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CONTRASTIVE (PREDICATE) TOPIC, INTONATION, AND SCALAR MEANINGS

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1. INTRODUCTION

In this chapter I will consider Contrastive Topic (CT), Contrastive Predicate Topic (CPT) and Focus in information structure and their relations to intonation and meaning, as I have attempted to account for in a series of papers on related topics¹. Particularly, I will try to see the conventional scalar implicature meanings triggered by CPT and CT in connection with its intonation. In dealing with those phenomena, I will use data extensively from Korean, where CT is surprisingly clearly marked morphologically and intonationally, in comparison with data from English.

Information structure, claimed to constitute a separate component from phonological, syntactic and semantic components (Vallduvi 1992), consists basically of Topic – Comment or Background – Focus information. Apart from whether it constitutes a separate component in grammar, no one can deny that it is closely interwoven with morphological structure (particularly in Korean and Japanese), syntactic linear and hierarchical structure, semantic structure, and prosodic phonological structure. That is why we came to organize the present workshop and create a volume on Topic and Focus in connection with their meaning and intonation. Recently the phenomenon of CT in particular has been well characterised. Through this kind of common efforts we believe we can deepen our understanding of underlying principles governing related issues cross-linguistically.

The organization of the chapter is as follows: In 2 Contrastive Topic is distinguished from non-contrastive Topic and from list contrastive topics, which do not leave implicature; CT is examined in a dialogue model and the notion of sum considered; Korean CT is shown on pitch tracks. In 3 scalar meanings are analyzed; type-subtype scalarity and subtype scalarity are distinguished and CT's inherent tendency of subtype scalarity even in entities is advocated. In 4 scope relations between scope bearers and CT and CT's narrow-scope nature is discussed, together with non-narrow-scope topicalization effect. In 5 Contrastive Predicate Topic and the scope relation between CT and REASON clause are explored. 6 concludes the chapter.

2. ASPECTS OF CONTRASTIVE TOPIC

2.1. Topic

We can view an utterance from a Topic perspective and get a Topic – Comment structure, as follows (Topic here being a non-contrastive Topic):

- (1) [Water]_{Topic} [consists of oxygen and hydrogen]_{Comment}.
- (2) [kumsok hwalca-nun]_{Topic} [hankwukin-i palmyenghay-ss-ta]_{Comment}.
metal type -TOP Koreans-NOM invent-PAST-DEC
'As for the metallic type, Koreans invented it.'
- (3) Inswu -nun soseol chayk -ul sa-ss-e-yo
-TOP novel book-ACC buy-PAST-DEC(POLITE)
'Inswu bought a novel.' (to the question "What did Inswu buy?")

Typically, a non-contrastive Topic is given, presupposed, or anchored in the speech situation. It is something that is talked about by the Comment (or often predicate) and lacks contrastiveness and is located at the initial, prominent position of a sentence, with *-nun* (Korean) or *-wa* (Japanese) marking, though a null Topic or bare nominal Topic without a Topic marker is possible, unaccented. The natural kind in (1) and the artifact kind in (2) from an underlying object, as nominals in common ground, both quantificational and proper name-like (though not placed in Prince's 1989 or Gundel *et al*'s familiarity or givenness hierarchies), as well as the previously mentioned proper name in (3), function as Topics, being talked about by the following Comment. The notion of unmarked, non-contrastive Topic is psychologically and theoretically real, basically based on categorical or double (as opposed to thetic) judgment (Kuroda 1972, Brentano 1973, Marty 1918, Ladusaw 2000). The structure of Topic – Comment is most natural in information and discourse structure. Thus, Roberts' (1997) pessimism about the theoretical status of Topic in information structure, and Buring's (2003) exclusion of non-contrastive Topic as a category in information structure, largely based on English, are not tenable. Jackendoff (1972) failed to provide any intonational status for a non-contrastive Topic, although Steedman (2000) assigned L to it. But Topic is a basic category just like Focus. Null Topics in various languages have no phonetic (or prosodic) manifestation but are conceptually real for propositional semantic interpretations. CT is marked in meaning and intonation, constituting a complex category, and therefore came to draw wide attention rather recently.

First, the intonation pattern of (3), a Topic sentence, is distinct in pitch and energy concentration, as in (Fig.1). This is a typical sentential intonation (IntP=IP) in Korean, with a Topic and a preverbal Focus. The Focus constituent, answering a previous *wh*-word, is informative (via intercategory entailment (Zuber 2002) and existential closure (Scharzschild 1999 and Karttunen 1977)). The non-constituent 'Inswu bought' is given and relatively low in pitch compared to the Focus

constituent in the middle and *Inswu-nun* in the given is a Topic phrase. The 200 *mh* peak comes on *a novel* at the end of the corresponding SVO English *S Sam bought a novel*. Observe the intonation pattern of a Topic sentence in Korean in Fig. 1:

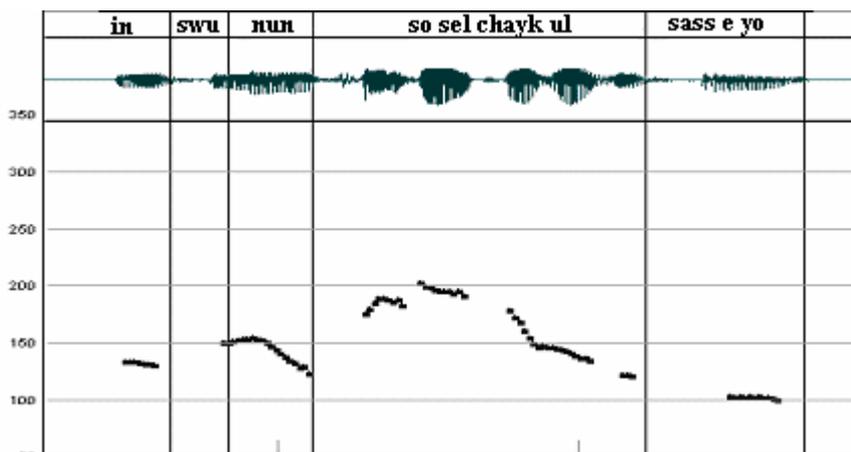


Figure 1 Non-contrastive Topic

We will shortly see how the above Topic intonation is sharply distinct from the CT intonation shown in Figure 2.

2.2. The Nature of Contrastive Topic

Contrastive Topic, on the other hand, is also given, presupposed, or anchored in the speech situation to a certain degree like a non-contrastive Topic. It is controversial whether it is also something that is talked about; Hetland (2003), for instance, does not agree that those CT instances derived from predicate positions meet the aboutness condition of Topic and calls them simply “Contrasts” like some other linguists. CT necessarily shows contrastiveness and is located typically in the middle or some times at the initial position of a sentence, with morphological markers *-nun* (Korean), *-wa* (Japanese), *thi* (Vietnamese) or *nan* (Thai), together with a high tone, or with a contrastive contour alone such as B accent (L+H%LH%) (English). CT is distinct from unmarked, non-contrastive Topic but some linguists (Jackendoff partly, Buring’s earlier works (though his 2003 adopts the term “Contrastive Topic” in general for the first time) and Steedman (2000), etc.) confusingly label it as Topic (or variously as S-Topic) or Theme (though Steedman (in this volume) began to incorporate *kontrast*). On the other hand, some syntacticians call it contrastive focus (CF). I will address the distinction between CT and CF briefly later. “CT” is basically used to mark Contrastive Topic in logical form but here it will be used as abbreviation of Contrastive Topic as well for convenience.

