Information Structure in PA/SN or Descriptive/Metalinguistic Negation: With Reference to Scalar Implicatures

Abstract

This paper attempts to show how the information structure categories of Contrastive Topic (CT) and Contrastive Focus (CF) are correlated with PA (pero/aber) vs. SN (sino/sondern) respectively and also with DN (descriptive negation) vs. MN (metalinguistic negation) respectively when negative utterances are involved. Far Eastern and other languages including English will be investigated. It further claims that the CT–PA pattern underlies the phenomenon of scalar implicatures, whereas the CF–SN pattern, which is MN, typically ‘blocks’ them or is irrelevant to them. Scalar implicatures, conventionalized by CT, are viewed as basically semantic but linked to Gricean, dynamic, argumentation-theoretic, game-theoretic reasoning.

1 I thank those who asked questions and made comments at the Shanghai conference and its organizers. I am particularly grateful to Ken Turner for his comments on the draft and to Larry Horn for his comments on one aspect of predicate scales such as <like, love>, which may be different from other scales. The research reported here was partially supported by the grant from the Japan Society for the Promotion of Science, Grant-in-Aid for Scientific Research (A) (1), No. 15202009 (2003–7) to Takao Gunji.
1. Contrastive Topic (CT) and PA Correlation

1.1. Contrastive Topic and Conventional Scalar Implicatures

If a sentence with a scalar term from numerals, quantifiers, modals, predicates and nominals of ranking is uttered, a stronger alternative value in a contextually relevant scale is denied in an unuttered conjunct connected by a ‘concessive’ *but* to form a scalar implicature by Gricean inference. This paper first makes the distinction between typical *conversational* scalar implicatures (contextual, optional) and *conventional* scalar implicatures. The latter, unlike in Buring (2003), are those invoked by a Contrastive Topic (CT) contour or marker, i.e. a linguistic device, quasi-universally, as will be borne out by cross-linguistic data to be provided. Unlike conversational scalar implicatures, conventional ones cannot be cancelled without roundabout epistemic constraints.

An overt CT is marked by fall-rise B accent (L+H*’LH%) intonation in English or CT markers -*nun* in Korean and -*wa* in Japanese both with high tone, or *shi* (with tone 4-Fall) in Chinese. The Vietnamese CT marker *thi* is unique in the sense that it has its unique role of CT without sharing the same morpheme with a non-contrastive Topic concept, as in (1) a. (ambiguous between a generic Topic S and existential S):

(1) a. chim *bay* – Generic Topic S
   Bird *fly*
   ‘Birds fly.’ (Or ‘Birds are flying’ – Existential S)

   b. chim *thi* *bay* (Nguyen Hoai Thu Ba p.c. and 2006)
      *bird*CT *fly*
      ‘Birds*CT* fly.’
   ~> [nhung/?’va ca *thi* lo] – Conventional implicature
      *but and fish*CT *swim*
      ‘But fish*CT* swim.’

But with the CT marker *thi*, it changes to a CT S (1) b. requiring an implicature *nung ca thi lo* ‘But fish*CT* swim’. This implicature is conventional because it is generated by the CT marker *thi*, an explicit linguistic device. It is a morpheme
used uniquely as a CT marker. How can we deny the claim that it is a conventional implicature? Here, the common noun has a generic denotation and because of the CT marker the generic nominal comes to be contrasted with an alternative generic nominal in the implicature part, which is not in the utterance. The alternatives contrasted are relevant and comparable in the context. In this case, the (common) noun alternatives chosen ‘birds’ and ‘fish’ are apparently not scalar alternatives, regarded as non-scalar items on a list. But the sum of ‘birds’ and ‘fish’ are informationally stronger than ‘birds’ (or ‘fish’) and the alternatives contextually generated by the CT marker can form a scale <‘birds,’ ‘birds’+’fish’> (weaker/first), from which ‘birds’ has been admitted in (1) b., implicating the denial of the sum or the stronger value in the scale. However, the part of the sum, ‘birds,’ has been already admitted and the sum – ‘birds’ = ‘fish’ remains to be denied. The contextually generated alternatives are scalar in some indirect sense but there may not be a direct ranking scale between ‘birds’ and ‘fish’. Likewise, there can be simply a part-whole hierarchy and if one part is CT-marked the other part(s) of the whole can be left to be contrasted in an implicature. This relation is obvious in a dialogue such as Q: ‘Did you read the book?’ A: ‘I read chapter one<sub>CT</sub>.’

On the other hand, there is a list CT that typically occurs with the regular conjunction marker -<sub>ko</sub> ‘and’. Other list CTs occur in different conjuncts to complete the sum total of the potential Topic from the previous discourse context in Korean. Observe:

(2) sakwa-nun mek -ko salkwu-nun mek-ci anh-ass-ta
    apple-listCT eat -and apricot-listCT eat-NMZ not-do-PAST-DEC
    ‘(I) ate the apple and didn’t eat the apricot.’

The list CTs in Korean have no high tone, unlike a scalar CT marker, and cannot generate an implicature because the given list CT’s typically exhaust the potential sum total Topic. This is a special case of CT for nominals typically. The first conjunct of (2) can be continued by ‘and I put the apricot into the basket’ with no overt reversed polarity. (1) b. can be put in a coordinate conjunction in Korean such as (3) a., whereas (3) b. is ambiguous between a non-Contrastive Topic and CT, unlike (1) b. If the marker -<sub>nun</sub>- has a high tone, it gets a CT reading and requires a (scalar) implicature:
(3) a. say-nun nal-ko mulkoki-nun heyemchi-n-ta
   bird-listCT fly-and fish-listCT swim
   ‘Birds fly and fish swim.’

   b. say-nun na -n -ta
      bird-TOP/CT fly -PRES -DEC
      ‘Birds fly.’ Or ‘Birds fly<sub>CT</sub>.’

Interestingly enough, (1) b. *chim thi bay*, ‘Birds<sub>CT</sub> fly’ in Vietnamese, is not felicitously conjoined by *va ‘and’ with ca thi lo ‘fish swim’. It implies that the CT marker has a concessive meaning which requires PA rather than coordinate conjunction.

Nominals of ranking do not involve entailment, e.g., there is no hyponymy between <assistant professor, associate professor> because it forms an intra-category scale unlike an inter-category scale such as <flower, rose>, <fruit, apple> (see Lee 2008 for inter-category vs. intra-category scales). The utterance of (4) with the CT marking can generate a conventional implicature of *‘but not an apple’* (contra Krifka 1999). Without the CT intonation, we can hardly get the same scalar implicature of *‘but not an apple’*, as Krifka indicates:

(4) I ate a FRUIT<sub>CT</sub>. (But not an apple.)

The speaker of (4) may have an intra-category scale of ranking such as <apricot, apple> (in taste, for instance) in mind for the utterance, with [[apricot]] ⊆ [[fruit]] or apricot → fruit with the effect of ‘I ate an apricot’ → ‘I ate a fruit’. So, ‘I ate a sort of fruit which is inferior to an apple’ can be meant. In a context where the scale of <apricot, apple> holds with one apricot and one apple, for a question ‘Did you eat the apple?’ or ‘Did you eat the apricot and the apple?’ an answer such as ‘I ate the APRICOT<sub>CT</sub>’ (~>But not the apple) can keep the ranking scale, generating a scalar implicature of denying a higher value in the scale. However, an answer ‘I ate the APPLE<sub>CT</sub>’ (~>But not the apricot) can require a re-ranking of the scale as <apple, apricot> (in a context where apricots are rare and specially valued, for instance). Otherwise, just a part-whole hierarchy of <apple, apricot+apple> is evoked to implicate simply ‘But not an apricot’ and no direct ranking between ‘apple’ and ‘apricot’ is made.
CTs create scales with relevant and comparable alternatives in context. Scalarity is semantic, no matter whether entailment is involved or not, but how to represent scalar implicatures in semantics/pragmatics (or in LF syntax) has not been well resolved. Scalar terms that form entailment scales such as numerals, quantifiers, modals, and some predicates can generate conversational scalar implicatures in context, when they have information focus and occur with a normal intonation, as in (5) B. But note that even those conversational scalar implicatures must be preceded by the PA discourse marker/connector *but*. By the time a conjunction marker occurs in an utterance, the first conjunct already uttered comes to be presuppositional or in the common ground (Stalnaker 1978) and, particularly if the conjunction is that of PA, it is concessively admitted. Therefore, we can postulate a covert CT operator to give an account. Then, initially its scope must be the entire first conjunct, of which the effect is that the predicate part gets covertly CT-marked and the operator gets associated with the relevant scalar term which has information focus. Consider (5) vs. (6):

(5) A: How many children do you have?

