Contrastive Topics Operate on Speech Acts

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1.   Overview

The semantic notion of contrastiveness is frequently mentioned in studies of focus, particularly in connection with such empirical issues as exhaustive answers in question-answer pairs, overtly contrasting statements ('not A but B'), correcting statements, clefts/pseudoclefts, and association with focus with adverbs like *only* and *always*. The main empirical phenomenon to be examined in this paper is, however, contrastiveness associated with topicality, which is typically placed as a polar-opposite of focus in the pragmatics literature. The combination of the two notions is known to create a particular semantic effect that is often characterized as a sense of incompleteness, non-finality and/or uncertainty. The aim of this paper is to discover how this effect comes about.

Linguistic expressions that generate a sense of incompleteness were noted and discussed fairly early in the generative tradition. Perhaps, A- vs. B-accents in English (cf. Jackendoff 1972) are the first empirical phenomenon that falls into this category. The connection between this accent pattern and its particular semantic-pragmatic effect has been the topic of many subsequent works (e.g., Carlson 1983, von Fintel 1994, Kadmon 2001, Büring 2003). The Rise-Fall contour in German elicits similar effects as the English A-/B-accents, as discussed extensively in Büring (1997) and Krifka (1998). While English and German can produce the 'incompleteness' effects via prosodic cues, there are languages that make use of a particular morphology, in addition to prosody, to get similar results. Japanese and Korean are two of such languages. As a matter of fact, the connection between contrastiveness and topicality is more transparently seen in these languages precisely because of this morphology. The morpheme (*wa* in Japanese and *(n)un* in Korean) is typically used to mark what is often called a sentence topic or a thematic topic. The distinction between the two uses of the topic morphology was noted as early as in Kuno (1973), who popularized the term Contrastive Topic (henceforth abbreviated as CT). [1]

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[1] Although discussions of CTs in Japanese and Korean are not infrequent in the literature, they are often not connected to the idea of incompleteness and uncertainty. The description I find frequently is that the use of a CT means that there are contrasted

The strategy I employ in this paper is to draw certain conclusions primarily from Japanese data, which are largely comparable to Korean facts, leaving as an open question how possible cross-linguistic variations can be accommodated. In what follows, I review the key characteristics of Japanese contrastive topics. During this process, I will make reference to some of the analyses of CTs that have been proposed in the past and examine whether they can meet the challenges that Japanese CTs present. Section 2 begins with the general semantic/pragmatic effects that Japanese CTs bring about. It will become clear that Japanese CTs induce the kind of incompleteness effect that the English and German constructions do. Prosodic properties of Japanese contrastive topics will be reviewed next. The most significant in the discussion is the fact that a CT in Japanese can be the sole focalized element in a sentence, which makes it harder to employ for this language the kind of analysis that was proposed based on the presence of two different accents (e.g., A-/B-accents in English and Rise-Fall contour in German). While most of the discussions of contrastive topics (of any language) have been focused on declarative sentences or assertions, Japanese contrastive topics can be abundantly found with such non-assertion speech act sentences as questions, imperatives, performatives, and exhortatives. This fact is particularly challenging for an analysis based on knowledge states of a speaker (e.g., Hara 2006). In addition, a systematic account for the morphology of a CT remains elusive. Why should the same particle appear both in the contrastive and the thematic topic environments? No analysis presents an insightful answer to this query. Section 3 will present a brief introduction of the main idea that I will pursue. I argue that a CT necessarily involves a set of alternative speech acts. This set is a result of focalizing a CT. A focal accent evokes a non-singleton focus value, and the topic marker *wa* functions as the guarantor of the maximal scope of this focus value: It cannot be used up until it reaches the speech act level. The effect of incompleteness/uncertainty is generated out of a set of alternative speech acts with help of the typical Gricean reasoning and inferences. In order to account for subtle differences among the various uses of CTs, however, it is necessary to augment the analysis with an additional ingredient, namely an economy-like principle that makes focusing the more preferred option than CT-marking. Section 4 discusses a few cases where this principle is at work. I consider this paper only the beginning of a rather big project on contrastiveness, and I by no means intend to claim that all the puzzles of CTs are solved. On the contrary, my proposal leads to a new set of questions, and I will end this paper with brief discussions of them.

2.   Japanese Contrastive Topics

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entities in the context, and if the CT is replaced by any of those entities, the sentence becomes false. This description is not precise, and we will see that there are many examples that do not match this description. There are some predecessors whose characterizations are more accurate; see C.-M. Lee (1999, 2006) and Hara (2006).

2.1. Basics

Let me first establish the background understanding that Japanese CTs have effects of incompleteness or uncertainty similar to those found in English and German. Consider the English example (1).

(1)   FREd ate BEAns.
        B-acc   A-acc

The sentence (1) can be uttered as a partial answer to the question *What did the students eat?*, provided that Fred is one of the relevant students. In such a situation, (1) leaves the impression that the speaker does not know what the other students ate. Hence, a sense of incompleteness/uncertainty on the speaker's part. The Japanese counterpart of (1) takes the following form.

(2)   ERIka-wa   MAME-o   tabe-ta   (kedo)
        Erika-top   beans-acc   eat-past   (but)
        'Erika ate beans (but ...)'

This sentence can be used in the situation described above and function as a partial answer to the question. Importantly, if the topic marker *wa* is replaced by the canonical subject marker (i.e., the nominative particle *ga*), the sentence is infelicitous. Such a sentence can, of course, be used as a complete answer to the multiple Wh-question *Who ate what?*, but no matter how one attempts to manipulate its prosody, the nominative counterpart of (2) cannot induce the same effect that (2) has.

