Scalar Implicature and Metalinguistic Negation of *Nun* and *To*

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I. Introduction

This paper explores the implicatures arising from the Korean postpositional particles *nun* and *to*. Attention is focused on those quantitative scalar implicatures and the role of negation. The first section considers the implicature of *nun*. Section II reviews the analysis of *nun* by Choi (1989). Although Choi's analysis is fundamentally correct, I discuss several inadequacies. Section III investigates the conversational implicatures of *to*. I argue that some of the implicatures due to the postpositional particles should not be treated as logical entailment relations. Thus, they are better treated not within the framework of the traditional formal semantics as in Lee I.-H. (1989) but within the pragmatic framework outlined in Horn (1984, 1989).

II. *Nun* and Pragmatic Ambiguity

Some use of *nun* (or its allomorph *un*) in place of the ordinary accusative marker *lul*, or its allomorphic variant *ul*, gives rise to pragmatic ambiguity. For example,[1]

(1) 그 코치는 은메달은 싫어한다.
ku khochi-nun unmedal-un silhehanta.
the coach-TM silver medal-TM dislikes
'The coach dislikes a silver medal.'

What is asserted in (1) is the fact that the coach simply dislikes a silver medal. At the same the sentence may implicate (2):

(2) 그 코치는 금메달은 싫어하지 않는다.
ku khochi-nun kummedal-un silheha-ci ahnunta.
the coach-TM gold medal-TM dislikes-not
'The coach does not dislike a gold medal.'

Given the dichotomy of implicatures as described by Grice (1975), one can find that this implicature is conversational rather than conventional. First, the implicature is

"cancellable" (Grice 1975) or "defeasible" (Levinson 1983):

(3) 그 코치는 은메달은 싫어하는데, 그렇다고 꼭 금메달만 좋아하는 것은 아니다.
ku khochi-nun unmedal-un silhehanuntey, kulehtako kkok
the coach-TM silver medal-TM dislikes, but always
kummedal-man cohahanun kes-un anita.
gold medal-only like -TM not
'The coach dislikes a silver medal; however, it is not the case that he likes nothing but a gold medal.'

In (3) the implicature that the coach likes only a gold medal is cancelled without any contradiction. Second, the implicature is non-detachable in the sense that any other way of expressing the literal content of (1) in the same context would license the same inference. For instance, a sentence like 'The coach dislikes a medal for the runner-up' would result in the same implicature. Third, sentence (1) may have implicatures other than (2). For example, one of the implicata of (1) can be (4):

(4) 차라리 동메달은 싫어하지 않는다.
chalali tongmedal-un silhehaci-ahnunta.
rather bronze medal-TM dislike-not
'(He) does not dislike a bronze medal.'
(= '(He) would rather have a bronze medal.')

Since no conventional implicatures by definition can be indeterminate, the implicature is a conversational one.

Moreover, if we adopt Sperber and Wilson's (1986) definition of entailment, such that a relation of entailment holds between two sentences P and Q if "every conceivable state of affairs which would make P true would also make Q true", (1) does not entail (2). This is because there is a conceivable state of affairs in which (1) would be true and (2) false. The truth value of (2) cannot be predicted by the truth value of (1), if not vice versa, since we have noted that the utterance of (1) is compatible with a situation where the utterance of (4) holds true. Sentence (3) also provides a reason to believe that the relation between (1) and (2) cannot be that of entailment, because entailments cannot be cancelled.

How, then, should we account for the conversational implicatures of (1)? Can we think of a quantitative scale of medals ranging from gold to none as in (5)?