B: I have THREE$_p$. $\sim \rightarrow$ (conversationally implicates)
[But not more than three]
I have THREE$_p$. ((In fact, four.)) (conversational implicature cancellable)

(6) A: You have many children, don’t you?

B: I have THREE$_{CT}$. $\sim \rightarrow$ (conventionally implicates)
[But not more than three]
I have THREE$_{CT}$.?' ((In fact, four.)) (implicature not cancellable)

B': ses-UN iss-e. (Korean)
3-CT exist-DEC ‘I have THREE$_{CT}$.’

san-nin-WA imasu. (Japanese)
3-CL-CT exist-DEC ‘I have THREE$_{CT}$.’
With a normal intonation and information focus, (5) B. may generate a conversational implicature in a context via Q-inference (based on ‘Say sufficiently’, lower-bounding; inducing upper-bounding implicatures) but it can be cancelled and a stronger value can be asserted, as in (5) B. via R-inference (based on ‘Say as much as you must’, upper-bounding; inducing lower-bounding implicatures). Q-implicatures are psychologically real and included in ‘what is said’ by subjects in experiments (Gibbs and Moise 1997). Particularly if the term is CT-marked with B-accent or morpheme -UN or -WA, as in (6) B. and (6) B’, the scalar information is hardly cancelable and becomes conventional. On the other hand, R-implicatures such as the temporally sequential reading of a coordinate conjunction or ‘She was able to open the door’ implicating ‘She entered the room’ enrich interpretations beyond ‘what is said’. If question (5) A. is answered by ‘I have three children and I don’t have more than three children’, or equivalently ‘I have exactly three children’, the speaker is expected to know the negativity (falsity) of ‘I have more than three children’ and the truth of the whole reply. Then, there is no room for any scalar implicature beginning with concessive ‘But’ to arise; if the speaker knew the denial of the stronger value, he/she would have uttered it (the ‘exactly’ S or the ‘and’ conjunction, for instance) by the Maxim of Quantity. In the case of numerals particularly, people have a strong bias for the exactly interpretation and Kamp (p.c.) even suggests that *exactly n Noun for n Noun* is semantic, which Kadmon (2001) opposes, following Horn’s line.

By distinguishing between conversational (no overt CT) vs. conventional (overt CT), the dispute between Horn (2006) and Chierchia (2004) about the implicatures of negative scales seems to disappear; Chierchia’s claim that they are ‘somewhat weaker and flimsier’ is one-sided, dealing with conversational ones and totally lacking the notion of CT, which Horn also lacks. With CT, Horn is right but without it, Chierchia is right. Observe (7) (Lee 2006a):

(7) A: I don’t have many friends. \(\sim\) > (conversational) [But I have just a few 
or no friends.] (‘weaker and flimsier’)

B: I don’t have \(\text{\textbackslash MANY}_{\text{\textbackslash CT}}\) friends (L+H*LH% or Fall-Rise B Accent) \(\sim\) > (conventional) [But I have (just) a few friends.] (not no friends here) (with a negative utterance, a reversed negative scale in strength works)
B': na-nun chinku-ka manh-ci-NUN\textsubscript{CT} anh-a~> (conventional) (Korean)
I-TOP friend-NOM many-NMZ-CT not
haciman myet myeng -UN\textsubscript{CT} iss-e
but some CL -CT exist-DEC
[But I have (just) a few friends.] (not no friends here) (same as B)

In positing a (covert or overt) CT operator, initially its scope must be the entire utterance, of which the effect is that its predicate part gets CT-marked and the operator gets associated with a relevant focused scalar term. Then, the effect of CT marking the associated term arises. CT is focal and topical. The associated term begets its contrast alternatives. Observe:

\[(8)\] a. Yumi-ka monitor-ul sa-ci-NUN anh-\textsubscript{ass-ta}~> (haciman –)
Y-NOM -ACC buy-ci-CT not-PAST-DEC
‘Yumi \textsubscript{CT} did not buy a monitor \textsubscript{CT}’~> b, c, d, or e below.

b. – SA-ci-NUN ‘Yumi did not buy\textsubscript{CT} a monitor.’
~> [But just browsed ones]

c. – MONITOR-RUL SA-CI-NUN ‘Yumi did not [buy a monitor]\textsubscript{CT}.’
~> [But just sold used books].

d. – MONITOR-NUN ‘Yumi did not buy a monitor \textsubscript{CT}.’
~> [But Yumi bought just an organizer]

e. YUMI-NUN [But Mia bought one].

Except for list CTS, other CT occurrences are all scalar by default. Observe an example in Chinese:

\[(9)\] a. fan SHI chi guo le, dan shi shuiguo mei you chi guo rice CT eat PER FP but CT fruit not eat PER
‘Rice, I ate, but fruit, I didn’t eat.’
b. *fan SHI chi guo le, he shuiguo mei you chi guo rice CT eat FP and fruit not eat PER
   ‘Rice, I ate, and fruit, I didn’t eat.’

c. da-bu-fen xue-sheng(-men) SHI xi-huan shang-ke de.
   (大部分学生(们)是喜欢上课的)
   most student PL CT like attend class
   ‘Most students CT like classes.’
   ~> er/dan/dan-shi bu-shi suo you de xue-sheng dou xihuan.
   (而/但/但是不是所有的 学生都喜欢.)

The CT marker SHI in Chinese induces a scale of ranking <fan ‘rice,’ shigu ‘fruit’> and requires PA, the conjunction of concession and contrast, dan shi ‘but,’ as in (9) a., but not the coordinate conjunction marker be ‘and,’ as in (9) b. Therefore, it cannot get a list CT interpretation, although it involves comparable nominals. We noticed the same situation in Vietnamese above in (1) B., where the coordinate conjunction marker be ‘and’ cannot connect the CTs or one CT with an implicature CT. Unlike these, the SHI -de construction in (9) c., however, tends to express an individual-level property of the predicate (see Lee 2003a) rather than a concessive contrast and the conjunction marker er can also be used as well as dan-shi in this particular context because of the following negation bu shi (cf. Park and Lee 2005).

Let us turn to cases of CT-marked predicates. Observe:

(10) A: How did she do on her exam?

    B: She \PASSED/\textsubscript{CT} (L+H*LH\% or Fall-Rise B Accent). ~> (conventional)
       [But she didn’t ace the exam.]
       She \PASSED/\textsubscript{CT} (L+H*LH\%). ((?*In fact, she aced the exam.))

B’: puth-ki-NUN ha-/puth-ess-e ~> (conventional)
    pass-NMZ-CT do/pass-PAST-DEC
    [haciman il-tung-un mot ha-yss-e.] (Korean)
    But ace –CT cannot do-PAST-DEC
    ‘(She) \PASSED/\textsubscript{CT}. [But (she) didn’t ace the exam.]"
In (10) B. the predicate \(\text{PASSED}/_{CT}\) is a Contrastive Predicate Topic, being partially linked to a potential Predicate Topic ‘passed and aced the exam,’ generating the scale of alternatives \(<\text{pass, ace the exam}>\) and an implicature denying the stronger alternative. Such a scale can either involve entailment or not (\(<\text{like, love}>\) does). All the predicates with CT marking invoke scales with contextually determined alternative values. In Korean, \(\text{V-NMZ(nominalizer)-nun V-} \) (verb repetition) or V-NMZ-\(\text{nun ha} \) ‘do’ form is used for predicate CT marking. In Japanese, only the V-\(\text{wa suru} \) ‘do’ form is employed, whereas in Chinese a verb repetition form is used. Korean has both the Japanese pattern and the Chinese pattern but the two forms in Korean have a basically identical CT interpretation.