      CT sentences also affect scope interpretations in the same way that the Rise-Fall contour in German does. In the example (3a) below, for instance, the universal quantifier, *alle Politker* 'all politicians', can take either wide or narrow scope with respect to negation. The use of the Rise-Fall contour in this sentence, however, disambiguates the sentence in such a way that it only has the negation-wide-scope interpretation.

(3)   a. Alle Politiker   sind nicht   korrupt.   (= Büring 1997, (1a))
           all   politicians   are not   corrupt
        'All politicians are such that they are corrupt' OR 'Not all politicians are corrupt.'

        b. /ALLE Politiker sind NICHT\ korrupt.   (= Büring 1997, (2a))
        'Not all politicians are corrupt.'

In Büring (1997), this disambiguation phenomenon is tied to the incompleteness/partiality that contrastive topics in general bring about. The surviving interpretation is weaker than the eliminated one in the sense that it leaves more open questions. In

terms of the proportion of corrupt politicians, the eliminated interpretation (i.e., the universal-wide-scope reading) would give a final answer whereas the surviving one is still a partial answer and possibly invites further questioning (e.g., *if not all, are MOST politicians corrupt?*). Japanese displays patterns similar but perhaps not identical to German (cf. Hara 2006). Unlike German, almost all native speakers judge a sentence like (4a) unambiguous with the universal-wide-scope being the only available reading.[2] However, the effect of a contrastive topic is identical: It reverses the scope relation, and as a result, (4b) has the negation-wide-scope interpretation only.

(4) a. Minna-ga   ko-nak-atta
        All-nom   come-neg-past
     'All people were such that they didn't come.'

     b. MINNA-wa/Minna-WA   ko-nak-atta
        All-top   come-neg-past
     'Not all people came.'

2.2. Prosody

While Japanese CTs may give the impression that they should be treated on a par with the A-/B-accents in English and/or the Rise-Fall contour in German, they have one property that is not found with the English and the German counterparts. As the example (2) shows, a Japanese CT can cooccur with a focused element, but the presence of an additional focus is not required. In (4b), for instance, the VP *ko-nak-atta* 'did not come' is deaccented or reduced, which indicates the absence of focus in the VP. As far as its prosodic characteristics are concerned, a Japanese CT behaves just like a proto-typical focus. In focusing in Japanese, a high pitch accent is placed on the focused element, and the pitch accent of the material on its right is radically lowered. This lowering, called post-focus reduction in Ishihara (2003), is more drastic than the typical down-step phenomenon that takes place in a phonological unit (i.e., a major phrase), as described by Nagahara (1994), Ishihara (2002, 2003), Kubozono (2005) among others.

It is my impression, although not statistically proved, that CTs without any other focus are more common or frequently found than CTs with additional foci, just as may be the case that single focus sentences are more common than multiple focus sentences. Here are some more examples where the CTs are the sole focalized

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[2] This gap between German and Japanese is based on the judgment reported in Büring (1997). However, this view does not seem to be universally endorsed. Krifka (1998, Section 3.3) points out that it is commonly assumed that the sentence is unambiguous, just as is the case with the Japanese counterpart.

phrases.

(5)   A: Who passed?

        B: KEN-wa/Ken-WA   ukat-ta
           KEN-top/Ken-TOP   pass-past
        '(At least) Ken passed.'

(6)   A: How many people will come to the party?

        B: SAN-NIn-wa/San-nin-WA   kuru-desyoo.
           THREE-CL-top/three-CL-TOP   come-evid
        '(At least) Three people will come, (as far as I can tell).'

(7)   A: How much does a new hybrid car cost?

        B: NIMAN-GOSEN-DORU-wa/Niman-gosen-doru-WA   suru
           25,000 dollars-top/25,000 dollars-TOP   costs
        'It costs (at least) $25,000.'

Unfortunately, Büring's (1997, 2003) analyses, based on the English and German facts, require two different types of accents to generate what his analyses need. Couched within the Alternative Semantics for Focus (Rooth 1985, 1992), his accounts have two distinct levels of alternative generation, as briefly summarized below.

(8)   a. A focus accent elicits a non-singleton set of propositions (= a focus value).

        b. A topic accent operates on a focus value and elicits a set of sets of propositions (= a topic value), which is identified as a set of questions (cf. Hamblin 1973, Karttunen 1977).

        c. In Büring (1997), the Disputability Condition provides that the ordinary value of the sentence does not answer all the questions in the topic value. In Büring (2003), the utterance context of the sentence must furnish one of the questions as a discourse topic.

The Japanese prosodic patterns do not go well with this type of analysis, as already pointed out by Hara (2006).[3] The Japanese facts, therefore, encourage us to pursue an

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[3] Büring (2003, p.532) anticipated a challenge of this kind, citing an English example like (i), where there does not seem to be any focused material other than the CT.

account that derives the effect of incompleteness without making appeal to two distinct accents. [4]

2.3. Contrastive Topics and Speech Acts

(i)   a. Can Jack and Bill come to tea? [Bill]$_{CT}$ can. (= Büring 2003, (38), p. 532)

b. {{x can come to tea} / x $\in$ D$_e$}   (= Büring 2003, (39c), p. 532)

The suggestion made in connection to (ia) is to treat its topic value as a set of polar questions, which Büring identifies as a set of singleton sets of propositions, as in (ib). This may work for an example like (i), but perhaps not for (6) or (7) above, where the CT is a measure expression.