(5) <gold, silver, bronze, none>

As Gazdar (1979a) points out, the definition of the notion of "quantitative scale" is not easy, partly because there is no absolute criterion of similarity among the items forming a putative scale, and partly because the ordering relation imposed on a scale is hard to define. In any case, it is generally assumed that if one asserts that a weaker point (i.e., a leftwards item in the set (6)) on a scale obtains, then he implicates that a stronger point (rightwards in the same set) does not obtain. This assumption correctly predicts that (1) conversationally implicates (2). Then, what about the relation between (1) and (4)? Before answering this, let us consider the scale principle proposed by Fauconnier (1975). The principle says "if a proposition is true for the lower

element on the scale, it will be true for all the higher elements on the scale". Thus, the principle would predict that sentence (1) may implicate propositions containing a scalar predicate on a lower point on the scale, e.g. "The coach dislikes a bronze medal." Therefore, we have a contradiction here, since (1) can apparently implicate both 'The coach does not dislike a bronze medal' and 'The coach dislikes a bronze medal' at the same time.

I would like to suggest two ways of rectifying the situation. The first one is to dismiss (5) as a pseudo-scale, especially because it violates a condition on a quantitative scale – a proposition containing a stronger expression on a scale entails another containing a weaker expression. A sentence 'The player won the gold medal' does not simply entail a sentence 'The player won the silver medal.' However, the entailment condition is not a necessary and sufficient condition for a set of expressions to form a scale. Furthermore, even if we dismiss (5) as a pseudo-scale inspite of its qualitative homogeneity and sortal correctness, we still have to account for the implicature relation between (1) and (2) that conforms to the scale or principle on the one hand, and that between (1) and (4) on the other.

An alternative way of viewing the matter is to keep (5) as a kind of scale, if defective, and treats the utterance of (4) as a "flouting" of Grice's maxim of quality. On this view the quality maxim that says 'Try to make your contribution one that is true' is flouted to emphasize the speaker's assertion that the coach truly dislikes a silver medal. Thus by overtly infringing the quality maxim, a kind of irony can arise. As Levinson (1983) shows, such an irony can be successfully decoded because of the assumption of cooperation shared mutually by the interlocutors. In other words, the assumption that speaker and hearer both observe the Cooperative Principle and its component maxims permits the exploitation of these maxims to generate conversational implicata. Any reasonably informed participant will know that the utterance of (4) is not to try to deceive him but to force him to do extensive inferencing to some set of propositions. Therefore, the conveyed message that is meant without being said enables (4) not to contradict (2).

There is no dearth of examples of maxim-floutings in the literature. For instance, Grice (1975) discusses several cases of maxim exploitations in the so-called figurative speech. For example, a flouting of the quality maxim gives rise to an exaggeration in (6):

(6) 사실이라면, 나를 죽이시오.
sasil i-lamyen, na-lul cwuk-isio.
fact be-if I-AM die-causative
'If (it) is true, kill me.'

In most conceivable contexts, (6) should not be interpreted literally as a request to kill the utterer, but figuratively as a strong protest or denial of something that the speaker could not help otherwise.

To summarize, we have discussed a case of conversational implicature induced by the postpositional particle *nun*. Given the criteria of distinguishing implicature types, it falls into the category of conversational implicature. However, it does not seem to behave with respect to the pragmatic scale principle. I have discussed two ways to deal with the problem without committing myself to either one of them,

because I think it mandatory to establish the following three things first before discussing the matter any further.

First, although there are a few definitions available in the literature, e.g. Caton (1966), Gazdar (1979b), and Levinson (1983), there need to be a more well-defined set of criteria for setting up a scale, especially with respect to the notions such as 'sortal applicability,' 'semantic strength,' 'alternativeness,' etc. Second, Horn (1972) and Gazdar (1979a: 58) define functions that assign each sentence a set of scalar quantity implicatures potentially implied by that sentence. One of Grice's "implicature functions" applies to (7a) or (8a) to yield (7b) or (8b), respectively, as one of its implicatures:

(7) a. He won 5 gold medals.
    b. He won 4 gold medals.

(8) a. All men are mortal.
    b. Some men are mortal.

Gazdar's definition of the implicature function will not do as it stands, because it may return the b-sentences in (9)-(10) as an implicatum of the corresponding a-sentences since the function is allowed to "yield for any SENTENCE [sic] the set of potential quantity implicatures that the sentence could have":

(9) a. His goal was to win 5 gold medals.
    b. His goal was to win 4 gold medals.

