

On semantics of two types of wh-exclamatives in Japanese: Interaction with predicates of personal taste*

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Abstract

This paper investigates semantic differences between *nante* and *doredake*, which are both observed in exclamative clauses in Japanese. It is suggested in the literature that some wh-phrases appear only (or typically in any rate) in exclamative clauses (cf. Wiltschko[21], Zanuttini & Portner[23], Catroviejo[4], Ono[14], Yamato[22], Repp[15], Badan & Chen[2]). Zanuttini & Portner[23] call this type of wh-phrases as “E-only wh-phrases.” While morpho-syntactic properties of E-only/non-E-only wh-phrases are studied in many languages, it is not extensively discussed whether there are semantic differences between E-only wh-phrases and non-E-only ones (with the exception of Repp[15] for *welch* and *welchE* in German). This paper claims that *nante*, which is an E-only wh-phrase in Japanese, is distinguished from the non-E-only wh-phrase *doredake* in that *nante* requires the judge parameter (*a lá* Lasersohn[13]) to be fixed at the speaker. We suggest that this difference may be a new criterion for the taxonomy of exclamatives other than Rett’s[16] scalar vs. non-scalar expectation.

1 Background

1.1 E-only wh-phrases vs. non-E-only wh-phrases

- It is suggested in the literature that some wh-phrases appear only (or typically in any rate) in exclamative clauses (cf. Castroviejo[4]: 167 for Catalan, Zanuttini & Portner[23]: 68ff for English, Italian and Paduan, Wiltschko[21]: 114 and Repp[15] for German, Ono[14]: 9ff and Yamato[22]: 63 for Japanese, and Badan & Chen[2]: 392 for Mandarin). Zanuttini & Portner[23] call this type of wh-phrases as “E-only wh-phrases.”¹
- For example, German uninflected *welch*, which can occur in exclamatives as in (1a), is incompatible with information-seeking questions as in (1b) (cf. Wiltschko[21] and Repp[15]).

- (1) a. *Welch einen tollen Mann die geheiratet hat!*
 which a fantastic man she marry has
 ‘What a fantastic man she married!’
- b. **Welch einen tollen Mann hat die geheiratet?*
 which a fantastic man has she married
 intended: ‘Which fantastic man did she marry?’

- The Japanese wh-phrase *nante* is also an E-only wh-phrase (cf. Ono[14] and Yamato[22]). As shown in (2), *nante* can be used only for exclamatives.²

- (2) a. *Taro-wa nante se-ga takai nodaroo!*
 Taro-TOP WH height-NOM tall MOD
 ‘How tall Taro is!’

*This work is supported by JSPS KAKENHI Grant Number JP21K13000 to the second author.

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¹Note that some E-only wh-phrases may appear in non-exclamative contexts. Repp[15] and Badan & Chen[2] respectively show that German uninflected *welch* ‘which’ and Chinese *zènme zhème* ‘how this.ME’ can be observed not only in exclamatives but also in rhetorical questions, while these wh-phrases are incompatible with information-seeking questions.

²Throughout the paper: (i) we will not discuss the semantic contribution of sentence-final *nodaroo* ‘PRT.MOD’ (cf. Ito & Mori[11] for some empirical facts on *nodaroo* in exclamatives), but the optionality of this expression in exclamatives will be discussed in §3.4; (ii) we do not deal with *nante* that appears in sentence-final position (See Sawada & Sawada[18] and Hirayama 2021[8] for the property of sentence-final *nante*).

- b. *Taro-wa nante se-ga takai no?
 Taro-TOP WH height-NOM tall PRT
 intended: ‘How tall is Taro?’

- Another Japanese wh-particle *doredake*, on the other hand, is a non-E-only wh-phrase. It can be used for exclamatives as well as for questions.

- (3) a. Taro-wa doredake se-ga takai nodaroo!
 Taro-TOP WH height-NOM tall MOD
 ‘How tall Taro is!’
 b. Taro-wa doredake se-ga takai no?
 Taro-TOP WH height-NOM tall PRT
 ‘How tall is Taro?’

