

Grammar of Anti-Exhaustivity

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I. Contrastive Topics - Expressions of Incompleteness -

Contrastiveness + Focus = Exhaustivity, Exclusivity, Finality

e.g., overtly contrasting statements ('not A but B'), correcting statements, association with focus with *only/always* etc.

Contrastiveness + Topic = Anti-exhaustivity, Incompleteness, Non-finality, Uncertainty, etc.

e.g., A-/B-accent in English (Bolinger 1965, Jackendoff 1973), Rise-Fall contour in German (Büring 1997, Krifka 1998)

(1) FRED ate BEANs.
B-acc A-acc

(Copied from Büring 2003)



This sentence can be used as a **partial answer** to the question *What did the students eat?*, provided that Fred is one of the relevant students. Crucially, it is not suitable as a full, complete answer to the question *Who ate what?*

(2) a. Alle Politiker sind nicht korrupt. (From Büring 1997)
all politicians are not corrupt
'All politicians are such that they are not corrupt' OR 'Not all politicians are corrupt.'

b. /ALLE Politiker sind NICHT\ korrupt. 📑 Rise - Fall Contour
'Not all politicians are corrupt.'

Why incomplete?

The $\forall > \text{Neg}$ reading would be a final answer to 'How many (of the) politicians are corrupt?'

The $\text{Neg} > \forall$ reading, on the other hand, could lead to such questions as *If not all, are MOST politicians corrupt?* or *Are there any corrupt politicians at all?* This can be characterized as a sense of incompleteness or non-finality.

The strategy in this talk:

1. Use the Japanese Contrastive Topic (CT) Construction as the main empirical phenomenon of investigation.
2. Draw certain conclusions from the Japanese data (which are largely comparable to the Korean CT construction).
3. Leave as an open question how possible cross-linguistic variations can be accommodated.

2. Japanese Contrastive Topics

2.1. Japanese CTs as Expressions of Incompleteness

The Japanese counterpart of the English A-/B-accent example:

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

(3) can be used as a partial answer to *what did the students eat?*

Crucially, the subject NP **must** be marked with **-wa**. If it is replaced by the canonical case marker (i.e., the nominative **-ga**), it is infelicitous in the same context, no matter how you try to manipulate the prosody.

Scope Disambiguation (from Hara 2006):

- (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.'

Unlike the German case, the unmarked (= the canonical nominative) version is unambiguous; the $\forall > \text{neg}$ scope only

The effect of the CT-marking is similar: It results in the **neg** $> \forall$ scope reading, which leaves a sense of non-finality/incompleteness.

See Hara (2006) C.-M. Lee (2006) for more discussions.

2.2. Prosody

★ A Japanese CT gets a focal accent

A high pitch accent followed by radically reduced accent on the following material (Nagahara 1994, Ishihara 2002, 2003 among others).

A typical thematic topic (a 'speaking-of' topic) does not get a focal accent (Nakanishi to appear, C.-M. Lee 2006).

And importantly...

★ A CT can be **the only focalized element** in a sentence (unlike the Rise-Fall contour in German), as pointed out by Hara (2006).

(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.'

2.3. Contrastive Topics and Speech Acts

As far as I can tell, almost all studies of CTs, in 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.

(8) Interrogative

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

(9) Imperative

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

(10) Exhortative

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

(11) Perfomative

Sutoraiki-no-tame, KYOO-wa/kyoo-WA yasumi-to suru
labor strike-gen-due TODAY-top/today/TOPOff day-comp do
'Due to the labor strike, let it be that there be no class TODAY.'

2.4. Topic Morphology

The final piece of the puzzle is perhaps the most obvious: Japanese uses the same morphology for a CT and a **thematic topic** (TT). Apart from the use of the same particle, CTs and TTs do not share many characteristics. Indeed, their differences are more noticeable than their similarities.

- (12)
- 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.

See Heycock (to appear) for the general review on the CT vs. TT comparison.