People often tend to forget that Jackendoff's (1972) dialogue examples of A accents and B accents are situated in a context of a given number of people eating a given number of different foods. Sums (pluralities and mass-partitions with join semilattices) are involved and they or their parts function as potential Topics or CTs in the relevant question for a CT answer. Therefore, when the speaker asks about FRED in (4), HE in the second sentence cannot be assigned a pure Focus as done by Kadmon (2001: 392) (with her 'Larry_{FF}').

- (4) A: Well, what about FRED? What did HE eat?
 B: FRED_B ate the BEANS_A. (Jackendoff 1972)

Here *HE* must be marked CT (or Topic), not F, however its intonation may be modified in the English question sentence (the fall-rise accent remains in an echo question (O'Connor *et al* 1973, Hetland 2003; in Hungarian a CT in a question is reported in Molnar 1998). It is one of those people in the context and was mentioned or accommodated in the previous question sentence, thus being in the background as given. If Focus is assigned, because of the preceding focal *wh*-word, the sentence becomes a reclamatory question such as (5):

- (5) *What* did you say HE_F ate?

Similarly, *MARY* in (6), with alternative individuals in the speaker's mind, *i.e.* CT-alternatives, not Focus alternatives must be marked CT, not F, contra Krifka (2003).

- (6) What did John give MARY_{CT} as a birthday present? P.c.

A multi-*wh* question (such as *Who ate what?* or *Who kissed who?*), appearing on the top of discourse tree structures (Carlson 1983, Roberts 1995, Buring 2003) typically requires a multi-narrow focus answer such as 'FRED_A ate the BEANS_A' or 'Larry_A kissed Nina_A (often a reciprocal alternative question), as an exhaustive answer, a pair-list answer, etc. (cf. Krifka 2002). This will get the following dual focal value, which Buring himself employed to criticize Roberts' (1995) characterization of CT as a set of propositions:

- (7) {x ate y | x, y ∈ D_e}

In other words, immediate daughters of the top multi-*wh* question are not warranted to get a person or food in them. CT utterances cannot be felicitously at the beginning of a discourse and they cannot be felicitously preceded by a multi-*wh* question abruptly. There must be an appropriate way of introducing a topical element in the question (Kadmon 2001 also criticized this point; see Krifka in this volume for a structural account) and at least a D-linked *wh*-question may have to be given such as *Which person ate what* for a subject CT question-answer (*What did Fred (and Sam) eat?*-Fred_{CT} ate the beans) and *Who ate which food* for an object CT question-answer daughters for real congruence in the tree. Otherwise, the derivation is arbitrary and unpredictable, ignoring which element is previously given. Thus, a CT

is ‘about’ a given part in the previous discourse and locally ‘about’ the rest of the CT sentence. Hence it is topical. A CT is selection of one or part of the potential sum Topic denotations and focal in this local sense in the given potential Topic. In the multi-foci case in Korean, the Nominative marker *-ka* and the Accusative marker *-rul* but not the Topic marker *-nun* is employed (Lee 1999). The given or accommodated part as a potential Topic of the previous discourse context must be present to represent an appropriate CT (below in the tree), as something like *FRED/HE* in (4A). In Korean, a CT occurring in a question sentence has a tone lower than a CT in a declarative S. The most natural and relevant question that precedes a CT answer should include a potential Topic of a sum of individuals of $\langle e \rangle$ type or properties of $\langle e, t \rangle$ type.

Buring’s claim, on the other hand, that his proposed CT-value is rather a set of sets of propositions against Roberts’ (1995) ‘a set of propositions’ (Kadmon 2001 also criticizes this) is surely an improvement. The CT-value of (4B), then, should be:

$$(8) \{ \{ x \text{ ate } y \mid y \in D_e \} \mid x \in D_e \} = \{ \{ \text{Fred ate the beans, Fred ate the peanuts, Fred ate the eggplant} \} \{ \text{Sam ate the beans, Sam ate the peanuts, Sam ate the eggplant} \} \{ \text{Mary ate the beans, Mary ate the peanuts, Mary ate the eggplant} \} \} \text{(The variables can be equivalently bound by } \lambda \text{ operator).}$$

In each subset above, the subject happens to be fixed and functions as Topic for alternative objects – foods. The choice of one of the alternative foods, i.e. *the beans* here, is marked Focus at the outset because it is not relativized any further, being exhaustive. The choice of one Topic from the alternative Topics – persons, i.e. *Fred* here, is focal. The would-be Topic is relativized to become a CT, involving a focal process. In this sense, CT is both topical and focal, but because of its Topic base, the head of the term Contrastive Topic is Topic, not Focus, as in Contrastive Focus. Focus does not have a Topic base. Furthermore, Contrastive Topic is more marked than Topic in its term and content. Kadmon (2000) rightly criticized this CT-value approach for relying too much on Focus-value approach. The invariance of an element in one subset, however, suggests its topic-hood. If it had not a superset, it would be a non-contrastive Topic. There would not be a choice involved.

2.2. List contrastive topics

A serious problem about the above and its corresponding D-tree approach by Buring (2003) is that it is partly good only for the phenomenon of “list contrastive topics” (Lee 2000), when the exhaustive list of all the contrastive topics that constitute a big Topic is uttered. But, then, the intonations for these listed contrastive topics are not proper CT contours (L+H*LH%, roughly B accent or fall-rise) except in the topicalized, initial position. Note that people do not accept (9) and (10) but accept (11) and (12).

$$(9) \text{ *Fred ate the BEANS but Sam ate the PEANUTS.}$$

$$\text{L+H*LH\%} \qquad \qquad \text{L+H*LH\%}$$

2.3. Contrastive Topic in Korean: Intonation

CT in Korean remarkably shares a great deal of features witnessed in English. First, a typical CT with implicature requires the topic marker *-nun* and a high tone ((L)H*). The topic marker *-nun* is shared by a non-contrastive Topic, as we have seen. Second, list contrastive topics do not show a high tone required for a typical CT, although it is marked by the same topic marker *-nun*. Let us first observe how sharply a CT contour in Fig. 2 is distinguished from the non-contrastive Topic pitch in Fig. 1.

- (14) (After hearing that Inho didn't come, regarding his friend Yengswu)
 Yengswu-nun w-ass-e
 -CT come-PAST-DEC
 'Yengswu_{CT} came.'