[4] Another potential problem for Büring's account is an embedded CT. Hara (2006) points out that, when a Japanese CT can be embedded, it shows an ambiguity in terms of whose point of view is relevant for incompleteness. Consider the following example.

(i)   a. [$_{CP}$ MARI-wa/Mari-WA   kita-to]   Erika-ga   sinzite-iru
            MARI-top/Mari-TOP (CT)   came-C Erika-nom believe-pres

b. Erika believes that Mari came, but Erika is not certain whether those other than Mari came.

c. Erika believes that Mari came, but the speaker is not certain whether Erika believes anyone other than Mari came.

(ib) meaning is not easy to license within the kind of approach Büring proposes because it relies on the presence of a topic (a question) in the discourse level only. This difficulty becomes more pronounced in (ii).

(ii)   A: What did Fred say?

B: [$_{CP}$ MARI-wa/Mari-WA   kuru-to]-**dake**   (pro) it-ta
         MARI-top/Mari-WA   come-C-only   say-past
      '(He) only said that [Mari]$_{CT}$ will come.' or paraphrasable as '(He) only said that at least Mari will come.'

Notice that B's sentence gives a <u>complete</u> answer to A's question, as indicated by *dake* 'only'. The use of a CT is nonetheless licensed.

The second point that I would like to make is appearances of Japanese CTs in a variety of speech act sentences. As far as I can tell, almost all studies of CTs, of Japanese or otherwise, have focused almost exclusively on declarative sentences or sentences that correspond to assertion acts. We need not look hard, however, to find CTs in other type of speech act sentences in Japanese. [5]

(9)　Interrogative
　　　... Zyaa　　　Erika-WA/ERIka-wa　　　doko-e　　　itta-no?
　　　... then　　　Erika-TOP/ERIKA-top where　　　　　went-Q
　　　'..., well then, where did ERIka go?'

(10)　Imperative
　　　Eego-WA/EEGO-wa　　　　　　tyanto　　　yatte-ok-e.
　　　English-TOP/EBGLISH-top　　　without-fail　do-prepare-imp
　　　'At least, prepare yourself for ENGLISH.'

(11)　Exhortative
　　　Kyooto-NI-WA/KYOOto-ni-wa　　iko-o
　　　Kyoto-LOC-TOP/KYOTO-loc-top go-exh
　　　'At least, let's go to KYOto.'

(12)　Perfomative
　　　Sutoraiki-no-tame,　　　KYOO-wa/kyoo-WA　　　yasumi-to　　suru
　　　labor strike-gen-due　　　TODAY-top/today/TOP　　off day-comp do
　　　'Due to the labor strike, we make it that there be no work TODAY.'

The significance of CTs across speech acts is that they cannot be easily accounted for within the analyses of CTs based on knowledge states of speakers/attitude holders, such as Hara (2006), van Rooij and Schulz (2004), and Hara and van Rooij (2007). Hara (2006), for instance, makes a proposal that is summarized in (13).

(13)　a. Pitch accent of a CT generates a set of scalar alternatives, which are ordered in terms of their semantic strength (cf. Sauerland 2004).

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[5] Curiously, exclamative sentences cannot host a CT.

(i)　#Kyooto-WA/KYOOto-wa　nan-te　　　kirei-nan-daroo
　　　Kyoto-TOP/KYOto-top　　what-ger　　pretty-be-evid
　　　'#At least, how beautiful KYOto is!'

I confess that I do not understand why.

b. The appearance of a CT in a sentence α presupposes that, among the set of scalar alternatives to ⟦α⟧, there must be a proposition that is stronger than ⟦α⟧.

c. The appearance of a CT in a sentence α conventionally implicates that the speaker of / attitude holder to ⟦α⟧ believes that the stronger proposition is possibly false.

Hara's analysis is one step closer to the minimal theory of contrastive topics in the sense that, unlike Büring's account, it requires no extra semantic objects like topic values. As Hara herself acknowledges, however, her analysis primarily targets CTs in assertions where the notion of the speaker's knowledge state is most directly relevant. The extension of her analysis to other speech act sentences with CTs is not impossible perhaps but is certainly not straightforward. For instance, take the imperative sentence (10), repeated below.

(10)   Eego-WA/EEGO-wa   tyanto   yatte-ok-e.
        English-TOP/EBGLISH-top   without-fail   do-prepare-imp
        'At least, prepare yourself for ENGLISH.'

Suppose that this sentence is given as a reply to someone's query of what he should do to increase his chance of passing the entrance exam to some university. As a speaker, I know that English, math, and natural sciences are equally important for the final outcome. Even then, I can still say (10). What would I mean in such a context? Possibly I think that preparing all three subjects would be too demanding for the poor examinee, and that focusing on English would be a better option than spreading his time and energy thin on all three. Or I may even be convinced that the examinee has no chance of passing and believe that studying English will have more practical advantage in the examiner's future than the other two subjects. These are some possible ways of my reasoning in saying (10). It is not clear how my epistemic state alone can derive these effects.

Even with assertions, on which epistemic knowledge is most directly reflected, a CT does not necessarily induce the kind of effect that a theory like Hara's predicts. Consider (5) again.

(5)   A: Who passed?

       B: KEN-wa/Ken-WA   ukat-ta
          KEN-top/Ken-TOP   pass-past
       '(At least) Ken passed.'

