# Dake-wa: Exhaustifying Assertions \*

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## 1 Introduction

This paper shows that the use of the Japanese exhaustive particle dake 'only' in a Contrastive-marked sentence results in exhaustification over potential literal acts of assertion in the sense of [1], rather than exhaustification over propositions. Also, the data supports the idea that the exceptive meaning denoted by dakecontributes to an expressive level of meaning.

# 2 Contrastive-marking

As noted by [2], Japanese Contrastive-marking involves a morphological marker -wa and a prosodic peak in the intonation (indicated by capitals).

a. Among John and Mary, who came to the party?
b. JOHN-wa kita. John-Con came.
'John came. (Mary didn't come, or I don't know about Mary.)'

Following the structure meaning approach (c.f. [3,4]), I argued in [5] that the prosodic peak of Contrastive-marking creates a partition of the asserted proposition into B (background) and F (Focus). The morphological wa-marking then introduces the CoN operator that takes the structured meaning as its argument and yields a conventional implicature. The Contrastive-marked sentence presupposes that there exists a stronger alternative to the asserted proposition (2–b), and conventionally implicates that the speaker considers the possibility that the stronger alternative is false (2–c).

- (2) Let F be the focus-marked elements, B the background, R the restriction. The interpretation of CON(B)(F)
  - a. asserts: B(F)
  - b. presupposes:  $\exists F'[[F' \in R] \& [B(F') \Rightarrow B(F)]\& [B(F) \Rightarrow B(F')]]$
  - c. implicates:  $\diamond(\neg(B(F')))$

<sup>\*</sup> This work is supposed by the Research Fellowship of the Japan Society for the Promotion of Science for Young Scientists under Grant No. 02162. I am grateful to Chris Potts, Satoshi Tomioka, and the audience at LENS2006 for helpful comments.

The interpretation of (1-b) is depicted in (3).

- (3) a.  $B = \lambda x$ . x came. F=John F'= John and Mary
  - b. assertion: John came.
  - c. implicates: the speaker considers the possibility that 'John and Mary came' is false.
  - d. assertion+implicature: the speaker considers the possibility that 'Mary came' is false.

This treatment of Contrastive-marking predicts that if a Contrastive-marked proposition, i.e., B(F), is the strongest among its alternatives, the sentence causes a presupposition failure. This prediction is borne out by the following example. In (4), the asserted proposition, 'everyone came.' is the strongest among its alternatives. Namely, it entails all of its scalar alternatives, 'someone came.' 'most people came.' etc., and none of the alternatives entail it. As a consequence, Contrastive-marking is not compatible with the asserted proposition.

(4) #ZEN'IN-wa kita. Everyone-Cont came (no implicatures)

### 3 Puzzle

An interesting puzzle arises when a Contrastive-marked sentence contains the exhaustive particle dake as in (5).<sup>1</sup>

(5) JOHN-dake-wa kita. John-dake-Con came.

Let us try to calculate the meaning of (5) with our current tools. If we take our F to be 'John' and F' to be 'John and Mary', we obtain the implicature (6-c), which is incongruent with the native speakers' intuition.

- (6) a.  $B = \lambda x$ . Only x came. F=John F'=John and Mary
  - b. asserts:'Only John came.'
  - c. implicature: the speaker considers the possibility that it is not the case that only John and Mary came.
  - d. Unavailable reading  $\rightarrow$  wrong prediction

Second, let us consider the case where we take our F to be 'only John'. (5) is predicted to cause a presupposition failure.

(7) a.  $B = \lambda x. x$  came. F=only John b. No implicature possible (presupposition failure) $\rightarrow$ wrong prediction

 $<sup>^1</sup>$  Satoshi Tomioka (p.c. to [6]) also notes that the contribution of dake in (5) is not clear.

This is so for the following reason. 'Only John came.' entails 'no one else came.' as illustrated in (8).

 (8) #JOHN-dake-ga kita. Mary-mo kita kamoshirenai. John-dake-Nom came. Mary-Add came might 'Only John came. Mary might have come, too.'