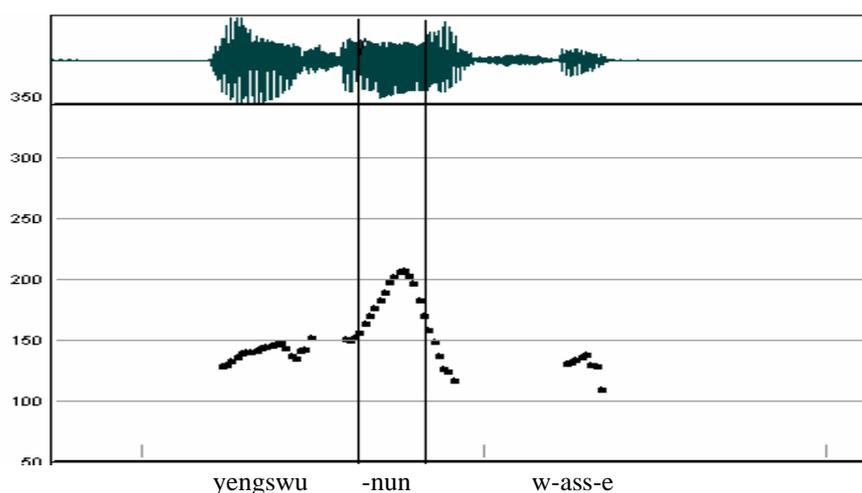


Figure 2 Contrastive Topic

There is a sharp difference in pitch height between the Topic *-nun* (Fig. 1) (150 hz) and the CT *-nun* (Fig. 2) (over 200 hz). This is why I described the CT *-nun* phrase as (L)H*(%). There occurs a direct rise from L on the final syllable of the nominal or other lexical constituent (CT target) to the CT marker *-nun*, a non-lexical function element, unlike in Indo-European languages (C. Lee 2000). This implies that contrastive accent and contour in Korean and English is different from other focus accents. In Japanese, according to Nakanishi (in this volume), a CT marker *wa* from Subject in initial position does not seem to be high, but mid-sentential CT *wa* is high in tone according to my fieldwork. The marker *-nun* shows phrasal boundaries, those of Intonational Phrase (IntP) or Accentual Phrase (AP)². In

naturally occurring speeches, non-contrastive Topic and list Topic are so low in pitch that marking H indiscriminately on their S-initial *-nun* in Jun's (1998) K-ToBI may have to be reconsidered, despite the tendency of LHLH AP in Korean. Because of the phrase-final rise, CT has nothing to do with dephrasing effect witnessed in (non-phrase-final) Focus elements (Jun 1993). Therefore, Focus may follow it. Dephrasing is analogous to de-accenting in English (Pierrehumbert 1980), e.g. Q: Who did Anna marry? A: (*Anna married*) *MANNY*_{H*LL%}. Because of the following Focus, backward deaccenting occurs and no pitch accent or boundary is marked on the string of the non-contrastive Topic and the verb in the background (a non-contrastive Topic given in Korean is similar, as in Fig. 1). Typologically, in Italian and Romanian given information is not de-accented, contrastively focused elements already lacking accent (Ladd 1996). CT *-nun* is also the longest in duration among different phrase final elements. In contrast to the high pitch of the above typical CT, observe the low pitches of the list contrastive topics in Fig. 3.

- (15) A: ai-tul-un myet haknyen -i-ci-yo
 children-TOP what grade -be-POLITE
 'What grades are your children in?'
 B. kun ay nun sa-haknyen-i-ko cakun ay nun i-haknyen-i-ey-yo
 older one-ct 4th grade-be-and younger one 2nd grade-be-POLITE
 'The older one is in 4th grade and the younger one is in 2nd grade.'

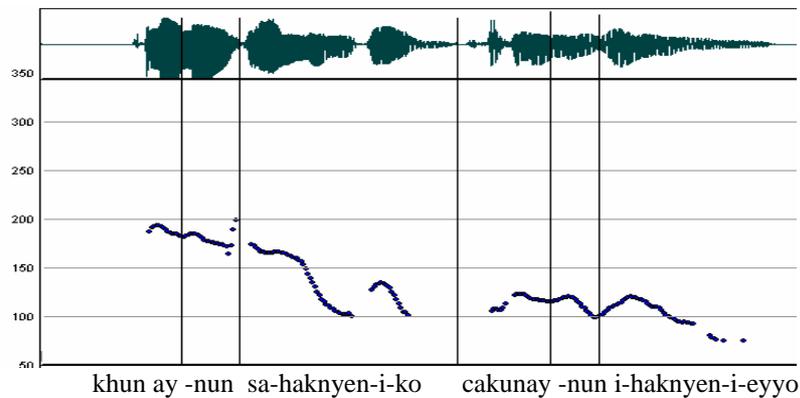


Figure 3. List contrastive topics

2.4 Contrastive Topic to be Preceded by Potential Topic of Sum

The crucial requirement of CT is that potential Topic of sum must precede or be assumed to precede it. If a sum is impossible, an entailing stronger element cannot be marked CT. Consider:

(16) A: Did she give birth to a baby?

B: Yes, she got a daughter_F.

B': #She got a daughter_{CT}.

In a join semilattice, a (local) top type is entailed by its lower types in the ontological type/sort hierarchy, and thus 'given' (Schwarzschild (1999) by the latter if a lower type element occurs first, e.g. male/female→gendered, gorilla/monkey→animal. Likewise, daughter/son→offspring (baby) but we cannot get the idea of sum in the situation of 'giving birth to a baby' in (16A). Therefore, a stronger *daughter* is informative and can be not CT-marked but F-marked or CF-marked (to be discussed shortly) because an assumed intervening direct question is an alternative disjunctive question, 'If yes, is it a daughter or son?' If the question is (17A), we can get the notion of sum in *children* (or *babies*) and hence B.

(17) A: Do you have children?

B: I have sons_{CT}.

If B's answer is 'Yes, I have sons_F,' then it is exhaustive (but still can have the conversational implicature of 'but I don't have daughters' from the context. Once (17B) is uttered, it by default evokes a scalar implicature and I say it is conventional because it has a special fall-rise pitch contour and is not readily cancellable without epistemic contradiction. Even an explicitly asserted proposition may at times be cancelled in a very roundabout way, with hedges and corrections. A conventional implicature may not be an exception to this kind of roundabout situation. The implicature of (17B) may initially be scalar with something like 'But I don't have daughters and I am not totally satisfied with this,' tending to give more weight to 'daughters' on a pragmatically evoked scale. In a boy preference society, B's answer, *I have daughters_{CT}* may evoke a reversed scale of {daughter < son}.

Often a question is used indirectly to induce the hearer's response on his/her possible involvement in the event in question. For instance, 'Who hit Mary?' Then, 'someone hit Mary' is derived as presupposition via existential closure of the interrogative (Karttunen 1977) such that $\lambda p \exists x [p \ \& \ p = \text{hit}(x, m)]$. Next, a question, "Did you and other people hit Mary?" is accommodated and *I_{CT} didn't hit her* is naturally interpreted; here, *I* has more weight than *other people* (Lee 2003).

3. SCALAR MEANINGS

3.1. Subtype Scalarity

A 'coin/bill→money' situation (Lee 1999) evokes clearer scales. Although 'money' is a mass term, it can be partitioned into two equivalence classes: coins and bills. When asked, 'Do you have money?'" A sum idea can be evoked because having both coins and bills at the same time is all right unlike in the 'baby birth' situation and a

typical answer can be (17a) on a contextual scale of <coins, bills> (bills with greater weight) (in this situation (17b) is infelicitous), but in a very special context, e.g. getting on a bus, (17b) is possible, in an opposite scale <bills, coins> (coins with greater weight).

- (17) a. I have coins_{CT}.
 b. I have bills_{CT}.