(10) a. All men are created equal.
     b. Some men are created equal.

For the pairs of sentences in (9)-(10), one can hardly find the same kind of relation that holds between the pair of sentences in (7) or (8). It seems that there ought to be a constraint on sentences with some scalar predications like those in (9)-(10), such that they may not serve as the input to the function. This is not the goal of the present study, however, and we will not discuss the matter any further here.

Finally, as Lee I.-H. (1989) points out, languages seem to differ in expressing the effect of scalar implicature cancellation. For example, in English "...some, if not all, x..." or "...some, in fact all, x..." is perfectly grammatical, while in Korean such constructions are not impossible, but at least uncommon. Lee argues that it is not just a matter of syntax, because some native speakers find the example in (11) [his example (58)] contradictory:

(11) 약간의 학생들이 결석하였다, 사실, 모든 학생들이 결석하였다.
yakkanuy haksayngtul-i kyelsekhayessta. sasil, motun haksayngtul-i
several students-NM were absent in fact all students-NM
kyelsekhayessta.
were absent
'Several students were absent. In fact, all the students were absent.'

Any other way of saying the propositional content of (11) in Korean will end up with a contradiction. Therefore, he claims that "all x" does not scalar implicate 'some x.' We will discuss this matter later on.

III. Negation of *Nun*

Horn (1985) casts doubt on theories which treat natural language negation as either semantically ambiguous or invariably truth-functional. He argues that "negation must be taken as pragmatically ambiguous, with marked negation as an extended metalinguistic use of a basically truth-functional operator" (p.122). As an extended use of ordinary, descriptive negation, metalinguistic negation is used to object to any aspect of a previous utterance, including its phonetic realization or stylistic overtone, or its morphology, or any potential implicatures it may give rise to, as in (12):

(12) 에르에이는 없고, 엘에이는 있다.

a. [eruey]-nun epsko, [eley]-nun issta.
-TM not exist -TM exist
'There is no [eruey], but there is L.A. [eley].'

b. 그렇게 크지는 않고, 그냥 컸다.
kulehkey kkkkkkkkkkkhuci-nun anh-ko, kunyang khu-essci.
so big [emphatic] -TM not-but, just big-Past
'(It) is not hhhhhhhhhhuge, but just big.'

c. I'm not his daughter: he's my father.

Choi (1985: 400) claims that the postpositional marker *nun* cannot occur in such metalinguistic negation. For example, the negation marker *anila* in (13b) is used to deny the Q-implicated upper bound rather than to deny the truth of the proposition of the preceding sentence:

(13) 순이 남자 친구가 세 명이라며?

a. Swuni namca chinkwu-ka sey myeng i-lamye?
boy friend-NM 3 person be-QM
'I heard that Swuni has three boy friends; is it true?'

b. 세 명이/*은 아니라 네 명 이야.
sey myeng-i/*un anila ney myeng iya.
3 person-NM/TM not 4 person is
'It's not three. It's four.'

However, some scalar implicata arising from the particle *nun* can be cancelled by a negation which does not affect what is said, as exemplified in (14):

(14) a. 셋이 왔니, 넷이 왔니?
seys-i oass-ni, neys-i oass-ni?
3-NM came-QM, 4-NM came-QM
'Did three persons come or did four persons come?'

b. 셋은 아니야, 넷이야. 짝을 지어 왔거든.
seys-un aniya, neys iya. ccak-ul cie oass-ketun.
3-TM not 4 is pair-AM forming came-because
'It's not three but four, because they came in pairs.'

Negation in (14b) attaches externally to the conversational implicatum associated with the utterance of 'seys-i oassta, "Three persons came"' rather than internally to the proposition expressed by the same utterance. The use of *nun* in this context poses no problems.[2] (15) also shows that *nun* in metalinguistic negation is not prohibited.