2.5. Summary

- (13)
- a. CTs induce the sense of incompleteness 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.
 - 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.

In search of the minimal theory of Japanese CTs:

Such an analysis would make use of the semantic contribution of **focal accent** on a CT and combine it with the function of **-wa**. Coupled with some independently needed principles, these two ingredients should be sufficient to derive the effect of incompleteness across speech acts.

3. Contrastive Speech Acts

Hypothesis

1. CTs operate at the level of **Speech Acts**.
2. The effect of incompleteness is generated via a set of **Alternative Speech Acts**.

Some Background Assumptions

Ingredient A: Speech Acts are integrated into syntactic representations (Speech Act Phrases) and compositional interpretations in the semantics component. Krifka (2001, 2002, 2004)

- (14)
- 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 . (e.g., $[[\text{ASSERT}]] \in D_{\langle \text{st}, a \rangle}$)

Ingredient B: 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.

The combination of the two ingredients creates a new possibility



A set of alternative speech acts

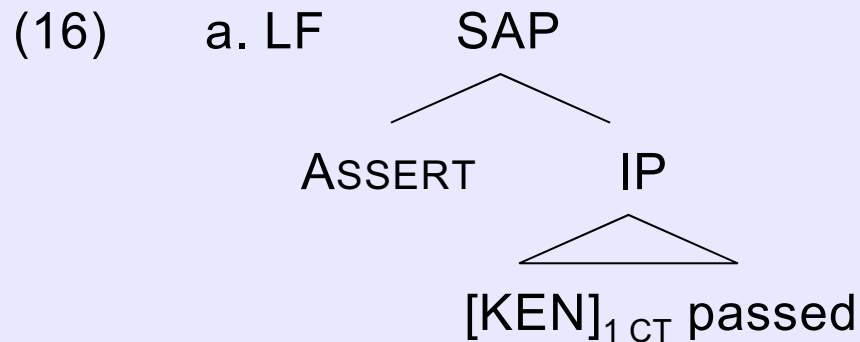
Proposal:

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

(15) means that the appearance of a CT necessarily leads to the existence of a set of alternative speech acts.

(5) A: Who passed?

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



b. The ordinary value of SAP: $\text{ASSERT}(\lambda w. \text{Ken passed in } w)$

c. The focus value of SAP:

$$\begin{aligned} & \{a: \exists x \in D_e. a = \llbracket \text{ASSERT} [\llbracket \text{KEN} \rrbracket_{1 \text{ CT}} \text{ passed}] \rrbracket^{g, h1/x} \} \\ & = \{a: \exists x \in D_e. a = \text{ASSERT}(\lambda w. x \text{ passed in } w)\} \end{aligned}$$

Here, I borrow Beck's (2006) implementation of Kratzer's (1991) theory of focus, which employs focus indices as designated variables.

Context: Ken, Mari, and Erika are under consideration

The set of alternative speech acts: $\{\text{ASSERT}(\lambda w. \text{Ken passed in } w), \text{ASSERT}(\lambda w. \text{Mari passed in } w), \text{ASSERT}(\lambda w. \text{Mari passed in } w)\}$.

From this point on, we make use of a typical rule of conversation:

- (17) a. The speaker asserted that Ken passed.
- b. There are three possible assertion acts that she could have done, but she only did one of them.
- c. There must be a reason for her not carrying out the remaining two acts.

Here are some possible reasons;

- ☞ The speaker does not know whether the other propositions are true or false.
- ☞ The speaker thinks that it is impolite to advertise the failure of Erika and Mari.
- ☞ The speaker is being coy, giving one piece of information at a time.

Other speech acts sentences work more or less the same.

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

- ☞ The speaker does not know whether other subjects are important.
- ☞ Although the speaker is aware that English, math, and natural sciences are equally important for the final outcome, she thinks 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.
- ☞ The speaker is actually convinced that the examinee has no chance of passing and believes that studying English will have more practical advantage in the examiner's future than the other two subjects.