My claim, then, is stronger than previous accounts in that scales are dually evoked in my account, first by the semantic relations of atom – sum, member – set, subset – superset, and subtype – type, and secondly by pragmatic ordering relations between alternative parts, *i.e.* atoms, members, subsets, and subtype elements, of larger units or wholes in the query, when individuals are discussed, as exemplified above ({coins < bills}, {daughter < son}). In other words, it is not a simple ordering of *money – coin, baby – daughter* as values in a basic scale ordered by a relation between type in the query and subtype in the reply. When the query is by sum and the reply is by subset or atom, the reply is not enough and generates the implicature of ‘not sum’ but the reply has affirmed the subset or atom already and it leads to ‘not the rest or its relevant part’ even conversationally without fall-rise. This kind of relation has been well explored by Ward and Hirschberg (1985), although they characterised fall-rise as implicating “uncertainty,” which is general and somewhat vague but was called “conventional implicature.” They defined scale by poset (partially ordered set) and included in it hierarchical and linear orderings such as spatial or temporal orderings, stages of a process, and relationships of type/subtype, or part-whole, in addition to Ladd’s (1980) hierarchical sets ordered from root to leaf. They give a ‘is a part of’ relation by dissertation - first chapter - first half. They also provide a symmetric relation ‘cousin of’ creating oddness in fall-rise. One conjunct cannot be denied, with the other being affirmed, in ‘I am John’s cousin and he is mine’ in my account. Consider their example:

- (18) A: Are you John’s cousin?
 B: #He’s \ mine/.

The same kind of relation, which may be termed as an abstract LARGER THAN relation, holds in Topic formation: the Topic denotation must be LARGER THAN its parts and the parts again are ordered in the same way LARGER first in the multiple nominative/accusative case construction and only the largest can be Topic (Lee 1989, 1994?). In (19), where ‘elephants’ are larger than their parts ‘noses’ and comes first, forming a Topic, as in (a), and if the part nominal ‘noses’ takes a topic marker it comes to function as a CT, as in (b), implicating ‘but not other parts’ or ‘but they do not smell well.’ If the Topic marker in the initial position is replaced by the nominative marker, the nominal is focused, as in (c).

- (19) a. khokkiri-nun kho-ka kil-ta
 elephant-TOP nose-NOM long-DEC
 ‘(As for) Elephants, their noses are long.’

- b. khokkiri-nun kho-**nun** kil-ta
 elephan -TOP nose -CT long-DEC
 ‘(As for) Elephants, their noses are long but ---.’
- c. khokkiri-ka kho-ka kil-ta
 elephant-NOM(FOC) nose-NOM long-DEC
 ‘It is elephants whose noses are long.’

My further claim is that the lower line sister alternatives in hierarchies may typically form scales in CT. A typical CT with an appropriate contour evokes a scalar implicature conventionally by default but a list alternatives reading may be forced by certain nominals in certain contexts. Consider further examples by them:

- (20) A: Is she taking any medication?
 B: \ Vi/tamines.
- (21) A: Are you a doctor?
 B: I have a Ph. \ D/.

In (20B) a stronger kind of medication is denied and in (21) ‘a medical doctor,’ which has more weight on that particular pragmatic scale, may be denied. fn Note that Ladd’s (1980) following example shows that there is a whole-part (poset) relation between the locations in (A) and (B), unlike in (A) and (C). B does not agree, denying the wider range, whereas C agrees with A’s claim strongly, leaving no room for skepticism. .

- (22) A: Harry’s the biggest fool in the state of New York.
 B: In ITHACA_{CT}, maybe.
 C: In THE WHOLE WORLD_F, maybe.

Consider van Rooy’s (2002) example of scalar interpretation of nominals. He does not introduce fall-rise here.

- (23) Q: Which Beatle’s autograph do you have?
 A: George Harrison’s.
 ~> ¬John Lennon’s, though ◇Ringo Star’s
 “Standard” partition: 4 Beatles ~> 16 cells.
 Autographic prestige:
 Star < Harrison < {Lennon, McCartney}

Van Rooy does not distinguish between a semantic scale arising from the hierarchy of the sum of Beatles’ autographs (this must be posited in the assumed query preceding (19Q)) and the individual Beatles’ autographs and a pragmatic scale arising from different weights among different alternative Beatles. He addresses the latter type of scale. Without any CT contour on (22A), it may have an exhaustive interpretation with “standard” partition and list reading, evoking no particular scale among alternative Beatles. Herburger (2000) also indicates that “When a fall contour

on free focus is changed to fall-rise, a resulting “at least” interpretation undermines the exhaustivity of focus.” Alternatively, it can have a conversational scalar implicature shown above, based on the given prestige scale in the context. If we use the Contrastive (fall-rise) Contour on the answer “George Harrison’s,” preferably with the question ‘Do you have John Lennon’s autograph?’ the scalar implicature is unmistakable and because of the linguistic device used (a contrastive pitch contour in English or a morpheme + a high tone in Korean) it is a conventional implicature. Even without this contour or morpheme, the answer can have a conversational implicature, depending on contexts or can be free of it, exhaustively interpreted. Evolutionarily, those particular prosodic or morphological devices seem to have come to regularly license fairly predictable Contrastive Topic meanings associated with them from relevant contexts. The unuttered meanings of Contrastive Topic developed from conversational implicatures arising without such special devices and still co-exist with them. In a nutshell, Contrastive Topic is employed to convey this kind of implicature, concessively admitting the uttered proposition.

What happens when an answer is uttered negatively with a CT? Let us consider the following dialogue situation: The potential Topic of sum is given in the query (Q) and the answer (A) is negatively uttered with a CT *John Lennon’s*, which may be located highest in a scale of prestige. This pragmatic scale may be the speaker’s presupposition or accommodated by the hearer’s scalar reply.

- (24) Q. Do you have Beatles’ autographs?
A. I don’t have John Lennon’s *CT*.

Then, its conventional implicature is polarity reversed, *i.e.* affirmative but the value of weight not higher than the given value but lower than it. Therefore, the implicature in the given context turns out to be “But I have other Beatles’ (weaker than John Lennon in the scale of prestige) autographs.” Often the context is limited than this, *e.g.* the speaker knows whether the hearer has Lennon’s and McCartney’s and he/she knows that the hearer knows the speaker’s knowing of the fact and asks, “Do you have Harrison’s autograph?” The reply is “I don’t have Harrison’s *CT*.” Then the relevant value element is the lower one: Harrison’s, generating the implicature of “I don’t have Star’s.” This is the opposite of what happened in (24), where an affirmative CT reply is uttered.

Now a generalization follows: if a sentence with a CT is uttered (as a reply), contrastively (“but”) a polarity-reversed proposition with an alternative value greater, if the reply is positive, and less, if the reply is negative, than the CT denotation, in the pragmatic scale.