- In this paper, we first focus on the exclamative use of *nante* and *doredake* and discuss the difference between them.

1.2 Key observation: *nante* vs. *doredake*

- As we have seen above, *nante* as well as *doredake* can be used for exclamatives.
- However, an exclamative with *nante* becomes infelicitous as in (4a) if the predicate is a so-called *predicate of personal taste* (PPT: in (4), *oishii* ‘tasty’) and the judge is shifted to a non-speaker (in (4), Taro).³ This infelicity is not observed in the exclamative with *doredake* as in (4b).⁴

- (4) Context: Taro is having four more helpings of stew, which is unbelievable from the speaker’s point of view.
 a. *Ano shichuu-wa Taro-nitotte **nante** oishii nodaroo!
 that stew-TOP Taro-to WH tasty MOD
 intended: ‘How tasty that stew is to Taro!’
 b. Ano shichuu-wa Taro-nitotte **doredake** oishii nodaroo!
 that stew-TOP Taro-to WH tasty MOD
 ‘How tasty that stew is to Taro!’

- If the context allows the judge to be the speaker, *nante* as well as *doredake* are felicitous as in (5).

- (5) a. Kono shichuu-wa **nante** oishii nodaroo!
 this stew-TOP WH tasty MOD
 ‘How tasty this stew is!’
 b. Kono shichuu-wa **doredake** oishii nodaroo!
 this stew-TOP WH tasty MOD
 ‘How tasty this stew is!’

- To the best of our knowledge, this observation has not been reported in the literature. The goal of this paper is to propose semantics for *nante* and *doredake* which can explain the contrast observed in (4).
- Furthermore, we show that our analysis correctly predicts various behaviors of wh-phrases in Japanese exclamatives. The conclusion of this paper suggests that the difference between *nante* and *doredake* sheds new light on the taxonomy of exclamatives cross-linguistically.

³Lasersohn[13] notes that it is not conclusive which lexical items can be characterized as PPTs. Throughout this paper, we only address the PPT *oishii* ‘tasty,’ one of the most prototypical PPTs in previous studies.

⁴It is worth noting that in both English and Japanese, PPTs can be accompanied by an overt ‘non-first person’ experiencer:

- (i) a. This stew is tasty to **him**.
 b. Kono shichuu-wa **Taro-nitotte** oishii.
 this stew-rop Taro-to tasty
 ‘This stew is tasty to Taro.’

The fact indicates that the oddness in (4a) is due to some constraint on *nante*-exclamatives rather than to the occurrence of PPT with non-first person experiencer.

2 Analysis

2.1 E-only exclamatives require the speaker's judge

- The following assumptions are made in the analysis:
 - Sentences with PPTs are relativized to the world w and the judge j (Lasersohn[13], cf. Anand & Korotkova[1]).
 - A PPT like *oishii* ‘tasty’ is an open-scale gradable adjective representing a function that takes an entity and returns a certain degree on the scale associated with the adjective (Hirvonen[10]).⁵
- Putting the assumptions together, the denotation of *oishii* ‘tasty’ and x *nitotte oishii* ‘tasty to x ’ with and without an overt experiencer are given below.^{6 7}

- (6) a. $\llbracket oishii \rrbracket^{w,c,j} = \lambda x.\lambda d.\mathbf{tasty}_j(x, d)$,
 where ‘ $\mathbf{tasty}_j(x, d)$ ’ stands for ‘ x is d -tasty to the judge j .’
- b. $\llbracket sono-sichuu-wa oishii \rrbracket^{w,c,j} = \lambda d.\mathbf{tasty}_j(\mathbf{s}, d)$, where \mathbf{s} stands for ‘that stew.’
- (7) a. $\llbracket y-nitotte oishii \rrbracket^{w,c,j} = \lambda x.\lambda d.\mathbf{tasty}_j(x, d) \wedge [j = y]$
- b. $\llbracket sono-sichuu-wa Taro-nitotte oishii \rrbracket^{w,c,j}$
 $= \lambda d.\mathbf{tasty}_j(\mathbf{s}, d) \wedge [j = \mathbf{t}]$, where \mathbf{t} stands for Taro.