Observe an example of Contrastive Predicate Topic in Chinese. In (11) the construction V-\(\text{SHI-V} \) shows a repetition of the same verb stem after the CT marker \(\text{SHI} \). The event of ‘eat rice’ has its higher alternative ‘eat enough’ (degree of amount/satisfaction) for the denial of the scalar implicature:

\[\begin{align*}
\text{(11) a. } & \text{fan, chi SHI chi guo le, } \text{dan shi}\text{ you chi bao} \\
& \text{rice eat CT eat PER PF but CT not eat enough/full} \\
& \text{‘Rice, I ate CT, but I didn’t eat enough.’}
\end{align*}\]

\[\begin{align*}
\text{(11) b. } & \text{Ta chi SHI chi le, } \text{dan shi}\text{ mei chi bao.} \\
& \text{he eat CT eat PST but not eat full} \\
& \text{‘He ate CT, but I didn’t eat enough.’}
\end{align*}\]

An utterance of a predicate in CT generates a polarity-reversed predicate meaning inversely (modified from Lee 2000), as follows:

\[\begin{align*}
\text{(12) } & \text{If ‘CT(p)’ is given, then concessively and contrastively (‘but’) ‘not q’} \\
& \text{(q: a stronger/higher predicate) is conveyed and} \\
& \text{if ‘CT(not-q)’ is given, then concessively and contrastively ‘p’} \\
& \text{(a weaker/lower predicate) is conveyed.}
\end{align*}\]

The principle is one and the same; the second condition if ‘CT(not-q)’ – is incorporated into the first condition because not-\(q\) is weaker and after but ‘not not-p,’ which is equivalent to \(p\) (not-\(p\) is stronger in the negative scale).
by double negation law, becomes positive in a weaker form. In other words, on the negative scale an inversed order of negative alternative values step in, \( <p, q> \) becoming \( <-\neg q, \neg p> \) (as in \( <1, 2, 3, \neg \> \) and \( <-\neg 3, \neg 2, \neg 1> \)).

1.2. Contrastive Topic and PA/PA-based Discourse Marker (DM)

This paper shows that scalar implicatures crucially involve the information structure category of CT and that they necessarily begin with the discourse marker/connector based on the conjunction type of PA *but* (pero or aber) (as opposed to SN *but* (sondern or sino), correlated with Contrastive Focus (CF), to be discussed shortly). CT is correlated with PA (and CF with SN). An utterance with CT is a lower-bounding concessive admission of the part of the previous potential Topic and this concessive and admissive nature of the CT-marked part of the utterance (or the first conjunct in its corresponding PA conjunction) matches the concessive connective or PA-based discourse marker in implicatures (or in an explicit second conjunct). This is the case even when the utterance has a scalar term with information focus in reply to a previous *wh*-question, as in (5B). Otherwise, the conversational scalar implicature in (5B) is not induced. That is why I propose that we postulate a covert CT for those utterances which do not have an explicit CT marking but still induce a conversational scalar implicature. To make this happen most naturally we need to posit an accommodated question similar to (6) A. Then, the match between the concessive function of the PA-based discourse marker (DM)/connector such as *But*, *Haciman* (Korean), *Dan shi* (Chinese), *Ga* (Japanese), *Nhung* (Vietnamese) and the lower-bounding concessive meaning of the postulated CT marking may well be established.

An utterance with CT, covert or overt, is a concessive admission of the part of potential Topic in the previous discourse (cf. Ward and Hirschberg 1985; Choi 2004) and this concessive and admissive nature of the partial/weaker term of the utterance or the first conjunct matches the concessive connective PA in implicatures or in explicit second conjuncts. Predicates freely function as scalar alternative terms, as in (13)–(14). Because of the entailment scale \(<\text{like, love}>\), the CT sentences (13) a. and (14) a. bring about the implicatures with a PA DM. (13) b. and (14) b. are their corresponding overt PA conjunction sentences:
(13) a. I \( \text{LIKE}_{CT} \) her. \( \sim \) [But I don’t love her].

b. I like her but I don’t love her.

c. *?I love her but I don’t like her. (Contradictory in one dimension\(^2\))

(14) a. \( \text{watashi-wa kanozo-ga suki-deWA aru} \sim \) [Ga ai-shi -te -WA inai]
   I -TOP her-NOM like-CT be But love-do-CON-CT not

b. \( \text{watashi-wa kanozo-ga suki-deWA aru ga ai-shi-te -WA inai} \).
   ‘I like her but I don’t love her.’ (Japanese)

Predicative nominals are also CT-marked, triggering a scale of ranking in the nominals’ hierarchy or in the event or property types, as in (15) a. For predicative nominals, the CT marker \( shi \) applies to a nominal in Chinese (see (16) a.) and the CT marker \( -nun \) applies to a nominal or to a nominalized copula in Korean, as in (17) b. and a. In Korean, a copula is a copula, but in Chinese, \( shi \) here only functions as a CT marker. If the nominal is not taken as a hierarchical one, what is denied is its proper role/function expected from the status of the predicative nominal or true predicate property. In (15) a. the implicature may be *But she is not a head cook*, if the nominal is interpreted to be hierarchical as a nominal referent. Observe:

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2 Ken Turner made a nice comment on my use of ‘contradictory’ here, saying, ‘Well, I’m not sure that I agree entirely. There is a soap opera in England called ‘Coronation Street’. A few years ago, a man called Jack, said, in a discussion of his wife, Vera, the following utterance. “Don’t tell her this but I love her. It’s just that I don’t always like her.” I wonder what you would make of that fact.’ Regarding this, Larry Horn reminded me of his discussion, saying, ‘See my *Natural History of Negation* (1989), fn. 23 (to Chapter 4), pp. 546–7 for the citation of the song “You Really Got a Hold on Me”, sung by Smoky Robinson and the Miracles, the Beatles, and others, with the opening line: “I don’t like you, but I love you”. In that note I try to distinguish this case (involving a contrast between eros and philia, I claim) with that of, say, a particular brand of pasta where the corresponding conjunction strikes me as impossible, and the implications of this situation for scalar semantics and pragmatics.’ There may be a subjective contrast between a ‘loving relation’ and somewhat transient ‘liking stages’.
(15) a. She is a COOK$_{CT}$. ~> [But she does not cook well].

b. She is a cook but she does not cook well.

(16) a. xue sheng SHI xue sheng (but she stays in the game room all day long).

\[
\text{student CT student}
\]

\[\text{‘(She) is a student-CT.’}\]

b. xue sheng SHI xue sheng dan-shi ta tsai wangba yi zheng tien

\[
\text{‘(She) is a student-CT but she stays in the game room all day long.’}\]

(17) a. haksayng -i -ki -nun ha-y

\[
\text{Student be NMZ CT do-DEC}
\]

\[\text{‘(She) is a student-CT.’ or ‘(She) is-CT a student.’}

\[\text{(But not at that time in the past.)}\]

b. ku yeca-nun haksayng -un haksaeung-i-ya

\[
\text{the woman-TOP student-CT student-be-DEC}
\]

\[\text{‘(She) is a student-CT.’}\]

In (16), \textit{shi} does not function as a copula and has no way of contrasting tense, unlike in (17) a. in Korean and also in English (15) a., where a copula is identified and can be CT marked (although direct marking is blocked morphologically), as in ‘– IS$_{CT}$ a student,’ contrasted with its contextual alternative ‘– WAS a student.’

In the case of process predicates, a sub-process of goal or near goal may be denied as a higher alternative after PA, as in (18) and the clause beginning with its discourse marker \textit{Dan-shi} may remain silent to be interpreted as a scalar implicature.

(18) lái SHì lái le, dan-shi mei you shang tai biao yan

\[
\text{come CT come PERF but CT not on the stage perform}
\]

\[\text{‘(He) came-CT, but didn’t go on the stage.’}\]

\[\text{來是來了, 但是沒有上臺表演。}\]
Let me demonstrate that Contrastive Predicate Topics also behave like quantifiers and reveal the same scalar structures. Consider a situation in which the extreme value on a scale of predicates is taken in its CT marking, as in (19):

\[(19) \quad ???\text{sha SHI sha le. (Chinese)}\]
\[
\text{kill CT kill PERF} \\
???'I KILLED}_{CT} \text{him.' [L+H*HL%]}
\]

\[(20) \quad ???\text{cuki-ki –nun hay-ss-ta (Korean)}\]
\[
\text{kill-NMZ-TOP do-PAST-DEC} \\
???'I KILLED}_CT \text{him.' [L+H*HL%]}
\]

Either some more extreme case must be accommodated to be appropriately interpreted as a felicitous scalar implicature in a scale extension in context, as in (21) a., or some meta-action rationalization may follow, as in (21) b.

\[(21) \quad \text{a. But I didn’t decapitate/dismember him (Lee 2000).} \]
\[
\text{Or dan shi ta si zhi wan hao ‘but his limbs remain’}
\]

\[(22) \quad \text{b. But he deserves it.} \]

Otherwise, a big puzzle arises. Note that no such contrastive predicate meanings are easily generated without CT marking in general. That is why the implicatures by explicit CT are conventional.