Hence, the speaker has already given the strongest answer; there is no scalar alternative B(F') that asymmetrically entails 'only John came' with respect to the question 'Who came?'. Therefore, (5) should fail to satisfy the presupposition requirement of Contrastive-marking (2-b).

Nonetheless, (5) is grammatical. The informal approximation of its interpretation I pursue in this paper is as follows:

(9) I make an assertion only about John with respect to the question 'Who came?' and I assert that John came.

This intuition is attested by the following examples. When dake is absent, the implicature of wa can be overtly expressed (10–a) or strengthened (10–b).

(10) Did John and Mary come?

a.	JOHN-wa kita.	Mary-mo	kita	kamoshirenai.
	John-Con came.	. Mary-Add	l came	might
	'At least John c	ame. Mary	might	have come, too.'
b.	JOHN-wa kite,	Mary-wa	ko-na	ikat-ta.

John-Con came. Mary-Con come-Neg-Past 'At least John came, and Mary didn't come.'

On the other hand, when dake is present, the continuation is perceived as incongruent (11).<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> This contrast between *dake-wa* and *dake* is first noted in [6]:

(i)	a.	#Taro-wa EEGO-dake-wa hanas-e-ru ga FURANSUGO-wa
		Taro-Top English-dake-Con speak-can-Pres but French-Con
		hanas-e-nai
		speak-can-Neg
		'English is the only langauge Taro can speak, but he cannot speak French.'
	b.	Taro-wa EEGO-wa hanas-e-ru ga FURANSUGO-wa
		Taro-Top English-Con speak-can-Pres but French-Con
		hanas-e-nai
		speak-can-Neg
		'Taro can speak English, but he cannot speak French.' [6, p.158]

(11) Did John and Mary come?

a. #JOHN-dake-wa kita. Mary-mo kita kamoshirenai.
John-dake-Con came. Mary-Add came might
'At least John came. Mary might have come, too.'
b. #JOHN-dake-wa kite, Mary-wa ko-nakat-ta.
John-dake-Con came. Mary-Con come-Neg-Past
'At least John came, and Mary didn't come.'

I argue that this incongruence arises because the speaker by using dake-wa indicates 'John came' is the only assertion she can make with respect to the question under discussion 'Who came?', but then she continues to mention the alternative individual 'Mary'. In order to implement this intuition, I follow Yoshimura's [7] analysis which treats dake as an expressive item that generates a conventional implicature. I further propose that when dake is used in a Contrastive-marked sentence, dake exhaustifies over assertion potential literal acts in the sense of [1].

### 4 Levels of Meaning Contributed by *dake*

[8] observes that "*dake* primarily asserts the affirmative proposition while secondarily asserting the negative one."

For example, (12–b) would be infelicitous if the exceptive meaning is embedded under a conditional as in (12-b-ii). (12–b) is felicitous only under the interpretation where the affirmative proposition 'you can speak English' is embedded.

- (12) a. In order to make an around-world trip,
  - b. EIGO-dake hanas-er-eba ii

English-dake speak-able-if good

- (i) 'It's enough if you can speak English.'
- (ii) #'It's enough if you cannot speak any other languages.'(Yoshimura 2005)

In contrast, if the context prefers that the negative proposition to be an argument, the use of *dake* turns out to be infelicitous as in (13).<sup>3</sup>

 (13) #Nihongo-dake dekiru node, shuushoku deki-nakat-ta. Japanese-dake capable because, getting.employed capable-Neg-Past
 a. #'I couldn't get a job because I can speak Japanese.'

- (i) #Ie-no roon-dake zeikin menjo nano-wa zannenna koto-da. home-Gen loan-dake tax deductable Comp-Top too.bad thing-Cop
  - a. #'It is too bad that home loans are tax-deductable.'
  - b. Intended (unavailable): 'It is too bad that nothing else is tax-deductable.' (Yoshimura 2005 adapted from Horn 2002)

<sup>&</sup>lt;sup>3</sup> Following is Yoshimura's example that makes the same point:

b. Intended (unavailable): 'I couldn't get a job because I cannot speak any other languages.' (Satoshi Tomioka, p.c.)