- We propose (8) for the semantics of *nante*:

- (8) $\llbracket nante \rrbracket^{w,c,j} = \lambda D_{\langle d,t \rangle}.\exists d.D(d) \wedge \mathbf{SURPRISING}_j(D(d)) \wedge \partial(j = \mathbf{SPEAKER}_c)$,
 where $\mathbf{SURPRISING}_j$ is a ‘surprising’ operator that expresses j ’s surprising attitude towards a degree of a proposition, and $\partial(\varphi)$ stands for φ is the presupposition.⁸

Informally, *nante* is true iff there is a degree d such that the proposition $D(d)$ denotes a surprising degree for the speaker and presupposes that the judge is fixed at the speaker in c .

- In the felicitous example (5a), *nante* takes (6b) and returns the meaning in (9). (9) states that there is a degree d such that the stew is d -tasty to the speaker and d is surprising to her (e.g., note-worthy, remarkable, or unexpected).

- (9) *Kono sichuu-wa nante oishii nodaroo!* ‘How tasty this stew is!’ (=5a)
- $\llbracket nante(\llbracket (6b) \rrbracket) \rrbracket^{w,c,j}$
 $= [\lambda D.\exists d.D(d) \wedge \mathbf{SURPRISING}_j(D(d))](\lambda d.\mathbf{tasty}_j(\mathbf{s}, d) \wedge \partial(j = \mathbf{SPEAKER}_c))$
 $= \exists d.\mathbf{tasty}_j(\mathbf{s}, d) \wedge \mathbf{SURPRISING}_j(\mathbf{tasty}_j(\mathbf{s}, d)) \wedge \partial(j = \mathbf{SPEAKER}_c)$

⁵See Hirvonen[10] for some motivation for considering PPTs as open-scale adjectives.

⁶The meaning assumed in (7a) is a simplified version of that proposed by Anand & Korotkova[1] among others who suggest that PPTs have certain evidential presuppositions; PPTs require that the judge j has a certain type of direct experience. This requirement is omitted here for the sake of simplicity, but refer to e.g. Hirayama[9] for the semantics of Japanese PPTs with evidential presupposition and the compositional process to derive *nitotte oishii*.

⁷To derive a declarative interpretation for (6b) and (7b) (e.g., *Sono sichuu-wa oishii yo.* ‘That stew is tasty.’), we can make use of a null degree morpheme **pos** (for positive form) (von Stechow[20] among many others). **pos** encodes the relation $\mathbf{standard}_c$, which holds of a degree d just in case it meets a standard of comparison for the adjective G with respect to a comparison class determined by c :

- (i) a. $\llbracket \mathbf{pos} \rrbracket = \lambda G.\lambda x.\exists d.\mathbf{standard}_c(d)(G) \wedge G(x, d)$
 b. $\llbracket \mathbf{pos} oishii \rrbracket = \lambda x.\exists d.\mathbf{standard}_c(d)(\llbracket oishii \rrbracket) \wedge \llbracket oishii \rrbracket(x, d)$
 c. $\llbracket sono sichuu-wa \mathbf{pos}-oishii \rrbracket = \exists d.\mathbf{standard}_c(d)(\llbracket oishii \rrbracket) \wedge \llbracket oishii \rrbracket(\mathbf{s}, d)$

⁸The $\mathbf{SURPRISING}$ operator can be defined based on Rett’s[16] E-FORCE or Grosz’s[6] EX-operator. We assume that $\mathbf{SURPRISING}_j(\varphi)$ at least encodes the following presuppositions.