They are all possible reasons for not engaging other imperative acts.

In general...

The use of a CT encourages the hearer to make all sorts of conjectures that would bring about the sense of incompleteness, uncertainty or non-finality.

These conjectures are based on the pragmatic reasoning operated on a given set of alternative speech acts in the context.

We can make some sense out of the morphology (= *-wa*)

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. (Krifka 2001, p.25)

Recall that one of the crucial step in our analysis is:

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

It is no accident that (15) is a part of the CT scheme in the presence of the particle that signals topicality.

Of course, the correspondence between the two types of topics is completely parallel if a CT moves and adjoins a SAP at LF (a possibility that is not entertained in this talk). However, even with the in-situ approach that I am taking in this paper, we can regard *-wa* as an indicator of 'outside the scope of a speech act'. Thus, one of the outstanding puzzle of CTs is explained.

Thus, the new proposal gives a natural account for:

- Abundant appearances of CTs in speech act sentences other than assertions and their pragmatic effects
- The sharing of the same morpheme by a CT and a TT

4. Fine-Tuning the Analysis

The need for further refinement comes from examples like the ones below.

(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.’

Problem: The best translation of these sentences has ‘at least’. They never mean ‘exactly’ (i.e., the statements must be weaker), but we cannot seem to eliminate the ‘exactly’ interpretation.

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

- (18)
- 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 carrying out the other acts.

What would be the reason(s)?

For the first two acts (i.e., $\text{ASSERT}(\lambda w. 1 \text{ person will come in } w)$ and $\text{ASSERT}(\lambda w. 2 \text{ people will come in } w)$)

- ✂ The propositions in those speech acts are entailed by the asserted proposition.

For the rest (i.e., $\text{ASSERT}(\lambda w. 4 \text{ person will come in } w)$ and up)

- ✂ The speakers didn't carry them out because she knows that it would mean that she asserts false propositions.

The result: The speaker must have meant, 'Exactly three people will come.'

But we don't want this result!!

Additional Ingredient: Competition between a CT and a focus.

In the same context as in (6), B could have said (19).

(19) 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, (19) 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 (18):

(18) 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.

Let's go back to our previous reasoning for (6):

For the first two acts (i.e., $\text{ASSERT}(\lambda w. 1 \text{ person will come in } w)$ and $\text{ASSERT}(\lambda w. 2 \text{ people will come in } w)$)

- ✂ The propositions in those speech acts are entailed by the asserted proposition.

For the rest (i.e., $\text{ASSERT}(\lambda w. 4 \text{ person will come in } w)$ and up)

- ✂ The speakers didn't carry them out because she knows that it would be asserting false propositions.

The first reasoning survives, but the second doesn't: If the speaker knew that the rest of the speech acts embed false propositions, then, she would have used the focus counterpart (not the CT version). A more reasonable inference is;

For the rest (i.e., ASSERT(λw . 4 person will come in w) and up)

- ✂ The speakers didn't carry them out because she does not know whether the propositions under ASSERT are true or not.

This reasoning would lead to the 'at least 3' interpretation.

This kind of pragmatic weakening seems obligatory with CT-marked measure phrases.

Prediction 1: This pragmatic reasoning is not obligatory when there is no competition between a CT and a focus.

(20) A: Did both Ken and Erika pass the exam?

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

B's utterance in (20) can **but does not have to** undergo the same kind of weakening we saw above; the hearer is invited to entertain the possibility that the speaker does know that Erika didn't pass but didn't explicitly say that she didn't.

Why does this strong conjecture survive? The reason is that avoiding a CT in this particular context is not an option. If you replace *wa* with *ga*, the sentence becomes infelicitous.

(21) A: Did both Ken and Erika pass the exam?

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

Prediction 2: When the CT meaning and the focus meaning are indistinguishable, the use of CT is prohibited.

- (22) #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}
- (24) a. The CT-marking on *minna* 'all' 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.

At this point, we can safely say that there is one (and most likely only one) reason.