Imagine the following scenario. B is one of the examiners, and A assumes that B has full, complete knowledge of the outcome of the exam. Hara's implicature guarantees that B thinks it possible that the people other than Ken, let's say Mari and Erika, have

failed. In this scenario, however, A would draw a conclusion that is much stronger than that. The assumption that B knows the outcome of the exam, coupled with the general Gricean principle that requires B to be as informative as possible, would lead to the conclusion that Mari and Erika did not pass. This is something that B can easily foresee that A would conclude under the circumstances. Then, why did B say what he said? Why didn't he say (14), where *Ken* has the nominative *-ga*.

(14)   A: Who passed?

        B: KEN-ga   ukat-ta
           KEN-nom pass-past
        'KEN passed.'

(14B) would induce the same result as the CT marking in the scenario described above; The answer renders itself as the complete answer to A's question, and it therefore implicates that noone other than Ken passed. Thus, as far as the hearer's understanding of the speaker's epistemic state and its impact on the discourse context are concerned, the two versions should be no different from each other. Why, then, are both strategies allowed? The fact is, the two sentences are not the same. The CT version (5) may get the hearer to suspect that the speaker, even though he has full knowledge, wishes not to communicate the outcomes of the others to the hearer. I am not certain whether this kind of effect is derivable within the knowledge-based accounts of CTs.

2.4.   Topic Morphology

The final piece of the CT puzzle is perhaps the most obvious: Japanese uses the same morphology for a contrastive topic and a thematic topic. There has not been a serious attempt to explain why this morphological fact exists. In Büring's (1997) account, his use of the term *contrastive topics* has an theory-internal justification. He takes the position that a sentence topic is identified with a question in the discourse (Question-under-Discussion; QUD). This approach has been popular among formal semanticists and seen a lot of development in recent years (cf. von Fintel 1994, Roberts 1994 among many others). A topic value generated by a topic accent is a set of questions, and those questions are connected to a sentence topic (=QUD) in some ways. In this sense, we can see some connection between a contrastive topic and a sentence topic. The topic marking in languages like Japanese and Korean has encouraged a rival theory to this approach to emerge. Portner and Yabushita (1998) calls it the 'Topic as an Entity' approach, which has its root in a more pragmatics-oriented framework, such as the Prague School pragmatics. It was made popular by Kuno (1973), and Portner and Yabushita (1998) themselves endorse a version of it in their analysis of Japanese topics. Ironically, this approach makes it harder to see a correlation between CTs and sentence topics or thematic topics (henceforth, TTs).

Apart from the use of the same particle, CTs and TTs do not seem to share a lot of characteristics. Indeed, their differences are more noticeable than their similarities.

(15)   a. A TT does not receive focal accents whereas a CT must.
        b. A TT is most typically found in the sentence initial position whereas a CT can stay in situ.
        c. A TT must be nominal or quasi-nominal (i.e., NP, CP, or PP) whereas a CT can be of any category, including V(P), Adj(P), and Adv(P).
        d. A TT refers to a contextually familiar or recoverable entity whereas a CT can be familiar or novel.

If one pursues a uniform semantic theory of *wa*, these facts are certainly discouraging. (15d), in particular, defies the usual understanding of what a sentence topic is. It definitely refutes a seemingly sensible way of analyzing a CT as contrasted old information. To see how unlikely this idea is, we only have to look at one of our old examples.

 (7)   A: How much does a new hybrid car cost?

        B: NIMAN-GOSEN-DORU-wa/Niman-gosen-doru-WA   suru
           25,000 dollars-top/25,000 dollars-TOP   costs
        'It costs (at least) $25,000.'

Under no reasonable criterion of familiarity could '$25,000' be construed as old information in this context.

2.5.   Summary

To sum up this section, we have seen the following characteristics of Japanese CTs.

(16)   a. CTs induce the sense of incompleteness or non-finality in a way similar to the English A-/B-accents and the German Rise/Fall contour do.

        b. In Japanese, a CT can be the only focalized element in a sentence.

        c. Japanese CTs can appear in speech act sentences other than assertions.

        d. The same particle is used for a CT and a TT in Japanese.

None of the currently available accounts of CTs can accommodate all the properties without major modifications or additions to their machineries. What would the minimal and hence ideal analysis of Japanese CTs look like? It would make use of the semantic contribution of focal accent on a CT and combine it with the function of the topic

particle. Coupled with some independently needed principles, these two ingredients should be sufficient to derive the effect of incompleteness across speech acts. Such an account may sound too idealistic, but I believe that it is an obtainable goal.

3.   Contrastive Speech Acts

In this section, I will lay out the main proposal. It is based on a very simple idea: CTs operate at the level of Speech Acts, and the effect of incompleteness/non-finality is a result of a general principle of conversation in the Gricean sense, augmented by the notion of competition between a CT and an ordinary focus in terms of informativity.

First of all, let me spell out one of the background assumptions needed for my proposal. I take a position, following Krifka (2001, 2002, 2004), that Speech Acts are within the boundary of sentence grammar. Thus, they are integrated into syntactic representations (i.e., the presence of Speech Act Phrases) and compositional interpretations in the semantics component, can be quantified into when certain conditions are met (cf. Krifka 2001), and can even be embedded (cf. Krifka 2002, 2004, Portner to appear). More specifically;

(17)   a. A Speech Act is one of the basic types (type *a*).
b. A Speech Act operator is a function from the type of the sentence radical it selects to type *a*. For instance, the Assertion Operator ASSERT is type *<st,a>*.

The second ingredient is a straightforward adaptation of the Alternative Semantics for Focus. A focal accent on a CT elicits a set of alternatives, or more generally, such an accent makes the focus value of a constituent containing a CT a non-singleton set.[6] The combination of the two background assumptions creates a new possibility, however. We can now have a set of alternative speech acts, and this is the idea I would like to exploit for CTs. Specifically, I propose (18).