A negative CT naturally conveys its polarity-reversed affirmative predicate meaning but in the direction of the weaker inversely. Consider (22) a. and (22) b.:

\[(22) \quad \text{a. I didn’t KILL}_CT \text{him.} \]
\[
\text{b. But I beat him.} \]

\[(23) \quad \text{a. Scalar C-set: } \langle \text{touch, push, beat, hurt, kill} \rangle \text{ Severity of attack} \]
\[
\langle S_1, S_2, S_3, S_4, S_5 \rangle
\]

\[(23) \quad \text{b. } S_m \leq S_n \text{ for each } m < n \]
The logical structure of all the relevant and comparable alternative predicates (processes or events of all types such as accomplishment, achievement and activity, Lee 2000) at a more ‘abstract’ level is not different from that of Horn’s ‘entailment’ scales (as in (23) b.) in generating scalar implicatures. Furthermore, this kind of process scales may be far more prevalent than Horn scales in everyday language. Let’s take $S_1, \ldots, S_5$ to abbreviate the increasing different degrees of the severity of my attack from low to high (less severe than), $S_n$ entailing $S_m$ for each $m < n$. We, then, get some sort of abstract level ‘entailment’ in general. The scalar implicature of the CT-marked sentence $I$ BEAT/HURT$_{ct}$ him is easily predicted to be $I$ didn’t kill him. Because scalarity has a semantic nature, all the related phenomena are born out by cross-linguistic data. Different types of Contrastive Predicate Topic have been investigated in view of its generating unmistakable and not cancelable scalar implicatures and its correlation with PA conjunction in different languages (Lee 2000).

We need to consider various inference relations involved in the PA conjunction and see what kind of generalizations about scalarity we can draw from them. We already observed that an alternative value corresponding to a goal or a value closer to it from among a series of possible subevents is higher in the scale chosen. Commonly used ‘generic entailments’ are often employed

\begin{enumerate}
\item I PEELED$_{ct}$ an apple. [L+H*LH%]
\item But I didn’t eat it.
\end{enumerate}

The goal of doing subevents about fruits may be eating them for nutrition (Pustejovsky 1995). A temporal/causal sequence of events such as grow the tree, pick, wash, peel, and eat (an apple) forms a scale. The act of eat (an apple) is analogous to the universal quantifier and peel (an apple) to most. If wash is CTed, then ¬peel is conveyed and if ¬peel is CTed, wash is conveyed in the relevant context. The extreme universal element is set in context.

For activities, the degree of efficiency typically lies on the C-set scale. Consider:

\begin{enumerate}
\item I RAN$_{ct}$ [LH*LH%]
\item But I ran not far enough/I didn’t break the record.
\end{enumerate}

As Chris Potts suggested in the LELNS Conference (Tokyo, June 2006).
in PA. The intent of the speaker, which is closer to or harmonious with the conversational goal, is rendered in the second conjunct or implicature part (or in the context). In (28), Gn, [Republican(x); dishonest(x)] works and we can postulate a scale <generic condition, generically entailed consequent>. This kind of generic entailments can be in the common ground of the speech community (Stalnaker 1978; Koenig and Bendorf 2000). They can be reconstructed from the semantics of PA and the content of the first and second conjuncts, even if we are not aware of the generic beliefs beforehand. In PA, the first conjunct is concessively admitted typically with CT and a contrasted denial of a generically entailed consequent is uttered (or scalarly implicated in context) in the second conjunct with PA or its DM. This scale applies to (29) and (30)5 below.

In argumentation theory (Anscombe and Ducrot 1977), utterances have argumentative orientation, though they are non-truth-conditional, and but/mais is an argumentative operator which constrains it. In $p \text{PA} q$ ($p, q$ as two conjuncts), $q$ is $\neg r$, the denial of the ‘generically entailed’ conclusion $r$ (‘not honest (x)’) from $p$ (‘a Republican (x)’ in (28); ‘not play football well (x)’ from ‘not tall (x)’ and ‘not healthy (x)’ from ‘old (x)’ in (29) and so on). The negation involved in PA, whether it is in $p$ (as CT) or $q$ (or a scalar implicature after PA-based DM), is denotational and is necessarily descriptive negation. It cannot be metalinguistic negation.

Game-theoretically, first, Pro’s concessive assertion with the upward cone and the scalar implicature with the downward cone corresponding to the counterclaim of a disputant, Con, are identified. Pro’s initial concession is based on the other party’s potential Topic. Then, Pro is responsible to back his/her

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5 The speech act of order is tentatively obeyed but the manner of order can be challenged, as follows:

A. mwun com tat-e ‘Close the door.’
B. mwun -un tat-kess-ciman (-nuntey) pan-mal-un samka-cwusipsio ‘I will, but don’t use the half-speech.’

Or the assertion can be admitted concessively, challenging the presupposition part. Observe:

A. The man who is drinking martini is my uncle.
B. Yes, you are right (or he is) but he is drinking water.
claim but not Con’s counterclaim. So it is defeasible, unless Pro’s assertion is CT-marked (cf. Merin 1999). Yet, Con is rational and its scalar implicature becomes a computational default, particularly if Pro is not committed to backing for more than the greatest lower bound of his/her claim (Merin 1999). I see denial of ‘generically entailed’ propositions as extended cases of scalar implicatures. Consider further:

(28) a. Mary is a Republican but she is honest.

b. Mary-ka konghwatangwon-i-ki-NUN ha-ciman cengecik-ha-ta Republican -be-NMZ-CT do-but honest
   ‘Mary is a Republican but she is honest.’ (Korean)

(29) a. ta ge zi ai SHI ai dan shi zu qiu ti de hen hao
   he body short-CT-short but football kick well
   ‘His body is short but he plays soccer well.’ (Chinese)

b. ta lao shi lao. (他老是老.) (For Topic in Chinese, Xu and Danqing 1992)
   he old CT old ‘He is old CT.’
   ta lao shi lao (le), buguo shenti hen jiankang. (See Fig. 1.)
   he old CT old (了), but body very healthy 不过身体很健康.

(30) lu zhai SHI zhai, dan shi ke yi tong shi guo liang liang che
   road narrow-CT-narrow but can at the same time pass 2 CL car
   ‘The road is narrow but two cars can pass at the same time.’

(31) tui SHI tui le, dan shi mei diao xia qu
   push-CT-push but not fall down from car
   ‘(They) pushed (him) but he didn’t fall off the car.’
   she CT dump PERF 3 CL boy but not dump 4 CL
   ‘She dumped three boys but not four.’

   b. ta ben shi ben, \textit{dan shi} hen yonggong (H.-I. Hsieh p.c.) \textit{ben}: negative
   he dumb CT dumb but works hard not smart
   ‘He is dumb, but he works hard.’

   c. ta bu congmin shi bu congmin \textit{dan shi} hen yonggong
   he not smart CT not smart but very works
   ‘He is not smart but works hard.’

   d. ta congmin shi congmin \textit{dan shi} bu shi/suan tian cai
   he smart CT smart but not be/count as genius
   ‘He is smart but is not/does not count as a genius.’

   e. ta bu piaoliang shi piaoliang (\textit{dan shi} hai keyi) (K. Hsiao p.c.)
   she not pretty CT pretty but OK
   ‘She is not pretty (but she is OK).’

For (28) the conversational goal may be ‘So, let’s vote for her.’ For (29) it may be ‘Let’s have him join our team.’ In (31) from the use of the PA conjunction, we can infer that the speaker has a belief about the causal relation in the conditional form. There are inherently negative predicates such as ‘short’ and ‘old’ in (29) and ‘narrow’ in (30) and they reveal the negative force in CT constructions, forming negative scales (with ‘not tall,’ ‘not young’ and ‘not wide’ equivalently). Because of negativeness in those predicates including some in (32), positive (but weaker) scalar propositions are conveyed. CT works only if another value is on the right hand side in the scale. If the leftmost value is chosen for CT marking, anomaly arises (as in (19), (20) and from the negative scale of (23) a.: ??\textit{I didn’t TOUCH} CT \textit{her} (or ??\textit{kenturici-NUN anb-ass-e}), rather, the leftmost value in the negative scale with \textit{even} or to ‘even’ forms a negative polarity item).