The speaker didn't assert that no one came because it would be an assertion of a false proposition. She didn't assert the rest because the embedded propositions are entailed by 'all people came' and hence weaker than it.

However, this same reasoning should apply to the case where *minna* 'all people' is focused.

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

But we are supposed to have the following in our reasoning.

d. There also must be a reason for the speaker's choosing a CT over its focus counterpart (*-ga* instead of *-wa*).

Since we cannot find a reason for it, the use of CT in this kind of example is infelicitous.

5. More Speculations and Further Issues

5.1. (Anti-)Exhaustivity in Syntax

The origin of exhaustivity implicature (e.g., the strong meaning of a disjunction) is the presence of Exh (the exhaustivity operator) in syntax. (Fox 2006: See also Groenendijk and Stokhof 1984, Chierchia 2004 among others).

$$(26) \quad \llbracket \text{Exh} \rrbracket (A_{\langle \text{st}, \text{t} \rangle})(p_{\text{st}})(w) = p(w) \ \& \ \forall q \in \text{NW}(p, A): \neg q(w)$$

$A_{\langle \text{st}, \text{t} \rangle}$ = a set of (Scalar) alternatives

$\text{NW}(p, A)$ = a set of alternatives that are not weaker than p

Fox's discussion centers around the Scalar implicature of a disjunction and other Scalar items, this exhaustivity operator can, in principle, be responsible for the exhaustivity implicature associated with focusing.

But wait a minute! *Exh* says ‘the ordinary value, yes, the other alternatives, no.’ That is precisely what is happening with a CT at the Speech Act level.

(5) A: Who passed?

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

- (27) a. The set of alternatives: {ASSERT(λw . Ken passed in w),
 ASSERT(λw . Mari passed in w), ASSERT(λw . Mari passed in w)}
- b. Among the three possible assertion acts, the speaker *engaged in the ordinary value* (ASSERT(λw . Ken passed in w)) *but not in the others.* ☞ This is exactly like *Exh*!

So, perhaps there is a speech-act version of *Exh* (an informal try at this point):

$\llbracket \text{Exh}_a \rrbracket (\{a: a \in A\})(S_a)(sp) = sp \text{ carries out } S \ \& \ \forall S' \in \text{Alt}(S, A): sp \text{ refrains from carrying out } S'$.

Then, a CT and a focus go through basically the same process (i.e, *Exh*). The only difference is the scope of *Exh*: It is either **below** (a focus) or **above** (a CT) the speech act level.

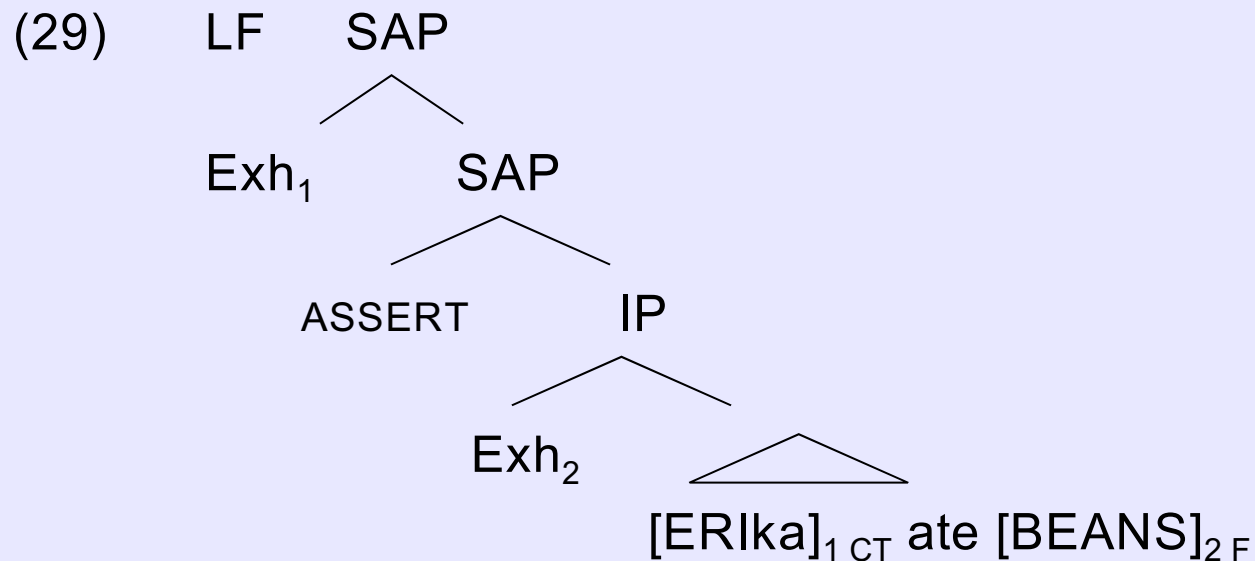
There are two advantages, one conceptual and the other empirical.