Next, let us turn to what kinds of categories can be marked CT. In Korean (and presumably crosslinguistically), basically most categories may be marked CT including adverbs. In Korean, however, prenominal quantifying Determiners such as *motun* ‘all’ cannot be marked CT, unlike in English. Instead, their adverbial forms (*motu*, *ta* ‘all’) can. In (25), an adverb *cal* ‘well’ has been marked CT and a very high tone far over 200 *hz* is noticed in Fig. 5. (25) is negative and an affirmative

proposition with a weaker value than ‘well’ in the scale is implicated, such as ‘but I know a little bit.’ This is sharply distinguished from an utterance without CT-marking: *cal molla* ‘I don’t know it well,’ ‘I am not quite sure,’ which can be used when the speaker knows (almost) nothing about it. Chierchia (2002) discusses a similar, interesting point but does not have the idea of CT at all when it is required. Observe:

- (25) cal -**un** moll-a
 well -CT no-know-DEC
 ‘(I) don’t know (it) well_{CT}.’

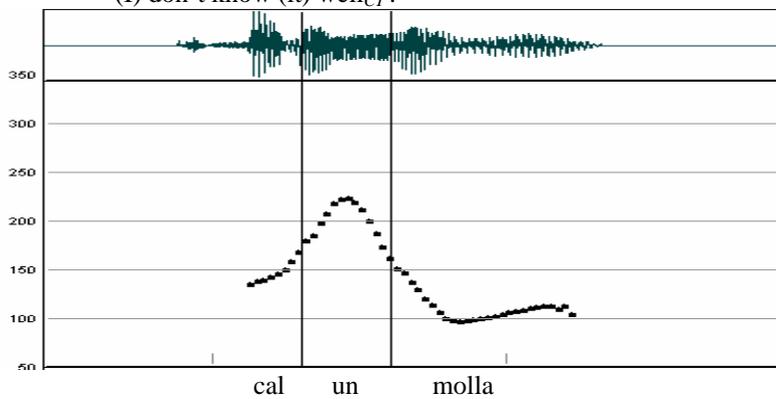


Figure 5. Adverb CT

Nominals in all grammatical relations or positions take CT in Korean including object CT, as in (26) and Fig. 6. An object CT fronted to the initial position of a sentence tends to be more topical passively with wide scope than that *in situ*.

- (26) . sakwa -**nun** mek -ess- eyo
 apple -CT eat-PAST-DEC
 ‘(I) ate apples.’ (with a null Topic) -

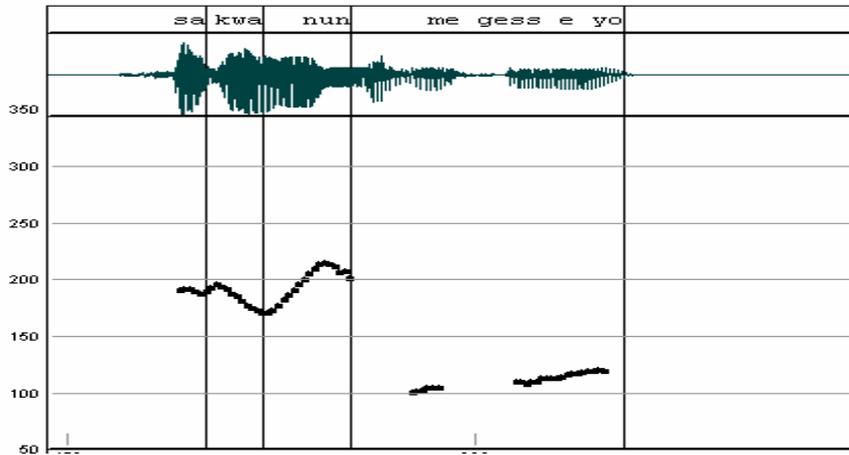


Figure 6. Object CT

Nominals with the Possessive marker *-uy* following cannot take the CT marker neither after the nominals nor after *-uy*. Only predicatively used categories can take CT (introducing the Nominalizer *-ki* in the prenominal modifier position, e.g. *yeyppu-ki-nun ha-n sonye* ‘A pretty_{CT} girl.’ A postpositional phrase of DP + P takes the CT marker after P but not after DP. *Ku ai-nun [cip’house’-eyse’at’-nun] nul wu-n-ta* ‘That child cries always at home.’ Contrastive Predicate Topic will be discussed shortly. Hedberg’s (2003) example *He hasn’t (H*) done anything (L+H*) extraordinary. (L+H* LH%) [4/27/01]* shows a modifier CT in a negative sentence and evokes an affirmative implicature with a lower value such as he may have done something ordinary. Its correspondence in Korean gets CT-marking with *-nun* on the nominal *kes* ‘thing,’ but the CT-marking is associated with the modifier *thekpyeha-n* triggers its alternatives. This is a CT and it seems that she departed from assigning a “Contrastive Focus” to this fall-rise case (Hedberg *et al* in this volume).

Let us further consider what types of sentences license CT in general. A simple declarative sentence is a typical type and an interrogative sentence in Korean is another. I demonstrated elsewhere (Lee 2002, etc) that in most languages CT is licensed in relative and subordinate clauses, though restrictively crosslinguistically, but that occurrence of non-contrastive Topic is impossible in Korean because the relative clause head nominal comes through Topic in the relative clause during relativization (Lee 1973) (and in Japanese as well). Complement clauses license CT in them easily crosslinguistically, as in (27b).

- (27) a. John knows a song that MARY_{CT} sings well (from Subject)
 b. John knows that MARY_{CT} sings the song well.

In Korean, a whole complement clause can take CT before a main clause attitude or communication verb and it can be focally associated with either the predicate

(preferred) or the subject of the complement clause. Because (28) is negative, an affirmative proposition with a weaker predicate in the scale than the complement predicate ‘right’ is conventionally implicated. Observe:

- (28) Yumi-nun ku-ka olh -ta -ko -**nun** po-ci anh-nun-ta
 -TOP he-NOM right-DEC-COMP-CT think not
 ‘Yumi does not think [that he is right]_{CT}.’

The contrastively implicated proposition may be ‘But Yumi thinks that he’s got a point.’

Crosslinguistically, in English, German, and Korean, the pitch accent for (information) Focus, H*(L), is distinct from the one for CT, roughly (L(+))H*(-), whereas in Finnish and Norwegian, Focus and CT are not so distinct prosodically (Vallduví and Vilkuna (1998:89), Fretheim (1992), Gundel (2002)).

4. CONTRASTIVE TOPIC AS A NARROW-SCOPE-BEARER?

In Korean, CT-marked universal quantifiers, universally quantifying time, degree and frequency adverbials as well as positively quantifying adverbials such as ‘often’(*cacu-nun*), ‘much/many’ (*manhi-nun*) always take narrow-scope over negation. Observe:

- (29) ta **nun** an mek-ess-e
 all -CT not eat-PAST-DEC
 ‘(I) didn’t eat all.’
 (30) ta an mek-ess-e
 all -CT not eat-PAST-DEC
 ‘(I) didn’t eat all.’

In (29), the CT marker is attached to the universal quantifier (originally adverb ‘completely’) and we can see the high pitch of the CT marker *-nun* in Fig. 4 and in (30) the CT marker has been deleted but its tone has been preserved and there is a rising tone from *ta* ‘all’ to *an* ‘not’ because of the compensatory high tone coming from the deleted CT marker, as in Fig. 5. Thus it is noted that the CT marker is deletable, just as the non-contrastive Topic marker is, whereas the CT high tone, which is largely responsible for the focality in CT, is not. Thus (29) and (30) are identical in interpretation with the narrow-scope CT or wide- scope negation. Compare it with the pitch track of a negative sentence with no CT marker or its compensatory tone *ta an wasse* ‘All didn’t come’ in Fig. 6.