The meanings of overt/covert CT–PA correlation are reflected in the prosodic features of the relevant structure. The pitch tracks of CT–PA (Fig. 1) and no CT marking–PA (Fig. 2) do not show much difference but these (CT)–PA pitch tracks and the CF–SN pitch track (Fig. 3) show a striking difference.
Let’s consider how CT occurs in Thai. It comes originally from a demonstrative *nan* ‘that’ but is attached to a nominal or verbal with a high (3) tone to become a Contrastive Topic marker. An Object CT is fronted at the same time, as in (34) b. Observe nominal CTs in (33) b. and (34) b.; verbal CTs in (35) b. In verbal CTs, we notice the construction of \([V–CT\ V]\), just like in Chinese:

(33) a. kaoli pen mitpratet khong thai (null Topic marker)
Korea COP friend of Thailand
‘Korea is Thailand’s friend.’ (No contrast, no implicature)

b. kaoli-\(\text{nan}_3\) pen mitpratet khong thai (\(\text{tae}:\) kuba maichai)
Korea-CT COP friend of Thailand but Cuba isn’t
‘Korea\_CT is Thailand’s friend.’ (But Cuba isn’t.) (Contrast, implicature)

c. dukmaj-\(\text{nan}_3\) suaj
flower-that pretty
‘That flower is pretty.’ Or ‘Flowers (generic)\_CT are pretty.’
(But worms are not.)

(34) a. tho kin thua\(_1\) lae:\(_w\)
she eat beans PERF
‘She ate the beans.’

b. thua-\(\text{na}_2\) tho kin lae:\(_w\) (\(\text{tae}:\) mai kin thualisong)\(_6\)
beans-CT she eat PERF but not eat peanuts
‘She ate the beans\_CT.’ (But she didn’t eat the peanuts.)

(35) a. khao ma lae:\(_w\) ((33)—(35), H. S. Jung, P. Potibal and K. Thepkanjana p.c.)
he come PERF
‘He came.’

6 If another CT marker \(-\text{ni}_2\) replaces \(-\text{na}_2\), the referent of the nominal involved must be visible.
b. ma-naz ma (tae: mai kheun wethi)
   come-CT come (but not rise stage)
   ‘(He) came_{CT}. (But (he) didn’t go on the stage.’)

For economy knowledge a scale may be <businessman, economist> but its negative scale inverses the order to <~economist, ~businessman>. Here, if ‘He is not an economist but he is a businessman’ is rendered in CT–PA, ‘Let’s hear from him’ would be the argumentative direction. But if it happens to be rendered in CF–SN, refuting his being an economist and arguing that he is a mere businessman (‘He is not an economist; he is a businessman’), the direction would be ‘Let’s not hear from him.’ Dascal and Katriel (1977), though with a nice distinction between PA aval and SN ela in Hebrew for the example, failed to make this kind of distinction in the information structure involved.

1.3. Suspension of Scalar Implicatures in Monotone-decreasing Contexts

Because of the denial implicature in CT, covert or overt, I believe, the relevant implicature is suspended in monotone-decreasing contexts such as before and if clauses. An overt CT marking in such contexts is not felicitous. Consider Korean examples:

(36) ?’sey mwuncey-NUN phwul-ki cen-ey manna-ca
   3 problem -CT solve-NMZ before-at meet-PROPOSATIVE
   ‘Let’s meet before we solve THREE_{CT} problems.’

(37) sey mwuncey-NUN phwul-un taum-ey manna-ca
   3 problem -CT solve-PREN after-at meet-PROPOSATIVE
   ‘Let’s meet after we solved THREE_{CT} problems.’

(38) taypwupwun -i/-?*-NUN ture o-myen sicak-ha-kess-ta
   most -NOM -CT in come-if start -do-will-DEC
   ‘If most people come in, I will start.’

In (38), -myen ‘if’ is a conditional operator and is monotone-decreasing. Therefore, its conversational scalar implicature ‘not all’ invoked by the quantifier
(even without CT) is suspended and ‘all people coming in’ is quite all right for the speaker’s starting.

1.4. Krifka’s Puzzle

We will examine Krifka’s (1999) puzzle about paradoxical implicature, ‘Sam has more than 3 kids’ not implicating ‘Sam does not have more than 4 kids,’ as in (39) b., and propose a solution to it, paying attention to theoretical issues brought about concerning scales and measurement:

(39) a. John has 3 kids. (Fox and Hackl (2005))
   \[\neg \Rightarrow \text{(implicates)} \quad \text{BUT} \quad \text{John does not have 4 children.}\]

b. Sam has more than 3 kids.
   \[\neg \Rightarrow \text{BUT} \quad \text{Sam does not have more than 4 kids.}\]

In doing so, we will argue that the recently attempted solution by Fox and Hackl (2005), in their ‘universal density’ claim, in spite of their very interesting direction of thought via DCS and OIG (40), seriously lacks necessary information structure and clause connection mechanisms for diverse interpretations.

(40) DCS: Density of Counting Scale: The scale used for counting, e.g. humans is dense.

OIG: The only implication generalization: Utterance of a sentence, \( S \), as a default, licenses the inference/implicature that (the speaker believes) \( \text{only} S \), where \( S' \) is (a minimal modification of) \( S \) with a focus on scalar items.

We argue that there are two interpretations for (39) b.: 1. a regular scalar implicature interpretation in which the number ‘3’ is accommodated (from the previous discourse or norm) in the context and \textit{more} (than) is assertive and invokes a scale of, say, \textit{<more, much more, far more>}, as well as \textit{< 2 more, 3 more, –>} . Then, the scalar implicature will include the denial of a stronger element in the scale such as \textit{far more}, forming a legitimate implicature ‘\text{BUT} Sam does not have \textit{far more} than 3 kids,’ with the number ‘3’ intact and expelling the puzzle. In this scalar interpretation, the utterance is topically connected
with the discourse context (weakly/neutrally asserted? (in Krifka 2005)), as a concessive admission of the utterance. Therefore, the implicature is introduced by the concessive connective BUT (PA-aber, as opposed to SN-sondern for metalinguistic negation). This scalar interpretation is conversational but if the utterance gets a Contrastive Topic contour (fall-rise, B accent, L+H*LH% from more) the change makes it conventional and computable in grammar, the scalar implicature being not cancellable. Scalar implicatures involve denial (or negation) of a stronger or high-ranking element, and that is why they cannot be maintained in monotone-decreasing and other nonveridical/uncertainty (including free choice) contexts.

In contrast, the second interpretation for (39) b. is a metalinguistic interpretation, couched in contrastive focus, as in (41) (see Schwarzschild 2005). Metalinguistic negation is also in the contrastive focus frame (Lee 2008). This kind of interpretation is refuting the other party’s expression and is non-scalar in the sense that it does not obey the principle of denying a stronger element in the scale, unlike in scalar implicatures that co-occur with concessive but:

\[
(41) \begin{align*}
\text{a. } & \text{Sam does not have } [2]_{\text{CF}} \text{ kids; he has } [3]_{\text{CF}} \text{ kids. (see Lee 2003b, coming from an alternative disjunctive question)} \\
\text{b. } & \text{Sam has } [3]_{\text{CF}} \text{ kids, not } [2]_{\text{CF}} \text{. (or } - [3]_{\text{CF}} \text{ kids, not } [4]_{\text{CF}} = \text{being non-scalar)}
\end{align*}
\]

(42) Harry has more than 7 children. Inga has more than 5 children. **But,** John only has more than \( [3]_{\text{CF}} \) children. (f modified as \( CF = \) contrastive focus here) (Schwarzschild 2005). The bold face S is not expected in Fox and Hackl.

From (42) we can get metalinguistically negated propositions ‘John does not have more than \( 7_{\text{CF}} \) children’ and ‘John does not have more than \( 5_{\text{CF}} \) children,’ as implicatures derived from the contextually accommodated alternative question ‘Does John have 7, 5, or 3 children?’

In conclusion, by mobilizing information structure categories of contrastive topic and contrastive focus, we do not need to be forced to adopt a bizarre ‘fractional child mystery’ in the semantics of non-technical but ordinary natural language. Individuation (as well as categorization) must be part of our innate psychological and cognitive competence.
1.5. Only-like Exhaustivity Operator

Groenendijk and Stokhof (1984) see the denotation of a question as a proposition which expresses the true (quality) and complete (quantity) answer, which is typically interpreted exhaustively, to that question in the same given world. They believe the answer Mary to the question Who came? generally implies no one else came and stipulates a semantic exhaustivity operator that relates the answer to the abstract underlying the question (see Lee 2008). The exhaustivity operator is assumed to have the semantic effect of the word only, defined as \( \text{Exh}(A, P) = \{ w : w \in A \text{ and there is no } w' \in A \text{ such that } w' <_p w \text{ and } w \text{ and } w' \text{ give the same denotation to all predicates distinct from } P \} \). (43) A., then, would mean ‘Mia and Sue came and no one else came.’ But other non-exhaustive (45) and wondering (44) interpretations are possible for the same question-answer in addition to an exhaustive interpretation (43). Consider the following dialogues:

(43)  Q: Who came?  A: Mia and Sue.  Q’: Why didn’t Joe come?

