taro speaking casually despite the fact that he thinks he is talking to the president.

(38)   (Context: The speaker and hearer (=Hanako) gather at a mountain trailhead to climb Mt. Fuji. The following utterance was made when the speaker saw Hanako arrive at the meeting place wearing beach sandals.) Where do you think you are going!
Negative attitude: The speaker has a negative attitude toward Hanako wearing beach sandals despite the fact that she thinks that she is going to Mt. Fuji.

Note that in (38), it would be even more natural to add the adverbial phrase "with sandals", i.e., "Where do you think you are going in those sandals!" If the utterance is just, "Where do you think you are going!", then that would be more natural in a context where the addressee is not allowed to or not able to climb Mt. Fuji. Overall, "Where do you think you are going!" is a very natural and common expression to convey to someone that they are trying to go somewhere that they are not allowed to or not able to go.[3] The Japanese counterpart of "Where do you think you are going!" (= 32) does not seem necessarily to have this kind of modal flavor (although in some cases it does). This may be a matter of conventionality in use.

5. The adjunct use of the negative wh-expressive *nani*.

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[3] I thank Thomas Grano for the valuable comments on this point.

5.1. THE NEGATIVE WH-EXPRESSIVE AS A DISCOURSE PARTICLE. Although the wh-expression *nani* 'what' usually behaves as an argument of a predicate, it can appear in an adjunct position, and *nani* itself can serve as an expressive. *Nani* in the following examples does not serve as an argument of the verbs (*ku-u* 'eat', *ne-ru* 'sleep'):

(39)   a.   Nani ne-ten-no.
             what sleep-PROG-Q
             'I have a negative attitude toward your behavior that you sleep.'
       b.   Nani ore-no keeki ku-tte-nda.
             what I-GEN cake eat-PROG-PRED
             'I have a negative attitude toward your behavior that you are eating my cake.'

I argue that in these cases *nani* itself functions as a negative-force-indicating device. I assume that the expressive *nani* takes a proposition (rather than a set of propositions) and conventionally implies that *p* is unexpected and the speaker has a negative attitude toward *p*:

(40) $[[\text{nani}_{Neg.attitude}]] : \langle\langle s^a, t^a\rangle, t^s\rangle =$
       $\lambda p_{\langle s^a, t^a\rangle}: \text{salient}(p(w_0)).\text{unexpected}(p(w_0)) \text{ for } sp \wedge \text{Neg-attitude}(sp, p(w_0))$

I consider that *nani* in these examples has been grammaticalized as a special emotive expression that signals a speaker's negative attitude.

5.2. SIMILARITIES AND DIFFERENCES WITH THE ACCUSATIVE WH-ADJUNCT *nani-o*. Let us now compare the adjunctive negative wh-expressive *nani* with the accusative wh-adjunct *nani-o* (Kurafuji 1996, Ochi 1999, Ochi & Hsin 1999, Amano 2008, Nakao & Obata 2009, Takami 2010, Yang & Mizuno 2019):

(41)   a.   Kare-wa nani-o   sawai-dei-ru-no?
             he-TOP   what-ACC make.noise-PROG-NON.PST-Q
             'Why is he making a noise?'
       b.   Nani-o   monku-o   i-ttei-ru-no!
             what-ACC complaint-ACC say-PROG-NON.PST-Q
             'Why are you complaining?'

Syntactically, *nani-o* in the above examples is not an object of the verb and it behaves as an adjunct. Semantically, sentences with the accusative wh-adjunct convey a speaker's negative feeling toward the subject's unexpected behavior (see also, e.g., Ochi (1999), Nakao & Obata (2009)). In this respect, the accusative wh-adjunct *nani-o* is similar to the adjunct negative *nani*. However, unlike the negative wh-expressive *nani*, the accusative wh-adjunct *nani-o* has the semantic meaning of "why" (Kurafuji 1996):

(42)   John-wa {naze / nani-o}   awate-tei-ru-no?
       John-TOP why   / what-ACC clamor-PROG-NON.PST-Q
       'Why is John clamoring?'

Furthermore, unlike the adjunct negative wh-expressive, accusative wh-adjunct *nani-o* involves intentionality (Amano 2008; Yang & Mizuno 2019). Amano (2008) claims an intransitive sentence with passive intentionality cannot co-occur with the accusative wh-adjunct *nani-o*. For example, the verb *ne-ru* 'sleep' has weak intentionality and does not naturally co-occur

with the passive wh-adjunct.

(43) ?? Nani-o   ne-ten-no.
      what-ACC sleep-PROG-Q
      'Why are you sleeping?' I have a negative attitude toward your behavior that you
      sleep.'

This clearly contrasts with the adjunct wh-expressive *nani* in (39a). (39a) is natural in situations where the listener is unintentionally asleep and the speaker has a negative attitude toward this.[4] I consider the requirement of intentionality also to be found in transitive sentences. For example, the following sentence is odd, because when someone eats someone else's (the speaker's) cake, they usually do not appear to have strong intentions (or at least, they make it appear that they do not have intentions):

(44) ??/? Nani-o   ore-no keeki ku-tte-nda.
      what-ACC I-GEN cake eat-PROG-PRED
      'Why are you eating my cake.'