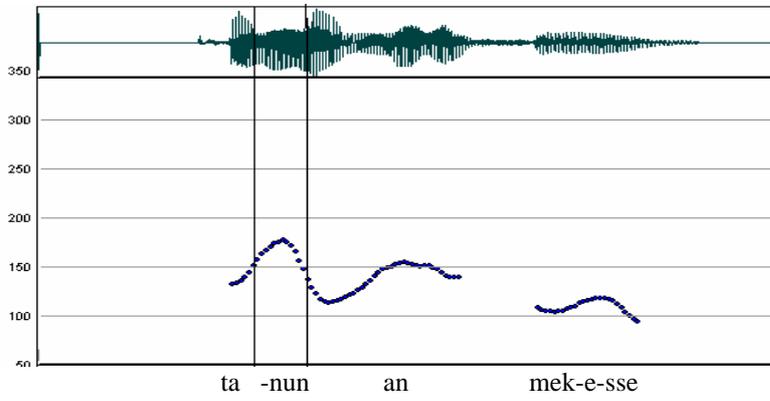


Fig. 4 Universal Quantifier with CT marker in Negation

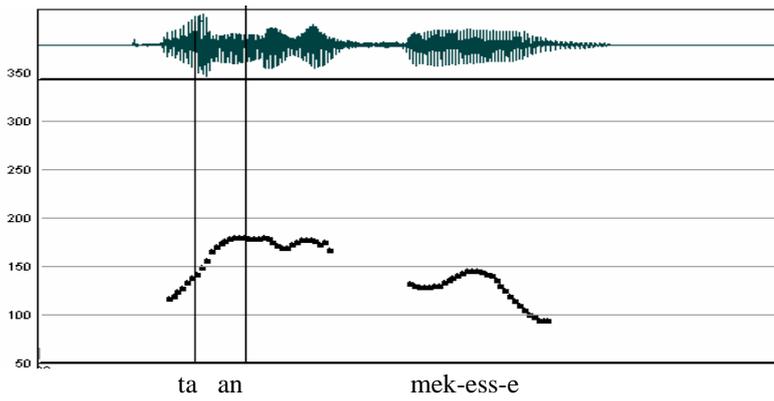


Fig. 5 Universal Quantifier with Compensatory Tone in Negation

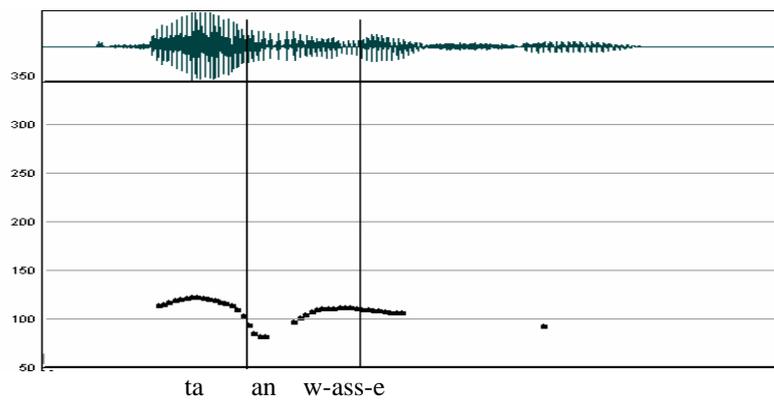


Fig. 6 Universal Quantifier with no CT or Compensatory Tone in Negation

Ladd (1980) and Jackendoff (1972) claim that fall-rise forces a narrow-scope reading in (31) and (32) also in English.

- (31) \ All/ the men didn't go.
 (32) I didn't see \ all/ of the men.

Suppose (31) is interpreted as $\forall \neg$, then *all* is exhaustive and \neg *go* and there is no continuation to a contrasted proposition with weaker affirmation (see (30) above) 'but some men went,' etc. The same applies to (32). Therefore, there is no scope ambiguity in (31) and (32). Consider, however, the 'ambiguity' between the narrow-scope CT and wide-scope CT reading in (32) in English advocated by Buring (1999), Kadmon (2001).

- (32) Two thirds_{CT} of the politicians are not corrupt.
 a. \neg 2/3
 b. 2/3 \neg (not easy with fall-rise)

In (a), a typical CT reading of scalar, nonspecific, non-partition cardinality is given. Roughly, (32), on this reading, is 'it is not the case that up to two thirds of the politicians are corrupt but a little less than that may be corrupt.' This reading is denial of the other party's high value assertion, implicating a low value affirmation on the scale. In (b), on the other hand, a topicalized partition reading is given and this reading of (32) is roughly 'two thirds of the politicians are non-corrupt (and one third may be corrupt.)' The latter reading is similar to a Topic reading, in which no fall-rise is required. I claim that there occurs a topicalization effect for wide-scope CT. This also occurs in Korean in the Topic position. Consider Korean. (33) is ambiguous but a CT in the object position in (34) is not:

- (33) cengchika-euy sam-pwun-euy i-nun pwuphay-ha-ci anh-ass-ta.
 politician-of 3rd -of 2-CT corrupt was-not -DEC
 'Two thirds_{CT} of the politicians are not corrupt.'
 a. \neg 2/3 (non-partition, less than 2/3 corrupt – by polarity reversal affirmative weaker value implicature)
 b. 2/3 \neg (partition, the rest=1/3 corrupt by implicature)
 (34) euysa-euy sam-pwun-euy i-nun hayko-ha-ci anh-ass-ta.
 doctor-of 3 -minute-of 2-CT corrupt was-not DEC
 '(The Government) did not fire two thirds of the doctors.'
 a. \neg 2/3 (non-partition, with an assumed null or realized Topic in the initial position)
 b. (i) \neg 2/3 (non-partition, with a subject 'the Government' after the CT phrase inserted and the CT high tone contour)
 (ii) 2/3 \neg Focal subject; 2/3 \neg Focal verb; 2/3 \neg (partition, with a subject, say, 'the Government' inserted after the CT phrase and a CT high

- tone which tends to be low) (with constituent negation on focused subject or predicate, evoked by Contrastive Predicate Topic)
- c. $2/3 \neg$ (Topic reading with TOP marking and no high tone, partition, specific, the rest = $1/3$ may be fired) (this reading is also possible with the Topic phrase with a low tone in the original object position) (constituent negation readings evoked by Contrastive Predicate Topic as in (bii) are also possible)

Exactly parallel readings evolve in English; the $2/3 \neg$ reading in (32) is a topicalization effect and a non-scalar partition is denoted. Consider an object CT. In (35), $\neg 2/3$ seems natural. The Government did not fire up to $2/3$. So, '---fired less than two thirds' is implicated. .

- (35) The Government did not fire two thirds_{CT} of the doctors. (With contrastive fall-rise contour on 'two thirds')

How about the same object CT in the topicalized position?

- (36) Two thirds_{CT} of the doctors the Government did not fire. (With contrastive fall-rise contour on 'two thirds')

In this position, both a partition reading with topicalization effect (with constituent negation possibilities as in Korean) and a scalar non- partition reading seem to be available.