[7] provides an explanation for Kuno's [8] observation, modeling her analysis after Horn's [9] analysis of English *only*. [7] proposes that Japanese *dake* asserts the prejacent (affirmative) proposition and entails the exceptive meaning<sup>4</sup>

I equate the notion of 'entailment' in [9] and [7] to 'conventional implicature' in the sense of [10]. Hence, (14) is analyzed as having two independent meanings, one is an assertion 'John came' and the other is a conventional implicature 'no one else came'.

- (14) JOHN-dake-ga kita. John-only-Nom came.
  - a. Assertion: John came.
  - b. conventional implicature ('entailment' in Horn 2002 and Yoshimura 2005): No one else came.

Yoshimura's (2005) proposal is based on Horn's [9] assumption:

(15) Only the assertional content can be a complement of a higher functor.

Hence, in (12), only the affirmative proposition 'you can speak English' is embedded under the conditional. Similarly, (13) shows that the conventional implicature 'I cannot speak any other languages' takes scope outside of the *because*clause.

To derive the correct interpretation for (5), I follow Yoshimura's (2005) proposal that the exhaustive meaning of Japanese *dake* contributes to a meaning level which is different from its prejacent proposition.

# 5 Scope of Dake

Given that the exceptive meaning of dake contributes to an expressive meaning, let us consider its meaning contribution itself. I propose here that dake takes different scopes depending on whether the sentence is Contrastive-marked or not. More specifically, dake normally takes the prejacent proposition as its argument and generates the exceptive meaning as a conventional implicature. When it is used in a Contrastive-marked sentence, dake takes scope over the assertion potential literal act [1] and implicates that the asserted proposition is the only assertion that the speaker makes with respect to the question under discussion.

#### 5.1 Exhaustification over Propositions

We start with the case without Contrastive-marking. (14), repeated here as (16), has a LF structure as in (17).

<sup>&</sup>lt;sup>4</sup> In Horn (2002), the meaning contribution of the English *only* is the reverse of *dake*, i.e., it asserts the negative proposition and entails the affirmative proposition.

#### (16) John-dake-ga kita. John-dake-Nom came

b.

a. Assertion: John came.

conventional implicature: No one else came.

(17) SpeechActP  
Assert IP  
$$\mathbf{dake} \alpha$$

We obtain the conventional implicature 'No one else came' by negating all the alternative propositions  $p \in Alt(\alpha)$  as depicted in (18).

 $(= \alpha)$ 

(18)  $\forall p[[p \in Alt(\alpha)\& p \neq \alpha] \to \neg p]$ 

#### 5.2 Quantification at Non-propositional Levels

Now, let us turn to the case with Contrastive-marking. It has been observed that a Contrastive-marked element takes scope higher than the propositional level. In [11], I claimed that the use of wa introduces the operator CON that must be linked to an attitude holder.<sup>5</sup>

The claim is motivated by the following fact. The implicature induced by Contrastive wa can be relativized to an attitude-holder other than the speaker if wa is embedded under an attitude predicate:

(19)	PETER-wa	kita-to	John-ga	shinjite-iru
	Peter-Con	come-Comp	John-Nom	believe-Prog

- a. Global: <u>The speaker knows</u> [John believes Peter came] Implicature: <u>The speaker</u> doesn't know [whether John knows that Mary came]
- b. Local: The speaker knows [John believes Peter came] Implicature: John doesn't know whether Mary came

Also, [13] observe that in (20–a), *JOHN-dake* 'only John' with a nominative marker receives a narrow scope interpretation with respect to the attitude verb, while with the Contrastive marker *-wa* in (20–b), it receives wide-scope.

(20)	a.	JOHN-dake- <b>ga</b> kuru to omotte-ita.	
		John-only-Nom come Comp thought	
		'I thought that only John would come.'	(thought > only)
	b.	JOHN-dake- <b>wa</b> kuru to omotte-ita.	
		John-only-Con come Comp thought	
		'Only John, I thought that he would come.'	(only > thought)

<sup>&</sup>lt;sup>5</sup> See also [12] who claims that contrastiveness operates on speech acts, not propositions.