(18)   A focus on a CT is not closed off until the Speech Act level.

(18) means that the appearance of a CT necessarily leads to the existence of a set of alternative speech acts. Let me illustrate how the proposal works with a specific example.
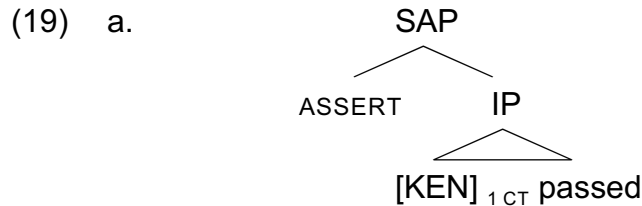
(5)   A: Who passed?

B: KEN-wa/Ken-WA   ukat-ta

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[6] This set of alternatives can be ordered in terms of scale of informativity or semantic strength, as Hara (2006) assumes, but for the current proposal, it does not have to. See Section 4 for more discussions.

KEN-top/Ken-TOP   pass-past
'(At least) Ken passed.'

The B's sentence in (5) has the LF structure shown in (19a). Its ordinary value, (19b), is straightforward. As for the focus value, I adopt Kratzer's (1991) idea of using designated variables and distinguished assignments although the way I implement it follows Beck's (2006) re-interpretation of Kratzer's idea. [7]

(19)   a.

$$
\begin{array}{c}
\text{SAP} \\
\diagup\quad\diagdown \\
\text{ASSERT}\qquad\text{IP} \\
\diagup\quad\diagdown \\
[\text{KEN}]_{1\,CT}\ \text{passed}
\end{array}
$$

b. The ordinary values ($[\![\ ]\!]_o$) : For any ordinary assignment function g;
$[\![\textbf{[KEN]}_{1\,CT}\ \textbf{passed}]\!]_o^{(g)} = \lambda w.\ \text{Ken passed in w}$
$[\![\ \textbf{ASSERT [KEN]}_{1\,CT}\ \textbf{passed}]\!]^{o\,(g)} = \text{ASSERT}(\lambda w.\ \text{Ken passed in w})$

c. The focus values ($[\![\ ]\!]_f$) : For any ordinary assignment function g and distinguished assignment h;
$[\![\textbf{[KEN]}_{1\,CT}\ \textbf{passed}]\!]_f^{(g)/h} = \{p:\ \exists x\in D_e.\ p = [\![\textbf{[KEN]}_{1\,CT}\ \textbf{passed}]\!]^{(g),\,h1/x}\}$
$= \{p:\ \exists x\in D_e.\ p = \lambda w.\ x\ \text{passed in w})\}$
$[\![\ \textbf{ASSERT [KEN]}_{1\,CT}\ \textbf{passed}]\!]_f^{(g)/h} = \{a:\ \exists x\in D_e.\ a = \text{ASSERT}(\lambda w.\ x\ \text{passed in w})\}$

In the context in which Ken, Mari, and Erika are under consideration, the set of alternatives would be {ASSERT($\lambda w.$ Ken passed in w), ASSERT($\lambda w.$ Mari passed in w), ASSERT($\lambda w.$ Mari passed in w)}.
    From this point on, we make use of a typical rule of conversation:

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[7] Alternatively, a CT-marked constituent movies and adjoins to a SAP, resulting a kind of structure that is used in the Structured Meaning Approach to Focus (cf. Krifka 1994, von Stechow 1989 among others). This is certainly a possibility, but there are a few reasons why I prefer the 'in-situ' approach. First, when a CT is on a quantifier, it actually does not get wide scope (e.g.,, a CT-marked universal quantifier with negation) although this problem can be circumvented by assuming that the trace left by the movement is necessarily of the same type of the moved constituent. Second, a CT can be just on a verb or an adjective stem, as briefly summarized in (15c). This seems to necessitate movement of an X^0-category to an XP adjunction position. This problem, like the first one, could be solved. For instance, some kind of pied-piping operation would make the movement more syntactically kosher. Unless we have good to reason for postulating movement to SAP, however, I follow the in-situ approach.

(20)   a. The speaker asserted that Ken passed.

b. There are three possible assertions that she could have made, but she only asserted one of them.

c. There must be a reason for her not asserting the remaining two.

The difference between the current proposal and the knowledge-based approach is that the speaker's knowledge state is only one of the possible reasons for not making the alternative assertions. Recall the scenario I described in the previous section. B is one of the examiners and is expected to have full knowledge of the outcome of the exam. Then, A, the hearer, deduces that the reason for B's using CT in his answer is not that he does not know whether Mari and Erika passed. Perhaps, B thinks that it is impolite for Mari and Erika to inform A that they did not pass. Or else, B is just being coy, waiting for A to ask 'How about Erika and Mari?' These exemplify possible ways of reasoning that A would make, and the use of a CT in this kind of situation invites such speculations. The use of the canonical nominative *ga* does not warrant such thoughts since it is supposed to be a final, complete answer to the question *who passed?*
   The other speech act sentences work in a similar fashion. Take the imperative example again.

(10)   Eego-WA/EEGO-wa   tyanto   yatte-ok-e.
       English-TOP/EBGLISH-top   without-fail   do-prepare-imp
       'At least, prepare yourself for ENGLISH.'