(44)  Q: Who came?  A: Mia and Sue.  Q’: But no one else?/Did anyone else come?

(45)  Q: Who came?  A: Mia and Sue.  Q’: And who else?

(modified from Sevi 2005)

The hearer has the option. But if the fragment answer has the CT contour \((L+H^*LH\%)(e.g.\text{in a situation where everyone is expected to come})\), a scalar implicature such as ‘but not Joe and Mary’ (from the contextually evoked scale \(<\text{Mia& Sue, Mia& Sue& Joe& Mary}>\)) is required and the response to the answer in (19) and ‘Did anyone else come?’ in (44) are odd. In Korean a fragment reply ending with the CT -nun is impossible (e.g. Mia-hako Sue-nun ‘Mia-and Sue-CT’) in all contexts including a post-verbal sentence final position (Lee 2008), although in English a CT intonation freely occurs S-finally and with fragments.

If, however, an answer is taken to have a semantic exhaustivity operator with the meaning of only, as in most adoptions of the operator (Zeevat Nd, Sevi 2005, Spector 2007, Fox 2006), the denial of the entire alternatives except
Information Structure in PA/SN or Descriptive/Metalinguistic Negation

the prejacent of the only clause or the one in the utterance is already at least entailed and/or asserted (and the prejacent is not asserted – ‘assertorically inert’, of which the status is controversial over whether it is presupposed or conventionally implicated or what not (Horn ms)). If that is the case, there is no room for scalar implicatures to arise of the same propositional content that has been already asserted or entailed. Consequently, the following conjunctions/discourses with PA type conjunction/DM are not acceptable:

(46) a. *Only Mia and Sue came but Joe and Mary didn’t come.

b. *I only bought three books but not more than that.

c. *I only bought three books. But I did not buy more than that.

d. *na chayk sey kwon-man sa-ss-e. haciman ke isang-un an sa-ss-e
   I book 3 CL-only buy-PAST-DEC But that more than not bought (=c)

Without only or -man, the sentences in (46) are perfect; the potential implicatures can be explicitly uttered. With only, the second conjuncts or utterances are redundant and with but/haciman there are incoherent. The DMs But (46) c. and haciman (46) d., without only, are monologic but they can occur dialogically with the same intent, e.g. A: *Mia hapkyekhaysse ‘Mia passed’ B: haciman swusek-un mot hayssse ‘But she didn’t ace the exam’). With only, the negative alternatives are already so assertive that the concessive use of but/(ha)ciman is not applicable in the conjunction or discourse. The concessive meaning of but is not truth-conditional; but and and are identical truth-conditionally. But in a PA but conjunction/discourse, the first conjunct/utterance is concessively admitted and the second one is stronger in its argument, claim or conclusion (Lee 2000; Anscombrem and Ducrot 1977). The exact translation of (46) c. is rather a negative S na chayk sey kwon pakkey an sa-ss-e ‘(Lit.) I didn’t buy beyond three books,’ which is not distinct from the second part of (46) d. and cannot be followed by it. Therefore, the use of only or its equivalent exh operator for generating a scalar implicature is not well justified.

As a consequence, Sevi (2005) argues that scalar implicatures are not implicatures and that they are merely entailments of exh(A, Q), where A is taken to be a complete and partial semantic answer to some question Q, which
may be explicit or implicit. The effect of the stronger meaning of \emph{A} is analyzed as an ambiguity – depending on the optionality of the applicability of \emph{exh} (applied to (43) \emph{A}. but not to (44) \emph{A} or (45) \emph{A}. His argument is based on Grice's maxim of quality – a \textbf{true} answer. As long as the stronger meaning of \emph{no one/nothing else} (in the given domain) is entailed, there cannot be cancellation. But sentences with \emph{only} and without it behave quite differently regarding their following conjunct/utterance, as we observed above, and the difference must be accounted for.

My claim is that the PA type conjunction/DM is adjusted to occur with a prior concessive conjunct or utterance for the following conjunct or utterance, which is argumentatively stronger, and that overt or covert CT is exactly concessive for coherence between CT and PA. If the second PA part is not uttered, it must be conveyed as a scalar implicature because of the CT in the prior utterance. I see this as basically semantic but linked to Gricean, dynamic, argumentation-theoretic, game-theoretic reasoning.

Although the conveyed meaning is motivated pragmatically by general inference (Levinson 2000), its working in grammar is already conventional and a way of representing it via CT as an operator is shown in Lee (2008). In other words, \textit{only} or \textit{exh} is too strong. If a \textit{wh}-word–information focus pair occurs in a question–answer pair, it is normally recast in an accommodated question–answer pair that contains a potential Topic–CT pair. A negative answer (if not metalinguistic) is typically associated with CT (see Lee (2008)). This explains why a CT utterance generates a scalar implicature and why a scalar implicature begins with a PA \textit{but}. So far, conjunction types and information structure have been studied separately.

2. Contrastive Focus (CF) and SN Correlation

2.1. \textit{SN} in CF frame and Non-scalar Nature of CF

Contrastive Focus (CF), based on alternative question, requires heavily stressed exhaustive answers and forms an MN frame with SN (\textit{anira} in Korean, \textit{er-shi} in Chinese, \textit{naku} in Japanese, \textit{ma} in Vietnamese, etc), denying the other party’s alternative with its echoic nature and affirming speaker’s alternative. We can
posit a CF operator under MN negation to block normal CT scalar implicature and other alternatives. Consider:

\[(47) \quad \text{Wo } \text{bu shi xihuan ta, } \text{er-shi ai ta.} \quad \left(\begin{array}{l}
\text{I not like her but love her}
\end{array}\right) \quad \left(\begin{array}{l}
\text{I don't LIKE}_{CF} \text{her but LOVE}_{CF} \text{her.}
\end{array}\right)\]

In Pitch track no. 3, we can observe the heavily stressed pairs *xihuan* ‘like’ and *ai* ‘love’. This is sharply contrasted with Pitch track no. 2 (CT) and no. 3 (covert CT), where the second conjunct does not show such a heavy stress. If the negation here is interpreted as a descriptive or denotational negation, a contradiction arises, because ‘love’ entails ‘like’. Consider further:

\[(48) \quad \begin{array}{l}
\text{a. ta } \text{bu-shi chuai le san ge nanhai, } \text{er-shi chuai le si ge (nanhai)} \\
\quad \text{‘She dumped not three boys but four’ (H.-I. Hsieh p.c.) (cf. Biq 1989).}
\end{array}\]

\[\quad \begin{array}{l}
\text{b. wo mei chuai san ge ren, } \text{er-shi si ge ren. (我没甩三个人, 而是四个人.)} \\
\quad \text{‘I kicked not three men but four.’}
\end{array}\]

\[(49) \quad \text{kunye-nun namca-rul sey myeng cha-n kes-i } \text{anira ney myeng cha-ss-ta} \quad \left(\begin{array}{l}
\text{she -TOP male -ACC 3-CL dump-PAST-COMP-NOM MN 4-CL}
\text{dumped}
\end{array}\right) \quad \left(\begin{array}{l}
\text{‘She dumped not three men but four.’ (Korean)}
\end{array}\right)\]

\[(50) \quad \text{kanojo-wa koibito-o san -nin futta-no-de-wa } \text{naku yo-nin futta} \quad \left(\begin{array}{l}
\text{she -TOP man-ACC 3-person dump-NO-DE-WA MN 4-person dumped}
\text{‘She dumped not three men but four.’ (Japanese, N. Sugita p.c.)}
\end{array}\right)\]

\[(51) \quad \text{kanojo-wa koibito-o san -nin futta-no-de-wa nai, } \text{ga huta-ri-wa futta} \quad \left(\begin{array}{l}
\text{‘She didn’t dump three men, but she dumped two.’ (CT)}
\end{array}\right)\]

\[(52) \quad \text{khong phai la de nhin } \text{ma la dep} \quad \left(\begin{array}{l}
\text{not right be plain look but be beautiful}
\end{array}\right) \quad \left(\begin{array}{l}
\text{‘(She) does not look plain but beautiful’ (Vietnamese, Thu Ba p.c.)}
\end{array}\right)\]
If those explicitly scalar terms are in the CF–MN construction, what happens is that normal scalar implicatures expected in the CT (overt or covert) are blocked and the affirmative second conjunct takes a stronger alternative, not the denial of such. This is what we see in the above examples. If the terms in the first conjuncts are descriptively negated, then the stronger alternatives in the second affirmative values cannot entail the non-negated affirmative and weaker value of the first conjuncts.