- (i) $\mathbf{SURPRISING}_j(\varphi)$ is defined in a context c iff:
- j has direct evidence for φ ;
 - j believes φ ;
 - j finds a degree of φ note-worthy or remarkable.

When defined, $\mathbf{SURPRISING}_j$ expresses j ’s attitude towards φ .

- In the infelicitous example (4a), *nante* takes (7b) and returns the meaning in (10).

$$\begin{aligned}
(10) \quad & *Ano shichuu-wa Taro-nitotte nante oishii nodaroo! \text{ ‘How tasty that stew is to Taro!’ (=4a)} \\
& \llbracket nante(\llbracket (7b) \rrbracket) \rrbracket^{w,c,j} \\
& = [\lambda D. \exists d. D(d) \wedge \text{SURPRISING}_j(D(d)) \wedge \partial(j = \text{SPEAKER}_c)]([\lambda d. \text{tasty}_j(\mathbf{s}, d) \wedge [j = \mathbf{t}]] \\
& = \exists d. \text{tasty}_j(\mathbf{s}, d) \wedge [j = \mathbf{t}] \wedge \text{SURPRISING}_j(\text{tasty}_j(\mathbf{s}, d)) \wedge \partial(j = \text{SPEAKER}_c)
\end{aligned}$$

(10) induces presupposition failure itself; it asserts that the judge is Taro (i.e., a non-speaker) while at the same time presupposes that the judge is the speaker.

2.2 Non-E-only exclamatives are judge-free

- As for *doredake*, we assume a standard semantics for a wh-phrase, which generates a set of propositions (like *how* in English).
- Following Zanuttini & Portner[23], we assume that the set of propositions undergoes **Widening** and the exclamative interpretation arises. Zanuttini & Portner define Widening as (11). Informally, the new domain must contain a widened proposition which counts as a surprising proposition.

$$\begin{aligned}
(11) \quad & \textbf{Widening:} \text{ For any clause } S \text{ containing } R_{\text{widening}}, \text{ widen the initial domain of quantification} \\
& \text{for } R_{\text{widening}}, D1, \text{ to a new domain, } D2, \text{ such that:} \\
& \text{(i) } \llbracket S \rrbracket^{w,D2,\prec} - \llbracket S \rrbracket^{w,D1,\prec} \neq \emptyset \text{ and;} \\
& \text{(ii) } \forall x \forall y [[x \in D1 \wedge y \in [D2 - D1]] \rightarrow x \prec y] \quad \text{(Zanuttini \& Portner[23])}
\end{aligned}$$

- (12) illustrates how Widening works. In (12), **this stew is d₄-tasty** is the proposition in the widened domain and counts as a surprising proposition.

$$\begin{aligned}
(12) \quad & \llbracket Kono shichuu-wa doredake oishii nodaroo \rrbracket^{w,D1,\prec} \\
& = \{\text{this stew is } d_1\text{-tasty, this stew is } d_2\text{-tasty, this stew is } d_3\text{-tasty}\} \\
& \quad \downarrow \textbf{Widening} \\
& \llbracket Kono shichuu-wa doredake oishii nodaroo \rrbracket^{w,D2,\prec} \\
& = \{\text{this stew is } d_1\text{-tasty, this stew is } d_2\text{-tasty, this stew is } d_3\text{-tasty, } \mathbf{\text{this stew is } d_4\text{-tasty}}\}
\end{aligned}$$

- (4b) is felicitous, because there is no requirement for the value of the judge parameter.
- Our proposal suggests that *nante* is itself an exclamative operator, while *doredake* relies on an independent illocutionary force operator (i.e., Zanuttini & Portner’s[23] Widening) to obtain the exclamative interpretation.