(15) 그는 사과를 먹었다 하면 하나는 먹지 않고, 한 열은 먹는다.
ku-nun sakwa-lul mek-essta hamyen hana-nun mek-ci ahnko,
he-TM apple-AM eat-if one-TM eat-not,
han yel-un mek-nunta.
about ten-TM eat-Present
'He does not eat one apple; he eats a dozen, if he does.'

Nun does not block metalinguistic negation when it occurs with a modal predicate. Let us assume, following Horn (1972), that the expressions "it is necessary that p" and "it is possible that p" form a scale such that the former is stronger than the latter. Then in the exchange in (16) Speaker A uses a weaker expression *ulswu-nun iss* 'can,' the inference arising from which is metalinguistically negated in the utterance of Speaker B by means of a stronger modal notion *yahay* 'must.'

(16) 원한다면 할 수는 있어요.
Speaker A: wenha-untamyen ha-ulswu-nun iss-eyo.
want-if do-can-TM be
'If (you) want (me) to do (it), (I) can.'

할 수는 있는 게 아니라, 꼭 해야해
Speaker B: ha-ulswu-nun iss-nun key anila, kkok ha-yahay.
do-can-be -not without fail do-must
'It's not (you) can do (it), (you) must do (it).'

Choi (1989) further argues that *nun* occurs only in 'less than' descriptive negation. In the case of scalar predicates including quantificational adverbs, descriptive negation means "less than". She points out that when *nun* is attached to quantificational adverbs like *cacwu* 'often' or *kakkum* 'sometimes' those adverbs must be in the scope of descriptive negation. For example,

(17) 존은 술을 자주는/가끔은 먹지 않아요.
John-un swul-ul cacwu-nun/?kakkum-un mek-ci anhayo.
drink-AM often-TM/sometimes-TM eat-not
'John does not drink often/?sometimes.'

Compared to *cacwu*, *kakkum* is found toward the lowest end of the scale. Its scalar value is not high enough to occur in negative sentences, because "it is not possible to find a lexical item whose scale is 'less than'" the quantificational adverb *kakkum*. Conversely, quantificational adverbs whose scale values are very high such as *acwu cacwu* 'very often' in (18) cannot cooccur with *nun* in an affirmative sentence:

(18) 술을 아주 자주/아주 자주는 먹어요.
swul-ul acwu cacwu/??acwu cacwu-nun mekeyo.
drink-AM very often/ very often-TM eat

'(He) drinks very often.'

However, the scale value of quantificational adverbs is not a very reliable means by which to decide non-occurrence of *nun* in certain types of sentences. First, it is not always the case that scalar predicates that can occur in 'less than' descriptive negation are those terms whose scale value is greater than the midpoint, as illustrated in (19) and (20):

(19) 그 사람은 항상 웃는 편이지만, 가끔은 웃지 않아요.
ku salam-un nul wus-nun pyen-iciman, kakkum-un wus-ci ahnhayo.
the man-TM always smile-tend to-but, sometimes-TM smile-not
'The man almost always smiles, but sometimes he does not.'

(20) 이 상품은 그렇게 조금은 많이는 팔지 않아요.
i sangpwum-un kulehkey cokum-un/manhi-nun phal-ci ahnhayo.
this merchandise-TM so small-TM/much-TM sell-not
'(We) don't sell such a small/large amount of this merchandise.'

Furthermore, contrary to the claim that quantificational adverbs whose scale values are very high such as *cacwu* 'often' cannot be followed by *nun* in an affirmative sentence, we can have examples like (21) and (22):

(21) 오줌을 자주는 누지만, 시원하지 않아요.
ocwum-ul cacwu-nun nwu-ciman, siwenha-ci anhayo.
urine-AM often-TM urinate-but comfortable-not
'(I) urinate often, but (I) don't feel comfortable.'

(22) 술을 자주는 먹지만, 절대로 취하지 않아요.
swul-ul cacwu-nun mek-ciman, celtaylo chwuiha-ci anhayo.
drink-AM often-TM eat-but never get drunk-not
'(He) drinks often, but he never gets drunk.'