We can now see that fall-rise (in CT) in fact forces a narrow scope reading, which is scalar, both in Korean and in English. A non-scalar partition reading is a consequent of topicalization effect.

When CT follows a scope-bearing element such as a quantified, focal expression, it shows narrow scope over the scope-bearing element. Observe:

- (37) motu-ka/nwukwuna-ka sakwa sey kay **-nun** mek-ess-ta
 all-NOM/everyone-NOM apple three CL-CT ate
 'Everyone ate three apples_{CT}.' $\forall > \exists_3$ (CL=Classifier)

The CT expression has narrow scope with respect to the preceding universal quantifier in (37) with the meaning of 'at least three *but not more than three* apples.' It has the same effect of having a distributive marker *-ssik* 'each' attached to the numeral classifier (*sey kay-ssik-un*). When the CT phrase is scrambled to the initial position of the sentence, it still predominantly keeps narrow scope but opens the possibility of wide scope rather marginally. Even when it comes to have wide scope reading, 'three apples as a whole' is contrasted with other alternatives. Consider:

- (38) sakwa sey kay **-nun** motu-ka/nwukwuna-ka mek-ess-ta
 apple three CL-CT all-NOM/everyone-NOM ate
 'Everyone ate three apples_{CT}.' $\exists_3 < \forall$ ($\exists_3 > \forall$)

A Focus phrase *Yumi-man-i* ‘Yumi-only-NOM’ can replace the universal quantifier phrases in (37) and (38), seemingly preserving the same scope relations. In particular, if the CT phrase in (38) is replaced by the [*sakwa-rul sey kay-nun*] ‘apple-ACC 3-CL-CT,’ then the narrow scope of CT is unmistakable, although the acceptability of the S slightly aggravates; this case-marker-intervening construction lacks specificity. Also, in (//) if the predicate has a modal expression such as ‘can’ and ‘will,’ the CT narrow scope is unmistakable. If the ACC marker *-rul* replaces the CT marker *-nun* in those sentences, both sentences get an ambiguous scope relation.

This tendency of CT narrow scope is also reported in the CT initial position in Hungarian (Gyuris 2004).

5. CONTRASTIVE PREDICATE TOPIC

5.1. *Scalarity of Contrastive Predicate Topic*

So far we have treated mainly entity type CTs. However, there are ample cases in which properties (or predicates) become Contrastive Topic, which I call Contrastive Predicate Topic (Lee 1999, 2000, 2002). Contrastive Predicate Topic is also a sort of topic (topical) in the sense that it has been a potential Topic, discussed or assumed in the previous discourse. In this sense, it is not Hetland’s (2003) “main news,” although it is a predicate, typically used for Comment information. It is more discursal than sentential. Therefore, it may not fit the narrow definition of Topic by means of ‘aboutness,’ in which the rest of the sentence talks about it. Steedman (2000) strikingly coincides with my view, though he does not so clearly distinguish between Contrastive Topic and his “unmarked theme” until this volume. Secondly, it is scalar in a stronger sense than entity type CT. Consider (39), (40), in which pragmatic scales are evoked:

(39) She ARRIVED_{CT}. $\sim >$ \neg She went on the stage.

(40) She PASSED_{CT}. $\sim >$ \neg She aced the exam.

(39) evokes a scale of {arrive < go on the stage} in context and (40) readily evokes {pass < ace the exam}. Interestingly, the former scale is not semantic but pragmatic, in other words, the larger value ‘go on the stage’ does not entail the lower one. But if we consider a specific context in which ‘go on the stage’ requires ‘arrive’ as a precondition, the former entails the latter in that context and we can call it a pragmatic entailment. The latter scale is semantic; ‘ace the exam’ entails ‘pass the exam.’ (Conventional) scalar implicatures are evoked by both pragmatic and semantic entailments. On the predicate part we can have such as a CT: “All the abstracts DID get accepted. $\sim >$ but there may be withdrawals. Rooth’s (1996) simple alternatives by F-marking cannot explain why fall-rise requires the relevant type of

scalar implicatures. See Lee (2000) for further examples of scalar Contrastive Predicate Topic.

Then, a big question arises: Is a single CT sentence without Focus [Topic + CT] possible, as in (39) and (40)? On surface at least, it is a fact (Steedman 2000 agrees on this, while some others claim there must be a Focus on surface). If we consider, however, why we talk without giving new information by focusing something, we may want to ponder about possible explanations: (1) There is a silent Focus in the scalar implicature part. This phenomenon is not independent; identification focus is silent with a rising Topic marker (*-nun* (Korean), *wa* (Japanese), *shi* (Chinese) in a question such as *ney irum-un?* or “Your name?”; (2) The yes/no (or *verum*) question demands an answer with respect to *whether or not*, i.e. *arrived or not; passed or not*. So, it may include a (Contrastive) Focus (Lee 2003). A partial affirmative answer to this yes/no question is the concessively admitted CT sentence; (3) CT itself is partially focal and we may assume that the implicature part is also partially focal. Thus, the totality may be fully focal; (4) There is nothing beyond the surface form [Topic + CT]. (1) and (3) consider the implicature part and are preferable to (2) and (4).

Focus is even neurologically real: Some ERP experiment results (Yuki 2004) show striking brain responses to the lack of expected intonational prominence (A2) in Figure 7 for focused words in Japanese. For the Subject *wh-Q* “Whos lost the key?” (*Da're-ga kagi'-o nakushita'-no?*), A1 is Match: *MA'SAYA-ga kag'i-o nakushita'-N-da-yo* and A2 is Mismatch: *Ma'saya-ga KAGI'-o nakushita'-N-da-yo*. The Subject that lacks the expected intonational prominence (A2) is more positive in the waveform than the properly prominent subject (A1). Observe:

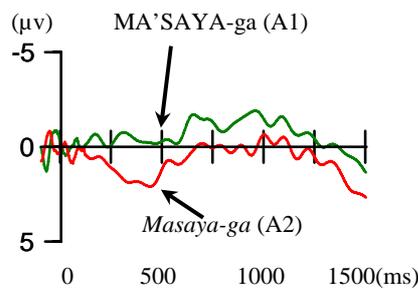


Figure 7. ERP waveforms for Subject-focus WH-Q-answer pairs (A1 vs. A2)

5.3. REASON Adjunct Clause and Negation

A reason adjunct clause and negation interact scopally in various languages and Korean is not an exception. But observe (39) first, which has a Contrastive Predicate Topic. It has the wide-scope negation and the CT is focally associated with the reason clause. If the CT marker is deleted but its compensatory tone is retained, its interpretation is the same as (39). But if the same sentence has no CT marker and no high tone, then its interpretation is the same as (40). In the written text without any intonation marking, the sentence is ambiguous between the two opposite scopal interpretations. Because the Contrastive Predicate Topic is associated with the reason clause both in (39) and in its corresponding sentence with a null CT marker but with a high tone and the reason clause comes to have the direct CT effect, the interpretation is: [It is not because she is rich_{CT} that he married her]. Then, its implicature may be: [I married her because she is nice], ‘nice’ being weaker than ‘rich’ in the pragmatic scale. In the narrow-scope reason clause sentences with the CT marker or its compensatory high tone in its narrow-scope reason, the reason clause is rather high and is immediately followed by the matrix clause intonationally, whereas in the wide-scope reason clause sentences with no CT marker or tone the reason clause falls and there arises a big pause before the main clause. There is an exact correlation between intonation and interpretation.