The use of a CT in (10) leads to the following reasoning: The speaker engaged in the imperative act 'Prepare yourself well for English', and did not engaged in the other possible imperative acts, such as 'Prepare for Math', or 'Prepare for Natural Sciences'. We can easily imagine that the possible motivations for the speaker's choice include those I described in Section 2.3. All in all, the presence of alternative speech acts allows conversation participants to make the kinds of conjectures that would bring about the sense of incompleteness, uncertainty or non-finality.
   Another distinct advantage of the current proposal over its competitors is that we now have a clue for the morphological marking. First of all, if there is any linguistic expression that can be outside the scope of speech act, it is one that corresponds to a topic. Krifka (2001) suggests, following Jacobs (1984), that topics can, or even must, be outside the scope of speech acts.

Going one step further, one could argue that topics even *have to* scope out of speech acts. Topic selection is a speech act itself, an initiating speech act that requires a subsequent speech act, like an assertion, question, command, or curse about the entity that was selected. This was suggested, for example, in Jacobs (1984), where topics are assigned illocutionary operators of their own.

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(Krifka 2001, p.25)

With this understanding of what topics are, we have a new perspective on the morphology of CTs. The requirement (18) provides that a set of alternatives should survive until it reaches outside the scope of a speech act. It is no accident that this task is carried out by the presence of the morpheme that typically signals topicality. Of course, the correspondence between the two types of topics is completely parallel if a CT moves and adjoins a SAP, as discussed in footnote 6. But even with the in-situ approach that I am taking in this paper, we can consider *wa* as an indicator of 'outside the scope of a speech act'. Thus, one of the outstanding puzzle of CTs is explained.

      The general idea I put forward is quite simple. With speech acts being fully represented in syntax, we can make use of speech acts as semantic objects within the sentence grammar. In particular, the mechanics used for focusing effects is extended to speech acts, and the notion of a set of alternative speech acts becomes available for pragmatic reasoning. This way of thinking allows us to see the morphological parallelism between CTs and TTs. However, this is not the end of my story. To get certain subtle differences among various uses of CTs, the general idea I presented in this section needs further refinement.

4.   Fine-Tuning the Analysis

Recall how the pragmatic reasoning works for a set of alternative speech acts. A CT in a speech act α elicits a set of speech acts that includes α and its alternatives. Since only the speech act α was acted by the speaker, the hearer is invited to speculate possible reasons for the speaker's not engaging in the other speech acts. In a typical assertion context, not carrying out the other assertion acts can be that the speaker does not know whether the propositions in those assertions are true or false, or else that she knows that they are false. In other words, the pragmatic reasoning with a set of alternative speech acts does not preclude the possibility that the speaker is fully knowledgeable of the relevant facts. However, this possibility is often unavailable, particularly with CTs on measure phrases. Consider (6) and (7) again.

(6)   A: How many people will come to the party?

        B: SAN-NIn-wa/San-nin-WA   kuru-desyoo.
          THREE-CL-top/three-CL-TOP come-evid
        '(At least) Three people will come, (as far as I can tell).'

(7)   A: How much does a new hybrid car cost?

        B: NIMAN-GOSEN-DORU-wa/Niman-gosen-doru-WA   suru
          25,000 dollars-top/25,000 dollars-TOP   costs

'It costs (at least) $25,000.'

The following are the steps of pragmatic reasoning for (6).

(21) a. There is a set of alternative speech acts generated by the CT-marking on *san-nin* 'three people'. Let it be {ASSERT(λw. 1 person will come in w), ASSERT(λw. 2 people will come in w), ASSERT(λw. 3 people will come in w), ASSERT(λw. 4 people will come in w), ASSERT(λw. 5 people will come in w), ASSERT(λw. 6 people will come in w),...}

b. The speaker asserted that 3 people will come.

c. There is a reason for the speaker's not engaging the other acts.

The first two acts (i.e., ASSERT(λw. 1 person will come) and ASSERT(λw. 2 people will come)) are easily eliminated: The propositions in those speech acts are entailed by the proposition that three people will come. So, these assertions would be less informative than what the speaker's knowledge allows. How about the rest? Could it be that the remaining acts were not acted because the speaker knows that no more than 3 people will come? It should be possible, but then, such reasoning would lead to the 'exactly three' interpretation that is not present in the example. With the utterance of (6B) comes the strong sense that the speaker believes it possible that more than three people will come. Thus, the most suitable translation of the sentence is 'At least three people will come.' In other words, the strengthening of its meaning to 'exactly three' has to be blocked.
　　To explain this effect, I introduce the idea of competition between a CT and a focus. In the same context as in (6), B could have said (22).

(22) B: SAN-NIn   kuru-desyoo.
　　　　THREE-CL   come-evid
　　　'Three people will come.'

Without a CT, the measure phrase *san-nin* is a typical focus, and it generates the usual 'exactly three' implicature associated with a numeral expression. In other words, (22) was a possible response for B to make, but in reality, B used a CT in (6) instead. This leads to the addition of an extra step to (21):

(21) d. The speaker could have avoided using a CT, which would allow the implicature that three but no more than three people will come. There must be a reason for the speaker's choosing a CT over her avoidance of it.

This would successfully eliminate from the hear's reasoning the possibility that the speaker has full knowledge of the facts concerning the question of how many people

will come. Among the alternatives listed in (20a), the first two acts (i.e., ASSERT(λw. 1 person will come) and ASSERT(λw. 2 people will come)) are still eliminated. However, the remaining alternatives would not be because of the weakening effect that comes out of (21d). Hence, the result is the obligatory 'at least three' interpretation for (6B).

      The competition between a CT and a usual focus can also deal with the kind of case for which Hara (2006) used a scalar presupposition. Recall that she had three conditions, given in (13), for using a CT.