However, if *nani-o* in (44) is replaced with adjunct *nani*, as in (39b), the sentence becomes natural. In this case, the speaker simply expresses a negative attitude toward the listener's eating the speaker's cake and does not question the listener's intentions behind it.

6. Conclusion: Varieties of wh-exclamatives. In this paper, I investigated the interpretation of negative wh-expressives in Japanese. I argued that unlike typical wh-exclamatives, negative wh-expressive sentences are not degree constructions, and their compositional system is similar to that of an interrogative sentence except for the speech act operator. More specifically, I argued that a negative wh-expressive occurs with the speech act operator E-force$_{Neg.attitude}$, which takes a set of propositions Q, and (i) presupposes that there is a unique proposition p, which is in Q and is salient, and (ii) conventionally implies that p is unexpected and that the speaker has a negative attitude toward it.

It has been considered in the literature that wh-exclamatives are degree constructions, and various researchers have investigated how their scalar meanings are derived in a compositional fashion, including degree- and question-based approaches (e.g., Zanuttini & Portner 2003; Rett 2008; Castroviejo 2008). For example, Rett (2011) posits an illocutionary force operator for exclamatives as in (45) and analyzes that the wh-exclamative in (46) as in (47):

(45) E-FORCE (p), uttered by the s_C, is appropriate in a context C if p is salient and true in the w_C. When appropriate, E-FORCE(p) counts as an expression when the s_C had not expected that p.   (Rett 2011:430)

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[4] Amano (2008) observes the contrast between (i) and (ii):

(i)   ? Nani-o   oibore-teru-no!
      What-ACC get.old-PROG-Q
      'Why are you getting old!' (Amano 2008:12)

(ii) Nani oibore-teru-no!
      What get.old-PROG-Q
      'Lit. What, you are getting old!' (Amano 2008:13)

(i) is odd, but if we delete the accusative marker *o*, the sentence becomes more natural.

(46) How tall John is!

(47) a. λd tall(John,d)
      b. tall(john, d')
      c. E-FORCE(p) counts as an expression that $\exists d'$ such that s_C had not expected that $D(d')$ (where $D(d')$= tall(john, d')) (Rett 2011:431)

The E-Force operator derives counter-expected meaning and the semantics in (47) captures the meaning that the speaker is surprised toward the fact that John is tall to degree d'.

    In contrast, Zanuttini & Portner (2003) analyze wh-exclamatives based on the idea of domain widening. In Zanuttini and Portner's (2003) analysis of exclamative, the meaning of exclamative is based on the meaning of interrogative sentences (Hamblin 1973, Karttunen 1977).

(48) a. What things does he eat?
      b. What things he eats!

    In their analysis, the meanings of the question and wh-exclamative both assume a set of propositions. For example, we can assume the following set for (48b):

(49) {p: p is true in w and $\exists a[p$ = 'he eats a'] } = {'he eats poblanos', 'he eats serranos', 'he eats jalapeños'} (Zanuttini & Portner 2003:52)

The difference between an ordinary interrogative and wh-exclamative is that the latter draws out widening as a force of the sentence:

(50) WIDENING: For any clause S containing $R_{widening}$, widen the initial domain of quantification for $R_{widening}$, $D1$, to a new domain, $D2$, such that
      (i) $[[S]]_{w,D2,\prec} - [[S]]_{w,D1,\prec} \neq 0$ (ii) $\forall x \forall y[(x \in D1$ & $y \in (D2 - D1)) \to x \prec y]$.
      (Zanuttini & Portner 2003:52)

The $D2 - D1$ set contains the extremes. In the above examples $D2$ would differ from $D1$ in containing habaneros, and the sentence would say that he eats even this very spicy pepper'' (Zanuttini & Portner 2003:52).

    Thus the degree-based approach and the question-based approach assume a different semantic mechanism for wh-exclamatives, but what they all have in common is that they assume that scalarity plays an important role in the semantic analysis of wh-exclamatives.[5]

    In contrast, in the negative wh-exclamative treated in this study, scalarity is not involved. The phenomenon of the Japanese wh-expressive suggests that there is also a non-scalar type of wh-exclamation that is unrelated to scalarity. This paper suggests that there are multiple ways of expressing the speaker's emotional state (attitude) using a wh-morpheme and proposes a new kind of wh-exclamative, a "negative wh-expressive", which conveys a speaker's negative attitude toward the utterance situation in a reactive fashion.

    One might think that the negative wh-expressive is not an exclamative because it is non-scalar. However, from the perspective of speech acts, both the wh-exclamative (scalar) and the negative wh-expressive (non-scalar) are concerned with the speaker's emotional attitude and belong to expressives in the general class of speech act (Searle 1979). Thus, it seems reasonable to assume that negative wh-expressives are a type of exclamative. In this paper, I

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[5] There are various approaches other than Rett's 2011 degree-based approach and Zanuttini & Porter's 2003 question-based approach (see Castroviejo 2021 for a detailed overview of various approaches.

have mainly focused on Japanese data, but as I briefly pointed out, English wh-sentences can also convey a negative attitude. This seems to suggest that the phenomenon of negative wh-expressives is cross-linguistically pervasive. More empirical and theoretical investigations are necessary to understand the meaning and use of negative wh-expressives.

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