3 Empirical predictions

3.1 ‘To the speaker’ induces redundancy in *nante*-exclamatives

- In both English and Japanese, an overt first-person experiencer can accompany PPTs:

$$\begin{aligned}
(13) \quad & \text{a. This stew is tasty } \mathbf{\text{to me.}} \\
& \text{b. Kono shichuu-wa } \mathbf{\text{watashi-nitotte}} \text{ oishii.} \\
& \quad \text{this stew-TOP I-to } \quad \quad \quad \text{tasty} \\
& \quad \text{‘This stew is tasty to me.’}
\end{aligned}$$

- In our analysis, *nante*-exclamatives *presuppose* that the experiencer of a PPT is the speaker (i.e., the first person). The current analysis predicts that in *nante*-exclamatives, a PPT cannot be accompanied by an overt first-person experiencer, since it induces redundancy. This prediction is borne out:

$$\begin{aligned}
(14) \quad & \#Kono shichuu-wa \mathbf{\text{watashi-nitotte}} \text{ nante oishii nodaroo!} \\
& \text{this stew-TOP I-to } \quad \quad \quad \text{WH } \text{tasty MOD} \\
& \text{‘[lit.] How tasty this stew is to me!’}
\end{aligned}$$

The sentence (14) presupposes that the judge is the speaker and at the same time it asserts the meaning identical to that presupposition (by *watashi-nitotte* ‘to me’).^{9,10}

3.2 Using *nantedoredake* in questions

- In section 1, we have already seen that E-only WH-items are incompatible with information-seeking questions. As in (15a), *nante* cannot be used for a question asking a degree (i.e., a size of the car).

- (15) a. *Taro-wa nante ookina kuruma-o katta no?
 Taro-TOP WH big car-ACC bought PRT
 intended: ‘How big a car did John buy?’
 b. Taro-wa doredake ookina kuruma-o katta no?
 Taro-TOP WH big car-ACC bought PRT
 ‘How big a car did John buy?’

- Our analysis can give an account of this fact. Since a *nante*-clause denotes a surprising degree proposition, the speaker using *nante* must know how much the degree is (cf. fn 8). Following Caponigro & Sprouse’s[3] definition of ordinary (i.e., information-seeking) questions in (16), *nante*-clauses cannot be used as a question asking a value of degree.

- (16) *Definition of ordinary questions* (Caponigro & Sprouse[3]: (25))
 An ordinary question is an interrogative clause whose answer is not known to the speaker, but the speaker thinks the addressee may know it. An answer is required in order for the dialogue to be felicitous. Only the addressee can answer.

- *Doredake* is a pure WH, which has no requirement for an unexpected degree. As a result, *doredake* can be used for a question, (15b).

3.3 Embedding *doredake/nante*

- As pointed out by Grimshaw[5], Lahiri[12], Guerzoni[7] and Romero[17], factive emotive predicates like *be surprised* cannot embed polar questions as in (17a), while they can embed wh-questions as in (17b).

- (17) a. *John was surprised at whether Paul visited Mary.
 b. John was surprised at who visited Mary.

- The same contrast is observed also in Japanese as in (18). (Note that when a proposition is embedded under the Japanese Q-particle *ka*, the clause is interpreted as a polar question, while an embedded set of propositions is interpreted as a wh-question.)

- (18) a. *Watashi-wa [Taro-ga Hanako-o tazuneta ka] -ni odoraita.
 I-TOP Taro-NOM Hanako-ACC visited Q -DAT was.surprised
 ‘[lit.] I was surprised at whether Taro visited Hanako.’

⁹The redundancy observed here is what is called *sentence-internal redundancy* (cf. Stalnaker[19]). The common example is (i) below; (i) is quite infelicitous, because it involves redundant expressions within themselves.

(i) #Mary is expecting a girl, and she is pregnant and is happy.

¹⁰Unfortunately, our account for *doredake*-exclamatives fails to capture the fact that they, too, disallow an overt first-person experiencer when occurring with PPTs.

(i) #Kono shichuu-wa *watashi-nitotte* doredake oishii nodaroo!
 this stew-TOP I-to WH tasty MOD
 ‘[lit.] How tasty this stew is to me!’