- (39) pwuca –yese kyelhon-ha-ci-**nun** anh-ass-e
 rich-be-because marry -CT not
 ‘(He) didn’t marry (her) because she is rich.’ REASON < NEG

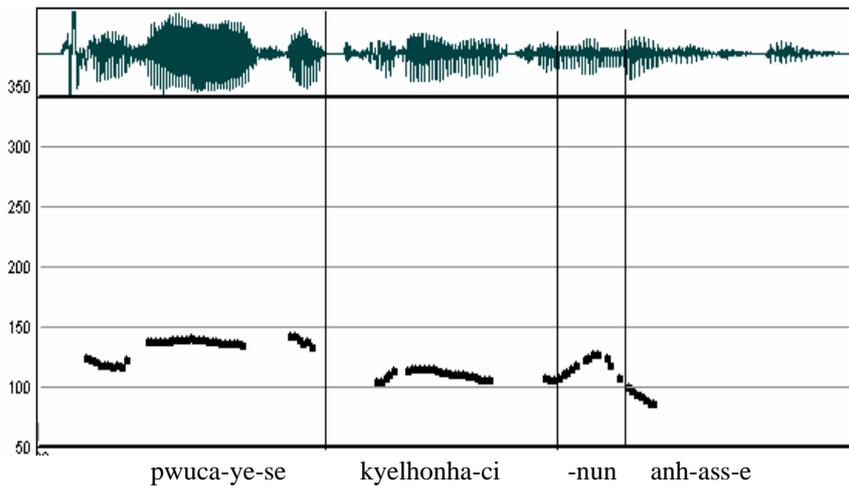


Figure.8. REASON Clause < Negation (CT-marked)

- (40) pwuca –yese kyelhon- an hay-ss-e
 rich-be-because marry not do -DEC
 ‘(He) didn’t marry (her) because she is rich.’ REASON > NEG

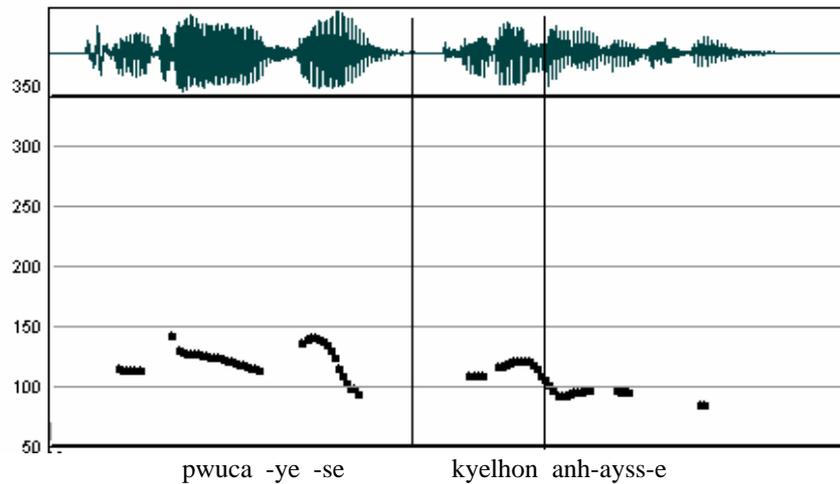


Figure 9. REASON Clause > Negation

All the scope relations involving quantifier–negation and REASON–negation depend on whether the sentences in question have inherently Contrastive Predicate Topic (with a pitch accent or marker), related to the previous discourse context. If that is the case, the sentences must take the wide-scope negation, with the Contrastive Predicate Topic focally associated with the relevant quantifiers or REASON clause. Thus viewed, scope ambiguity is not present. Constituent negation also involves Contrastive Predicate Topic, with the latter being focally associated with the relevant constituent (Lee in preparation).

7. CONCLUDING REMARKS

Contrastive Topic is preceded by a question that includes a sum as a potential Topic or a conjunctive question (or even if it is a disjunctive question, inclusive reading must be possible). On the other hand, Contrastive Focus, which has not been treated here, is preceded by an alternative disjunctive question which expects a choice of a single answer (see Lee 2003). A typical CT, which necessarily evokes a conventional implicature, must be distinguished from a type of list contrastive topics.

Not only type-subtype scalarity (based on poset) but also subtype scalarity must be incorporated in any model of Contrastive Topic, although some entities in some contexts are allowed to receive list reading.

Contrastive Topic basically behaves as a narrow-scope-bearer in interaction with other scope bearers including a REASON clause. A Contrastive Predicate Topic

analysis is proposed for the wide-scope negation reading of the scope ambiguous sentences.

Predicates are necessarily subtype-scalar when CT-marked and numerals and quantifiers, which are semantically ordered, have the same nature when CT-marked.

We cannot miss the real intent of using a CT: it is to convey a conventionally implicated proposition. If ‘CT(p)’ is given, then contrastively (‘but’) ‘not q’ (q: a contextually higher stronger predicate) is conveyed and if ‘CT(not-q)’ is given, then contrastively ‘p’ (contextually a lower weaker predicate) is conveyed (Lee 2002). The rhetorical force of CT is placing more weight on the unuttered implicature proposition. The CT utterance is concessive admission and its concessivity can be shown by the near-paragraph relation of (39) to (41):

(41) Even though/Even if/Although she ARRIVED, she didn’t go on the stage..

Although ‘even if’ is possible, it is not like a normal conditional, not licensing contraposition. The truth of the consequent is urged, whatever the antecedent may turn out to be in truth. The implicature of (39) *i.e.* the consequent of (40) is so forceful in rhetorical structure.

Steedman (2000) incorporates a CT tone (L+H*) in the specification of ‘married’ in the lexicon (from Anna MARRIED (L+H* LH%) MANNY (H*LL%)) but claims that its implicature is “conversational” (this volume). But he emphasizes that “kontrast, thematicity, and hearer responsibility are all elements of literal meaning, and hence in your terms conventional implicature” (p.c.). Scalar implicatures, generated by CT marking, though their higher values are determined by context, are not cancelable and conventional. The intonational device may better be closer to its meaning as conventional. Information structure must be able to show the relation between intonation and meaning more closely by our further scrutiny.

NOTES

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² Mira Oh, in her recent experiments (in preparation), ‘Phonetic Realizations of Focus and Topic in Korean’, observes that the Cheonnam dialect shows an IntPBoundary in contrast with the Seoul dialect.

³ Steedman's (2000) example (1) can be given a similar scalar interpretation. A theatrical musical performance is assumed in the previous query and under it a pragmatic scale <musical, opera> can be set up.

- (1) Q: Does Marcel love opera?
 A: Marcel likes MUSICALS.
 L+H* LH%

Therefore, if *opera* and *musicals* are substituted by each other, the answer *Marcel likes OPERA_{CT}* would not be appropriate on the scalar reading. On a non-scalar reading, the implicature may be open to a list alternatives reading and even roundabout affirmation.

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