[13] claims that the wa-marked element serves as a link to the information expressed by the sentence. Hence, it takes wider scope with respect to everything else in the sentence. Given these observations, I assume here that Contrastive-marking forces *dake* to take scope higher than a mere propositional level. We start by considering two possibilities. One is quantification over speech acts and the other is quantification over potential literal acts.

**Speech Acts** First, let us assume that if *dake* is used in a Contrastive-marked sentence, the sentence has a LF structure as in (21), and *dake* exhaustifies over assertion speech acts as formulated in (22).



(22)  $\forall a[[a \in Alt(ASSERT(\alpha))\&a \neq ASSERT(\alpha)] \rightarrow \neg a]$ 

However, the computation in (22) causes a theoretical problem. Namely, (22) involves a negation over speech acts, which is not a valid operation in the computation of speech acts as argued by [14].

[14] considers speech acts as moves in conversational games in the sense of [15]. In other words, speech acts lead from one set of social commitments to another set. Given this assumption, [14] claims that the only operation involved in speech acts is conjunction.

[14] motivates his proposal by the fact that a pair-list reading of a wh-question is possible only with a universal quantifier. The pair-list reading of (23) is derived by universal quantification over the question act, which is possible since universal quantification is reduced to conjunction.

(23) Which dish did every guest make?
⇔For every guest x: Which dish did x make?
⇔Which dish did Al make, and which dish did Bill make, and which did Carl make?

On the other hand, other quantifiers like *most*, which involve disjunction, cannot operate over question acts; hence, fail to have a pair-list reading (24).

#Which dish did most guests make?
⇔For most guests x: Which dish did x make?
⇔Which dish did Al make and which dish did Bill make, or which dish did Al make and which dish did Carl make, or which dish did Bill make and which dish did Carl make?

[14] gives the following explanation for why the only operation allowed for speech act computation is conjunction.

Conversational games are characterized by a set of states, and transitions between those states. If s is the current state in a conversational game, then the performance of an appropriate act A leads to a new state, s'.

Performing conjoined acts [A & A'](s) results in the union of the commitments that the consecutive acts of A(s) and A'(s) would have led to, namely A(s)  $\cup$ A(s'). For example, the resulting state of a consecutive utterance of acts in (25-a) is equivalent to the resulting state of the conjoined acts in (25-b). Hence, we can maintain the same semantic type of commitment states.

(25) a. Which dish did Al make? –The pasta. Which dish did Bill make? –The salad.
b. Which dish did Al make? And which dish did Bill make? Al (made) the pasta, and Bill the salad. [14]

On the other hand, a disjunction of A and A' at the state s would result in a **set** of commitment states, i.e.,  $\{A(s), A(s')\}$ , which is of a higher type than the initial commitment state. Another operation of disjunction would result in an even higher type. Thus, [14] concludes that there is no simple way to disjoint question acts. To illustrate, if (26) were a case of disjoint questions, the addressee would have a choice of answering one of the questions. Thus, the addressee could choose the first question and answer *I have been to Sweden*, even if the addressee has been to both Sweden and Germany. According to [14], however, this is an incomplete answer. Rather, the questioner asks whether the addressee has been to Sweden or to Germany; and hence, it should be answered by *yes* or *no*.

(26) Have you ever been to Sweden or have you ever been to Germany? [14]

Krifka (2001) further argues that negation is not involved in the algebra of speech acts, since negation would allow us to derive disjunction from the combination of conjunction and negation by De Morgan's law  $(\neg[A\&A'] = \neg A \cup \neg A')$ .<sup>6</sup>

- (i) a. JOHN-dake-**ga** nani-o kai-mashi-ta-ka? John-only-Nom what-Acc buy-Hon-Past-Q 'What did only John buy?'
  - b. \*JOHN-dake-**wa** nani-o kai-mashi-ta-ka? John-only-Con what-Acc buy-Hon-Past-Q

(ii) Intended Interpretation of (i-b)

<sup>&</sup>lt;sup>6</sup> Indeed, it is not possible to negate question act. In Hara (in progress), I argue that the use of *-wa* forces the exhaustification by *dake* to take place over question acts, and triggers negation of alternative acts, which is not a valid move in terms of conversational games as in (i–b).

a. As for John, what did he buy and

b. #It is not the case that as for other people, what did they buy?