In the Japanese example (50), right before the MN connective naku, the form of -wa, which typically shows Contrastive Topic (see (51) a CT utterance, which is slightly odd because -wa is attached not directly to a scalar term san nin), shows up unlike in Korean, where the contrastively focused target of MN is NOM-marked, as all focused subjects are. The CT marker -wa must have been adopted to avoid the impression of confrontation and give an indirect sense of opposing the other party’s expression. If the NOM marker -ga is used in place of -wa in -de-wa naku, sentence (50) becomes ungrammatical in Japanese. The connective form -te can be optionally attached to naku. In Old Japanese, the – koto[COMP] naku – construction is claimed to be a propositional negation (Wrona 2006) and it must be related to metalinguistic negation, followed by an affirmative alternative proposition asserted by the speaker. A similar construction can also be found in the Korean metalinguistic construction – kes[COMP]-i[NOM] anira –. An expression by the other party is first clausally nominalized to be metalinguistically negated in both languages.

In Vietnamese, the MN or SN conjunctive marker -ma, as in (52), is distinct in form from the CT marker thi, as we saw in (1) b.

In Thai metalinguistic negation, there is no separate conjunction or connective discourse marker that shows up. Adverbials meaning ‘rather,’ ‘just’ and so on make up the function. Observe (H.S. Jung, and K. Thepkanjana and P. Potibal p.c.):

(53) prate:tpeanban khong thai majchaj kuba tae: pen kaoli tangha:k friend of Thailand not Cuba but COP Korea rather ‘Thailand’s friend is not CUBA but KOREA.’

(54) chan maj daj khae: cho:p khaw tae: chan rak khaw I not get-to just like her but I love her ‘I don’t LIKE her but LOVE her.’
There are varieties of syntactic form for CF–MN correlation, showing more restrictions than in CT–PA correlation, as follows:

2.2.3. **Negation first**

(a) \(S_1, S_2\): An MN clause and its alternative clause are put in sequence, separated by a comma or semicolon (e.g. (57) a.). An incorporated negation is impossible here, as in (57) b. This type is cross-linguistically general:

\[ \text{(57) a. It is not just } \textbf{difficult} \text{ to represent it in a first-order language; it is literally } \textbf{impossible} \text{ (E. Bach).} \]

\[ \text{b. That's } \textit{impossible} / \textit{NOT possible}, \text{ it's CERTAIN.} \]

(b) \( \text{not } [\alpha] \text{ but } [\alpha] \): The target of negation and its alternative element right after SN are of the same syntactic category. This type occurs in various languages such as English, German, and Hebrew. In their MN reading, (58) are bad:

\[ \text{(58) a. } \text{?*I am not happy but I am ecstatic (cf. I am not happy(,) but ecstatic).} \]

\[ \text{b. } \text{?*She didn't dump some guys but she dumped all guys.} \]

\[ \text{c. } \text{?*It's not good, but it is superb (cf. It's not good, but superb) (Kay 2004).} \]
(c) Nominal/Nominalized Category-NOM + Neg-Copular + SN Conj + S₂:
This type occurs in Korean as in (49, 59) and similarly in Japanese but a fossilized TOP marker instead of NOM appears in Japanese as in (41):

\[(59) \quad \text{ku kes-un [*kanungha-ci/kanungha-n kes-i] anira hwaksilhay.} \]
\[
\quad \text{that thing-TOP possible-C/possible-NOMNLZR-NOM Neg-Cop+SN}
\]
\[
\quad \text{certain}
\]
\[
\quad \text{‘That’s not POSSIBLE, it’s CERTAIN.’}
\]

(d) NEG – Focalizer-COP [Pred in Foc] SN Connective – Focalizer-COP [Pred in Foc]: This type occurs in Chinese, as in (47) and (48) a.

2.2.4. NEGATION SECOND/ASSUMED

(a) Typical:

\[(60) \quad \text{I bought THREE houses, not TWO.} \]
\[(61) \quad \text{I met ALL students, not SOME.} \]

\[(62) \quad \text{In the WHOLE WORLD (H’LL) maybe. ‘Not just in New York’ assumed.} \]
\[
\quad \text{cf. In Ithaca (B accent/Fall-rise/L+H*LH%) maybe. – CT}
\]
\[
\quad \text{For a previous comment: ‘He is the biggest fool in New York’ (Ladd 1980).}
\]

(b) Non-typical: Opposite Scalarity possible. Non-scalar.

\[(63) \quad \text{John is QUITE SLIM, he isn’t OVERWEIGHT (adapted from Y. Huang,}\]
\[
\quad \text{parasitically truthfuntional/descriptive) basically MN –echoic CF.}
\]

\[(64) \quad \text{Mary is MISERABLE, not HAPPY (or not (just) UNHAPPY).} \]

(c) Other Metalinguistic Constructions: Metalinguistic comparatives (64) and so on.

\[(65) \quad \text{He’s more NEGLIGENCE than VICIOUS. (NEGLIGENT is more apt.)} \]
\[
\quad \text{Cf. He’s more negligent than he is vicious = His negligence exceeds his}
\]
\[
\quad \text{viciousness (Kay 2004).}
\]
b.  ku-nun akha-ta-ki-pota thaymanha-ta = a (\textit{-t\AA} from \textit{ta–ko ha–} ‘quotative’)  
he-TOP vicious-DEC-NOMZR-than negligent NOMZR=Nominalizer

2.3. \textit{Scope Matters}

Scope ambiguities and MN possibility appear in Korean and English but not in Japanese or Chinese for a REASON clause.

\begin{equation}
(66) \quad \text{pwuca-yese kyelhon-ha-ci anh-assi-e}
\text{rich-be-because marry-CI not.do-PAST-DEC}
\end{equation}

a. ‘(He) didn’t marry (her) because she is rich.’ REASON > NEG (no high)

a’. yin-wei ta you-qian suo-yi \textit{mei jie-hun} (same as (66) a.) REASON > NEG

b. ‘(He) married (her) not because she is rich.’ PA REASON < NEG (CT tone)

b’. \textit{sui ran bu-shi} yin-wei ta-de qian jie-hun de (PA dan-shi –) (same as (66) b.)

c. ‘(He) didn’t marry (her) because she is rich; he married her because …’ MN

c’. \textit{bu-shi} yin-wei ta-de qian jie-hun de (er-shi –) MN\textsuperscript{7}

In Korean and English ((66) and (66) a. translation), the written sentence can be ambiguous with different scope relations between negation and the REASON clause. Its ambiguity, however, disappears if we hear the spoken utterances because of their information structure intonation differences. If the REASON clause has a Focus intonation (as a reply to ‘Why didn’t you marry her?’), REASON > NEG (no high) and the main clause can be elided. If the sentence is uttered with the Contrastive Topic intonation on the negated main predicate part (as a reply to ‘You married her because she is rich, didn’t you?’), REASON < NEG (CT high tone) and some scalar implicature interpretation

\textsuperscript{7} I am indebted to O. Yenyen, Xie Yitzhe, Chai Hua and Wang Peng for the reason clause data in Chinese.
can arise such that ‘But I married her because she is from a well-to-do family from the negative scale < not because she is rich, not because she is from a well-to-do family>, as in (66) b. (in English, the CT intonation starts from \textit{DIDN’T –}). But there is still another reading: MN, with the negation wide scope interpretation (66) c. Therefore, we must be very careful about negation wide scope: it can be either CT or (CF) MN. In the latter (CF) MN reading, REASON clauses do not form a scale and an alternative REASON can be put as ‘–; he married her because she is BEAUTIFUL.’ In Chinese and Japanese, such ambiguities do not arise because negation applies to an adjacent constituent, with no wide scope triggered, as in (66) a’. and (66) b’. Japanese does not have a long form negation, which is a source of ambiguity in Korean. A short form negation in Korean, only negating ‘marry,’ cannot have wide scope over REASON.

In Chinese, as in (66) b’, a CT REASON reading is possible with a subordinate connector \textit{sui-ran} ‘even though’ preceding \textit{bu-shi} ‘not,’ followed by (optional PA DM \textit{dan-shi}) \textit{ye kao-lv dao ta de jia-di} ‘(still) he considered her family situation.’ After the negative concessive utterance, a weaker affirmative utterance or implicature follows, as in Korean. If \textit{sui-ran} does not precede the negation, as in (66) c’, the utterance becomes a metalinguistic negation sentence and can be followed by an utterance or implicature giving a real REASON for marriage such as ‘He married her because he LOVED her.’ There is no scalarity working in CF–MN between ‘being rich’ and ‘loving,’ unlike in CT–PA.