1. A focal accent evokes a set of alternatives, and once you generate such a set, you **must** use it. The default option is to associate it with *Exh*, whether a focal accent falls onto a topic or a garden-variety focus.

2. It is necessary to have some kind of operator that selectively binds the designated variable that corresponds to a CT.

(28) What did the students eat?

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



The binding has to be selective. Otherwise, when we compute the focus value of the IP, the abstraction process I sketched in (19c) accidentally turn both occurrences of focus indices into designated variables.

I assume that the kind of system that Word (1996) envisioned for nested foci would be useful.

5.2. Embedded Speech Acts

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.

- (30) 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.

Under the proposal presented in this paper, the interpretation (33b), 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, which Krifka (2002, 2004) conclude from phenomena other than the ones discussed here.

There are a few encouraging signs for such a move:

1. Hara (2006) notes that not all embedded sentences can host CTs. In particular, some adjunct sentences like *when-* and *if-*clauses and relative clauses cannot host CTs.
2. In Japanese and Korean at least, the same Speech Act particles appear when the sentences are embedded.

(31) Syachoo-wa Erika-ni kinoo-made-ni kare-no-hysho-ni
president-top Erika-dat yesterday-by his-secretary-dat

hookoku-si- **ro**-to meeree-sita-noni...,
report-do- **IMP**-comp order-did-but...

‘Although the president ordered Erika to report to his secretary by
yesterday,...’

The use of the indexical *yesterday* and that of the third person pronoun *kare* indicate that the embedded clause is not a direct quote.

The embedding of Speech Act particles is robust; -(y)oo for exhortatives and -ka for interrogatives.

5.3. Cross-linguistic Variations

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.

It seems genuinely true, on the other hand, that the German CT must be accompanied by a focus.

Is it possible (and therefore preferable) to have a uniform analysis of both types of CTs? OR

Should we settle with two distinct CT strategies that somehow arrive at the same kind of pragmatic effect?

My current inclination is to say yes to the second hypothesis.

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.

Such languages 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.

Appendix: Comparison to Other Approaches

Büiring (1997, 2003): Requires 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.

- (32)
- 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 Büiring (1997), the Disputability Condition provides that the ordinary value of the sentence not answer all the questions in the topic value. In Büiring (2003), the utterance context of the sentence must furnish one of the questions as a discourse topic.

But Japanese CTs do not require any additional focalization. (See Section 2.2)

Büring's account also fails to generate the embedded CT reading (e.g., (30b) above).

Hara (2006): Based on the knowledge state of the speaker.

- (33) 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 at least one 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 propositions are possibly false.

- Works well in assertions, but unclear how one can rely on the notion of 'knowledge state' for other speech act sentences.
- The scalar presupposition above (33b) is dispensable with the notion of competition between focus and CT (however, this idea is exploited in Hara's Chapter 2, Section 7.3)
- The conventional implicature (33c) can be replaced by more general Gricean reasoning on alternative speech acts.
- No obvious relation between the CT *-wa* and the TT *-wa*.

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