Going back to Japanese exhaustification, as we have seen in Section 4, the use of *dake* involves two commitments: a positive one (assertion) and a negative one (conventional implicature). If the exhaustification took scope over speech acts, then the negation would also take scope over speech acts. This is not a legal operation on speech acts, hence we need to seek for another object that correctly characterizes the intuition in (9) and can take scope under negation.

**Potential Literal Acts (Siegel, To appear)** [1] introduces a notion of *potential literal acts* in order to make a correct paraphrase of so-called *Biscuit Conditionals* (or *Relevance Conditionals*). Since [16], it has been noted that there exist conditional sentences whose consequences are not literally restricted by the the propositional content of the antecedents. For example, in (27), the presence of the pizza in the fridge does not depend on whether the addressee is hungry or not.

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(27) If you're hungry, there's pizza in the fridge. [1]
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In the various literature [17,18,19,20,21,22,23] it has been suggested that Biscuit Conditionals restrict the speech act performed by the main clause as illustrated in (28).<sup>7</sup>

(28) If you're hungry, ASSERT (There's pizza in the fridge).

According to [1], however, this analysis leads us to an incorrect paraphrase for a Biscuit Conditional like (29).

(29) Whenever you get hungry, there's pizza in the fridge. (Chris Potts p.c. to [1])

If the conditions expressed by the antecedent of (29) actually applied to the speech act, (29) should be paraphrased as follows:

(30) at any time t at which you get hungry (PERFORMED ASSERTION) there's pizza in the fridge.

As [1] notes, "[t]he speaker certainly will not be performing the assertion at any time t at which the listener gets hungry." Hence, the speech act of assertion is not an appropriate object to be conditioned by the antecedent of a Biscuit Conditional.

Instead, [1] proposes that Biscuit Conditionals involve existential quantification over potential literal acts:

(i) If you're hungry, I say to you there's pizza in the fridge.

See [1] for discussion against Performative Hypothesis.

<sup>&</sup>lt;sup>7</sup> There is another approach to this type of construction, i.e., Performative Hypothesis [24,25,26,27,28,29,30]. In this approach, (27) is understood as having an implicit performative predicate as in (i).

(31) [Potential literal acts] are abstract objects consisting only of propositional content and
 whatever illocutionary force potential can be read directly from their morphosyntactic form, not necessarily the actual illocutionary act that might be performed. [1]

[1] also assumes that variables for potential literal acts (assertions, questions, commands, etc.) are introduced by a context-sensitive meaning-shift rule ((32)) in order to accommodate the cases where interpretation of a sentence does not converge.

(32) If B is a sentence of English with the morphosyntactic shape of an assertion and  $^{\beta}\beta$  is its translation, then *a* is an assertion of  $p \wedge p = ^{\beta}\beta$ , is also a possible translation of B, where *a* varies over assertions, *p* varies over propositions, and is an assertion of is the relation between assertions and propositions such that if x is an assertion of y, then y is the propositional component of x. [1]

After the meaning-shift rule, existential closure applies to these variable, hence (27) is paraphrased as in (33).

(33) If you're hungry, there is a (relevant) assertion that there's pizza in the fridge. [1]

[1] argues for the necessity of potential literal acts by pointing out that her analysis can make an adequate paraphrase for (29) as in (34). Potential literal acts are not acts that are actually performed and they do not specify the contextual variables (speaker, addressee, etc.) of actual speech acts. Therefore, the analysis does not tell us that in (29), there is a performed act at each time when the addressee gets hungry. Rather, (29) expresses that there is an abstract potential literal act at each time when the addressee gets hungry.

(34) At any time t at which you get hungry, there is/will be a (relevant) assertion that there's pizza in the fridge.