Since our analysis does not restrict the experiencer to *doredake*-exclamatives, it leaves a possibility of the utterance (i) being felicitous. To investigate this issue, more empirical facts need to be gathered on whether non-E-only exclamatives including *doredake*-exclamatives generally tolerate overt first-person experiencers.

- b. Watashi-wa [dare-ga Taro-o tazuneta ka] -ni odoroitā.
 I-TOP who-NOM Taro-ACC visited Q -DAT was.surprised
 ‘I was surprised at who visited Taro.’

- Under the proposed analysis, a *nante*-exclamative denotes a proposition, while a *doredake*-exclamative denotes a set of propositions. Thus, it is predicted that a *nante*-exclamative cannot be embedded under *ka* with factive emotive predicates just like (18a), while a *doredake*-exclamative can be embedded just like (18b). This prediction is borne out as in (19).

- (19) a. *Watashi-wa [sono kuruma-ga **nante** takai ka] -ni odoroitā.
 I-TOP that car-NOM WH expensive Q -DAT was.surprised
 ‘I was surprised at how expensive that car was.’
 b. Watashi-wa [sono kuruma-ga **doredake** takai ka] -ni odoroitā.
 I-TOP that car-NOM WH expensive Q -DAT was.surprised
 ‘I was surprised at how expensive that car was.’

3.4 Exclamatives with/without *nodaroo*

- Another piece of prediction is that *nante-exclamatives* without *nodaroo* is acceptable, since in our proposal *nante* itself plays a role as an exclamative operator. As in (20), this prediction is borne out; the semantic composition proceeds without problem, (21).^{11 12}

- (20) Nante (utsukushii) keshiki(-na nodaroo)!
 WH (beautiful) scenery(-COP MOD)
 ‘What a (beautiful) scenery it is!’

- (21) $\llbracket (20) \rrbracket^{w,c,j} = \llbracket nante \rrbracket^{w,c,j} (\llbracket utsukushii keshiki \rrbracket^{w,c,j})$
 $= [\lambda D. \exists d. D(d) \wedge \text{SURPRISING}_j(D(d)) \wedge \partial(j = \text{SPEAKER}_c)](\lambda d. \text{beautiful}_j(\text{scenery}, d))$
 $= \exists d. \text{beautiful}_j(\text{scenery}, d) \wedge \text{SURPRISING}_j(\text{beautiful}_j(\text{scenery}, d)) \wedge \partial(j = \text{SPEAKER}_c)$

- Note that the felicity observed in (20) is problematic for syntactic approaches that assume an Agree/Checking-relation between *nante* and *nodaroo* (e.g., Ono[14]: 7, 26).

4 Theoretical implication

- Rett (2011) claims that exclamative sentences can be classified into two types based on whether the violation of scalar expectation is involved or that of non-scalar expectation is involved. She calls the former “exclamative” and the latter “sentence exclamation.”

Repp (2013), for instance, shows that the German *wh*-phrases *welch* (‘which’) and *welchE* (inflected ‘which’) reflect this scalar/non-scalar distinction.

- For Rett (2011), *nante*-exclamatives as well as *doredake*-exclamative would be classified into “exclamative,” in the sense that they both involve scalar expectation.
- As we have seen, *nante* and *doredake* are different from each other in terms of the (in)flexibility of the judge parameter, although they both are true “exclamative.”

The analysis thus offers a new taxonomy of *wh*-exclamatives cross-linguistically: exclamatives that involve scalar expectation are further classified into *judge-fixed* types and *judge-free* types.

¹¹Following Rett[16], we assume that there is a covert adjective (in (20), *utsukushii* ‘beautiful’) if the adjective is not pronounced.

¹²The tentative analysis here may indicate that *nodaroo* does not have any semantic contribution in *nante*-exclamatives, but this leaves an open issue to be examined in the future: the fact that *nodaroo* can be added to *nante*-exclamatives implies that the occurrence of *nodaroo* is *not* actually redundant, and there might be some contribution.

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