(13)   a. Pitch accent of a CT generates a set of scalar alternatives, which are ordered in terms of their semantic strength (cf. Sauerland 2004).

        b. The appearance of a CT in a sentence α presupposes that, among the set of scalar alternatives to $[\![\alpha]\!]$, there must be a proposition that is stronger than $[\![\alpha]\!]$.

        c. The appearance of a CT in a sentence α conventionally implicates that the speaker of / attitude holder to $[\![\alpha]\!]$ believes that the stronger proposition is possibly false.

The necessity of scalar alternatives and the presupposition (13b) comes from examples like (23).

(23)   #MINNNA-wa/Minna-WA   kita.
       ALL-Top/All-TOP   came
       '[All people]$_{CT}$ came.'

The CT-marking on *minna* 'all (people)' would generate the following set of scalar alternatives.

(23)   {All people came, most people came, some people came, no people came}

The presupposition (13b) provides that there be an alternative stronger than the ordinary value of the sentence *all people came*. However, there is none. The propositions *most people came* and *some people came* are entailed by the ordinary value, and the last one contradicts it. So, the condition is not met, and that is why (23) is infelicitous.

      In the previous section, we have seen that the conventional implicature based on the speaker's knowledge (= (13c)) can be dispensable with the idea of a set of alternative speech acts. However, the presupposition (= (13b)) seems still necessary because the following reasoning is valid.

(24)   a. The CT-marking on *minna* generates a set of speech acts; {ASSERT(λw. all people came in w), ASSERT(λw. most people came in w), ASSERT(λw. some people came in w), ASSERT(λw. no people came in w)}

b. The speaker asserted that all people came.

c. There must be a reason for the speaker's not engaging the other acts.

d. The reason for not asserting no one came is that it is false. The reason for not asserting the rest is that they are entailed by the asserted proposition and are therefore not as informative as the asserted proposition.

With the addition of the competition between a CT and a focus, however, the presupposition (13b) is no longer necessary. The speaker could have avoided the use of a CT by simply focusing on *minna* 'all (people)', and there should be a reason for this avoidance. Notice, however, the nominative counterpart, shown below, gives the exactly the same interpretation.

(25)   MINNA-ga   kita
        all-nom   came
        'All people came.'

Therefore, the use of a CT becomes infelicitous. The idea behind this way of analyzing (23) is that a CT is a more marked option than an ordinary focus. The use of a CT is justified only when the result is distinct from that of a focus.[8] In general, Hara's presupposition says that a CT cannot be used in a context where the sentence with the CT is the strongest among the scalar alternatives. Instead of using comparison among semantic objects (= alternatives), I am suggesting to use comparison between two different ways of expressing; a CT vs. a focus. The latter should be stronger than the former, and when there is no difference, the sentence becomes infelicitous. This strategy of comparison is needed to ensure weaker interpretations in sentences with measure phrases, and replacing Hara's presupposition with it would make our analysis one step closer to the minimal theory of CTs.

5.   More Speculations and Further Issues

Let me summarize what I have so far argued for. I introduced the notion of alternative speech acts as a possible focus semantic value in natural language. This new semantic object is derived from the two essential facets of CTs; focal accent and the topic particle *wa*. A set of alternative speech acts interacts with the general Gricean reasoning and inferences, one of which is the 'economy-like' principle that prefers the focus strategy to the CT when the results are indistinguishable. The current proposal makes many of the construction-specific properties and/or principles of CTs totally

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[8] It is interesting to note that Büring (2003) arrives at exactly the opposite conclusion (Büring 2003, (36) on p.531) although the empirical phenomena he derives this conclusion from are rather different from our current concerns.

dispensable; topic values and the disputability requirement of Büring (1997) and the scalar presupposition and the conventional implicature of Hara (2006) have no roles to play. Having said this much, I am the first to admit that there are many unresolved issues in connection with the new idea, and I would like to end this paper with brief discussions of them.

First of all, the competition between a CT and a focus needs further theorizing. I take it granted that focusing induces a kind of exhaustivity implicature that affects possible interpretations of a CT. I did not even attempt, however, to show how this exhaustivity should be derived. One of the most intriguing trends in the formal semantic and pragmatic literature is to question the long-established boundaries between sentence grammar and pragmatics. Particularly interesting for the purpose of this paper is the treatment of certain types of pragmatic strengthening mechanisms. Fox (2006), for instance, advocates the view that the exhaustivity associated with disjunction and other scalar items is derived via the exhaustivity operator (Exh).

(26) $[\![Exh]\!]\ (A_{<st,t>})(p_{st})(w) = p(w)\ \&\ \forall q \in NW(p,A): \neg q(w)$ (= Fox 2006, (15))

Notes: $A_{<st,t>}$ = a set of (scalar) alternatives
                NW (p,A) = a set of alternatives that are not weaker than p

Although Fox does not specifically discuss the exhaustivity associated with contrastive focus, its potential to be extended to contrastive focus is quite obvious.[9] What this exhaustivity operator does is quite simple. It is a lot like *only*, except that the denotation of its argument (the proposition denoted by the sentence Exh selects) is part of its assertive content whereas it is presupposed with *only*. What I find remarkable is that what this operator does is almost completely parallel to the pragmatic reasoning that we use on a set of alternative speech acts. Of course, the parallelism is not complete because it is non-sensical to negate speech acts and we did not appeal to the scalarity of alternatives for speech acts. Nonetheless, the similarity is there. Our pragmatic reasoning says that, out of a given set of alternative speech acts, the ordinary value is the only one that was carried out, and the speech act agent did not engage in the others in the set. Therefore, it is not inconceivable that CTs use the exactly the same operator, Exh, as focus does, and that the only difference is the matter of scope: Exh for focus take scope over propositions whereas Exh for a CT sits above a Speech Act Phrase. This is an interesting possibility that deserves close examination.[10] The idea

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[9] Fox himself is quite receptive to this possibility (Fox 2006, footnote 13).