2.4. MN Possible with CT Marking in Korean?

Once a CT marker is employed, a very strong bias for descriptive negation is inevitable (Lee 1999). Initially, ‘Mom’ and ‘Mother’ with CT marking are interpreted as separate individuals: Mom as one’s own and Mother as mother-in-law in Korean. People prefer the explicit MN construction, as in (68), for an MN expression. However, a few linguists get an MN reading from (67) with the CT markers. It is either odd in MN or parasitically metalinguistic (in a ‘list CT’ form, possibly). Even in this case, a coordinate conjunction marker -\textit{ko} is employed, not the concessive -\textit{ciman}, which basically requires CT in its denotational function:
Some other examples of CT in the literature, meant to be in MN, are of the same nature.

2.5. Adverbials Based on MN

One type of adverbials such as *POthong* ‘commonly’ and *YEkan* ‘relatively’ requires negation and has been dealt with as NPIs. But I argued for the first time (Lee 2008) that they take metalinguistic negation and that contrastive focus (CF) stress occurs on their first syllables exactly because they are metalinguistic. That is why a negative utterance with such an adverbial conveys an emphatically positive stronger degree (*emchengnakey* ‘extraordinarily’, *maywu* ‘very’) of the same predicate in the covertly underlying (at times overt) second conjunct. Furthermore, my metalinguistic negation origin claim of this type of adverbial NPIs well explains why they cannot co-occur with or be negated by internal negation, realized as a short form negation in Korean, unlike other normal NPIs. Metalinguistic negation can only take external negation (or long form negation). So far it has not been explained why these adverbial NPIs cannot occur with short form negation. The commonly accepted norms of degree evaluation (‘commonly’) are taken to be the other party’s expressions to be metalinguistically negated by the speaker. A connector cannot be the concessive PA-*ciman* or *haciman*. It should be -*un kes-i anira* or a simple pause just as in MN SN utterances. Similar adverbials behaving like this in Japanese,

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8 *YEkan*, but not *POthong*, is used in a short form negation with an MN reading recently by a very limited group of younger people.
English or other languages have not been discussed in connection with MN so far. They are certainly MN-based. Consider:

(69)  YEkan/POthong yeyppu-ci anha

commonly pretty-CI not

‘(She) is not COMMONLY pretty.’ (She is EXTRAORDINARILY pretty.)

(70) a.  fuTSUU-no kawaisa ja-nai (Japanese)

common -of prettiness not

‘(She) is not COMMONLY pretty.’

b.  fuTSUU janai

common (Adj) not

‘Not COMMON.’ (EXTRAORDINARY)

(71) a.  She was not A LITTLE upset. (She was VERY upset.)

b.  As a pianist he’s not HALF BAD ( – he’s VERY GOOD) (Bolinger 1972).

3. Scalar Implicatures: Representation Problem

Grice’s ‘what is said’ must belong to the truth-conditional content of an utterance, which is ‘equivalently’ context-relative sentence meaning (as in Relevance Theory (Carston 2004)). In contrast, ‘what is implicated’ (conventional and conversational) belongs to the domain of pragmatics for Grice and many of his post-Gricean heirs. Neo-Griceans such as Horn and Levinson would view scalar implicatures as generalized conversational implicatures, i.e. default inferences, via Grice’s quality and quantity maxims (whereas Relevance-Theorists tend to view them as explicatures – cases of enrichment or strengthening of the encoded content, e.g. *three* being interpreted as *exactly three*).

Since Groenendijk and Stokhof’s (1984) employment of the exhaustivity operator *exh*, stipulated as an answerhood constraint, with the semantic effect of *only*, within their theory of questions and answers, various semantically-
oriented approaches such as Krifka (1995) using this formal tool arose and Sevi’s (2005) semantic treatment incorporates the ‘no alternative else’ condition by \textit{exh} in the semantic/logical representation by means of \&. It adopts a truth-functional, model-theoretic interpretation like ‘only’ from Groenendijk and Stokhof. Its consequence is, as already indicated, that there is no room left for a scalar \textsc{Implicature} such as \textit{But no one else came}, \textit{But not more than three}, or \textit{But not all} to reside in.

After Horn’s restriction of alternatives to the domain of well-behaved entailment scales for pragmatic quantity-related scalar implicatures, people came to seek the possibility of housing them in grammar. Chierchia (2004) partly and Fox (2006) may be such efforts.

Fox (2006) in particular proposes a syntactic approach of positing a covert operator \textit{Exh} in LF as a lexical entry before every sentence with a focused scalar term, ‘akin to \textit{only}’. However, he needs an unnatural stipulation of changing the presuppositional status of the prejacent of \textit{only} or its equivalent \textit{Exh} to an assertive one. Still the problem remains: the denial of any stronger alternative is assertive (or entailment) and cannot be an implicature (see (46)). His model-theoretic formulation shows that denial of all stronger alternatives is formally \textbf{conjoined} (not needing \textit{But}) \textbf{assertively} (not implicature) to $p(w)$, with $p$ as the prejacent of \textit{Exh}. It should be in LF for his syntax. He adopts Sauerland’s (2004a) notion of innocuously excludable alternative. He uses the same mechanism of deriving scalar implicatures for free choice effects in an ingenious way.

He also goes back to Gricean pragmatic reasoning to avoid Neo-Gricean ‘unwanted (contradiction-creating) Ignorance Inferences’ and to consider all relevant alternatives. How the latter is connected to his ‘syntax’ is not clear.

Free choice effects of disjunction under an existential modal have been discussed for a long time by NPI people including Lee (1996) and Kratzer and Shimoyama (2002) and disjunction embedded under a positive existential modal and conjunction under a negative universal modal (quantifier) are logically related and the FC effects by the latter are rather naturally expected. My claim that disjunction in a Topic gets a conjunctive reading (Lee 2006c) and the notion of quantization for a ‘singular’ indefinite by Krifka (1998) may better explain the FC or conjunctive effects of disjunction in a sentence with non-quantized or ‘non-singular’ indefinites discussed by Klindinst (2005) and Fox (2006). In (72) a., \textit{in the fridge or the ice-bucket} is topical when \textit{beer} is
non-quantized, but if the DP is quantized as a bottle of beer the location PP is not topical. In (72) b., the disjunctive object is topical when the subject is non-quantized. Observe:

(72) a. There is beer (not ‘a bottle of beer’) in the fridge or the ice-bucket. FC

b. People sometimes take the highway or the scenic route (I. Heim, pc, attributing to R. Eckardt, pc) Fox (2006).

A scalar implicature cannot be lexically incorporated, as in *Mary did some but not all of the homework. For all I know he might have done all of it. And only the scalar meaning but not the logical meaning of only is employed for scalar implicatures (see Lee 2008).

On the contrary, Sauerland’s (2004b) attempt to account for MN blocking of scalar implicatures, rather than for deriving them, by dint of an operator corresponding to ‘only’ under the scope of MN negation is a possibility. But as I explained, the normal kind of scalar implicatures is generated because of the overt or covert CT operation in conjunction with the semantically elided PA. Therefore, my proposal is to posit some CT operator, which is responsible for concessivity and scalarity and for requiring PA, not SN, as conjunction with a scalar implicature in the second conjunct, in the case of semantic ellipsis. Otherwise an explicit second conjunct occurs after the PA marker.

The CT operator CT realized as a CT marker in various languages and the covert CT operator ct may be postulated for an adequate account of all the meaning relations and scalar implicatures that are real in the phenomenon of CT–PA-scalar implicatures. For CF–MN/SN, we can consider positing a CF operator that can handle blocking and non-scalar behavior of the construction (for PA/SN, see Schwenter 2002; Elke 2004).

Thus considered, if an overt CT, as a linguistic device (intonation and/or morpheme), generates scalar implicatures, they are conventional. The range of possible scalar implicatures can be stipulated by semantic principles but finding a fixed alternative is dependent on the context and this part must be done in pragmatics and be supplied to semantic representation. A fairly similar mechanism is needed for covert CT and PA cases. For a more satisfactory representation of discourse interaction, some game-theoretic ideas may have to intervene.
4. Conclusion

The truth-conditionally identical two types of conjunction PA and SN are found to be deeply rooted in the information structure of CT and CF, respectively. That is why they behave so differently. However, as the labeling of CT and CF shows, ‘contrastive’ is common to the two and languages attentive to this ‘contrastive’ nature, happen to have a single morpheme for PA and SN, as witnessed in English but and French mais. But most languages I investigated have distinct forms and functions. Basically, CT–PA is concessive and CF–SN is refutation-oriented.

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