In summary, potential literal acts are abstract semantic objects that contain propositional content and illocutionary force potential.

In the next section, I adopt this notion of potential literal acts and analyze *dake* in a Contrastive-marked sentence as a quantifier which operates over alternative potential literal acts.

#### 5.3 Exhaustification over Potential Literal Acts

As mentioned in section 5.2, a Contrastive-marked element takes wide scope over the entire proposition. Accordingly, when *dake* is used in a Contrastivemarked sentence, it attempts to negate alternative speech acts. However, as argued by [14], negation cannot operate over speech acts, hence the meaning shift rule (32) applies. To illustrate, (5) (repeated here as (35)) is translated into a potential literal act as (36-a). In addition, the focus-marking on *John* generates an alternative potential literal act as in (36-b).

- (35) JOHN-dake-wa kita. John-dake-Con came.
- (36) a. a is an assertion of  $p \land p=\text{came(John)}$ b. alternative potential literal act: a' is an assertion of  $p' \land p'=\text{came(Mary)}$

After the meaning-shift rule, the conventional implicature denoted by *dake* negates the generated alternatives as in (37) ('assertion(B(F))' is a shorthand for 'a is an assertion of  $p \land p=B(F)'$ ).

(37) 
$$\forall a' [[a' \in Alt(assertion(B(F)))\&a' \neq assertion(B(F))] \rightarrow \neg a']$$

Given this, the interpretation of  $\mathbf{dake}(B)(F)$  in a Contrastive-marked sentence is summarized as follows:

- (38) Let F be the focus-marked elements, B the background The interpretation of **dake**(B)(F)
  - a. asserts: B(F)
  - b. implicates: There is no assertion of individuals other than F with respect to the question B.

Now, remember that both Contrastive wa and dake are expressive items that induce conventional implicatures. As a consequence, when both wa and dake are used as in (5), two conventional implicatures are generated independently.

(39) JOHN-dake-wa came.

(5)

- a.  $B = \lambda x. x$  came. F=John
- b. assertion: John came.
- c. conventional implicature 1, CON(B)(F): The speaker considers the possibility that 'Mary came' is false.
- d. conventional implicature 2,  $\mathbf{dake}(\mathbf{B})(\mathbf{F})$ : There is no assertion of Mary with respect to the question  $\lambda x$ . x came.

Let us go back to the contrast between wa and dake-wa repeated here as (40) and (41).

- (40) Did John and Mary come?
  - a. JOHN-wa kita. Mary-mo kita kamoshirenai.
     John-Con came. Mary-Add came might 'At least John came. Mary might have come, too.'
  - b. JOHN-wa kite, Mary-wa ko-nakat-ta.
    John-Con came. Mary-Con come-Neg-Past 'At least John came, and Mary didn't come.'

Since in (40), *dake* is absent, the first sentence only generates conventional implicature 1, 'the speaker considers the possibility that 'Mary came' is false.', which is compatible with the subsequent sentences.

(41) Did John and Mary come?

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a. #JOHN-dake-wa kita. Mary-mo kita kamoshirenai.
John-dake-Con came. Mary-Add came might
'At least John came. Mary might have come, too.'
b. #JOHN-dake-wa kite, Mary-wa ko-nakat-ta.
John-dake-Con came. Mary-Con come-Neg-Past
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'At least John came, and Mary didn't come.'

On the other hand, in (41), *dake* generates an additional implicature 'There is no assertion about Mary with respect to the question  $\lambda x$ . x came.' Hence, any continuation that asserts the speaker's knowledge of any other individuals with respect to the question under discussion turns out to be infelicitous.

## 6 Conclusion

The compositional contribution of the Japanese exhaustive particle *dake* within a Contrastive-marked sentence is puzzling if only one dimension of meaning is considered. If the exhaustive meaning denoted by *dake* contributed to an assertive level of meaning, the sentence would cause a presupposition failure, or compute an implicature which does not match the native speakers' intuitions. Instead, I propose that the use of *dake-wa* indicates the exhaustification over potential literal acts of assertion, rather than the exhaustification over propositions.

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