[10] A point in favor of using an operator is a CT with additional focus. Recall that a CT can be the sole focalized element in a sentence but is compatible with an additional focus, as exemplified in (i).

(i)   What did the students eat?

of competition between a CT and a focus also requires more empirical support. Specifically, one would wish to know whether there are any cases where such a competition does not take place for whatever reason, and if there are such cases, what kind of pragmatic effects show up. Our current proposal predicts that the obligatory weakening that we witnessed with the CT-marking on a measure phrase does not take place. If this prediction is borne out, it further strengthens the validity of the proposal.

Another sticky issue is cross-linguistic variability. One of the main motivations for the current proposal is the fact from Japanese prosody: A CT can be the only focalized element in a sentence and does not require the presence of another focus. This fact is, in my opinion, quite solid, and I do not think it is wise to look for some kind of hidden focus in the prosodically reduced portion that follows a CT. It seems genuinely true, on the other hand, that the German CT must be accompanied by a focus. Thus, the natural question is whether the two seemingly contradictory facts can be reconciled. Putting it differently, is it possible to come up with a uniform analysis of both types? Considering that the two types of CTs yield practically the same kind of semantic/pragmatic effects, one might feel uncomfortable of not having a unifying account for both. Such an account may be ideal, but I do not think that it is necessarily so. For instance, my proposal relies crucially on the morphological cue for the 'outside the scope of a speech act' property. There are many languages which are not equipped with such a strategy. Then, we can speculate that the system I propose is not available for those languages that cannot reliably indicate the ultimate wide scope. They may use two distinct accentual/prosodic patterns to elicit the same effects, which may be better analyzed in the way that Büring (1997, 2003) or his competitors (e.g., Krifka 1998) propose.

Finally, the facts concerning embedded CTs enforce me to take a certain position about embedded speech acts. As mentioned in footnote 3, Hara (2006) notes that a CT can be embedded, and that an embedded CT creates an ambiguity with respect to whose point of view the notion of uncertainty is related to. I repeat the example below.

(27) a. [$_{CP}$ MARI-wa/Mari-WA   kita-to]   Erika-ga   sinzite-iru

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ERIka-wa   MAME-o   tabe-ta   (kedo)
Erika-top   beans-acc   eat-past   (but)
'Erika ate beans (but ...)'

The problem is that both of the focalized NPs (*Erika-top* and *Beans-acc*) will have focus indices, and that the indices will be bound off by the closest focus sensitive operator. In other words, (i) would become either a multiple-foci or a multiple-CT sentence. If we have two instances of Exh, one for the focus and the other for the CT, we can appeal to Wold's (1994) idea of Selective Binding between a focus and its operator.

MARI-top/Mari-TOP (CT)   came-C   Erika-nom   believe-pres

b. Erika believes that Mari came, but Erika is not certain whether those other than Mari came.

c. Erika believes that Mari came, but the speaker is not certain whether Erika believes anyone other than Mari came.

Under the proposal presented in this paper, the interpretation (27b), where Erika, the agent of believing, is not certain about the others, has to be derived via pragmatic reasoning on embedded speech acts, rather than matrix ones. Thus, it must be concluded that speech acts can be embedded, as Krifka (2002, 2004) concludes based on phenomena other than the ones discussed here. There are a few encouraging signs for such a direction. First, as Hara (2006) notes, not all embedded sentences can host CTs. In particular, some adjunct sentences like *when-* and *if-*clauses cannot have CTs and relative clauses. Those are kinds of embedded sentences that do not seem to license speech acts within themselves. [11] Second, non-assertive speech act sentences in Japanese are most often marked with particular sentence final particles; *-ka* for a question sentence, *-(y)oo* for an exhortative one, and *-e, -ro* for an imperative one. These particles also show up in embedded sentences. Here is an example of an embedded imperative.

(28)   Syachoo-wa Erika-ni   kinoo-made-ni   kare-hysho-ni   hookolu-si-
        president-top Erika-dat   yesterday-by   him-secretary-dat   report-do
        ro-to   meeree-sita-noni...,
        imp-comp   order-did-but...
        'Although the president ordered Erika to report to his secretary by yesterday,...'

Since the pronoun *kare* in (28) meant to refer to the president and the indexical *kinoo* 'yesterday' points to the day prior to the time of utterance of the entire sentence (not the time of the president ordering, which would make his order impossible to carry out), the embedded sentence should not be considered as a direct quote. The appearance of the imperative marker *-ro* is nonetheless necessary in this sentence.

As I said earlier, this paper is not meant to put an end to the discussion of CTs. It has answered all the questions that we started out with, and I hope to have shown that, as far as those answers are concerned, my proposal does a decent job. We have a set of new questions that emerged from the discussions here, and although it may be

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[11] Of course, those embedded clauses can host CTs when they contain attitude predicates like *think, believe, say,* etc. One interesting fact, also noted in Hara (2006), is that, unlike *when-* or *if-*clauses, *because-*clauses can sometimes contain CTs. This remains as a mystery to our current analysis. See Hara (2006, Chapter 3) for more discussions.

the case that we have more questions than before, I believe, quite optimistically, that it is a sign of progress.

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