In summary, Choi's claim that the *nun* which is attached to scalar predicates cannot occur in metalinguistic negation and that it can occur only in 'less than' descriptive negation is empirically inadequate.

IV. Scalar Implicature of *To*

It has been generally assumed that the lexical meaning of the postpositional particle *to* is 'too' or 'also.' For example,

(23) 철수도 시험에 떨어졌다.
Chelswu-to sihem-ey tteleciessta.
exam-in failed
'Chelswu, too, failed in the exam.'

In uttering (23) the speaker implicates that someone else who is not Chelswu also failed in the exam. As Lee I.-H. (1989) points out, this type of implicature is conventional, since it does not depend upon the utterance situation, but arises from the pres-

ence of the particular lexical item *to*. However, that is not the only implicature that the sentence can have. In an appropriate context where the interlocutors know that Chelswu was the student least likely to fail in the exam, the same sentence could be translated as 'Even Chelswu failed in the exam.' This is a case of what Fauconnier (1975) calls "pragmatic superlatives." Fauconnier (1975) distinguishes two types of superlatives: grammatical superlatives that contain the superlative morphology as in (24) and pragmatic superlatives that obtain the superlative meaning contextually as in (25):

(24) a. The brightest student couldn't solve the problem.
b. That trip was the most adventurous one I've ever been on.

(25) a. Iago would betray his own brother.
b. Buddha would not forgive such a criminal.

Pragmatic superlatives are quantifying, and so (25a), for example, implicates 'Iago would betray anybody.' In contrast, some grammatical superlatives such as those in (24) can give rise to quantificational readings, but not all grammatical superlatives are quantifying, as illustrated in (26):

(26) a. She loves the smartest boy in my class.
b. Try to find the best-looking girl in town.

(26a) asserts the relation only between 'she' and 'the smartest boy' and never implicates something like 'She loves all the boys in my class.'

Now, the postpositional particle *to* can induce a quantificational reading.[3]

(27) 오나시스도 이 곳을 살 수 없었다.
Onassis-to i kos-ul sa-ulswu epsessta.
this place-AM buy-could not

One of the possible readings of (27) is 'Even Onassis couldn't afford this place.' This *even* reading implicates (28):

(28) Nobody could afford this place.

On the other hand, (27) also can be interpreted as 'Onassis couldn't afford this place, either.' This *too* reading semantically entails (29):

(29) Other people besides Onassis couldn't afford this place.

Note that the *even* reading entails the *too* reading, but not vice versa. Moreover, the *even* reading implicates that of the people under consideration Onassis was the most likely to afford the place, but no such implicature arises from the *too* reading. I argue that the relation between (27) and (29) is different from that between (27) and (28): the first one is a relation of logical entailment but the second is one of conversational implicature. Thus, the ambiguity due to the particle *to* can be disambiguated only by virtue of the consideration of the utterance situation. However, Lee I.-H. (1989) argues that the implicature the delimiter *to* gives rise to is a conventional one. For instance, he claims (30) conventionally implicates (31):

(30) 미자가 가장 무거운 그 돌도 들 수 있다.
Mica ka kacang mwukewun ku tol to tul swu issta.
NM most heavey the stone too lift can
'Mica can lift the heaviest stone, too.'

(31) 미자가 가장 무거운 그 돌보다 덜 무거운 돌을 다 들 수 있다.
Mica ka kacang mwukewun ku tol pota tel mwukewun tol ul
than less heavy stone AM
ta tul swu issta.
all lift can
'Mica can lift all the other less heavy [i.e., lighter] stones.

He goes on to argue that the relation between (30) and (31) is one of entailment. Although it is the case that the utterance of (30) "conventionally conveys" (31), not all occurrences of *to* behave in the same way. For example, the superlative adjective in (32) implicates the universally quantified phrase in much the same way as the superlative in (30) does:[4]

(32) 가장 똑똑한 학생도 낙제하었다.
kacang ttokttokhan haksayng- to nakceyha-assta.
most bright student too fail-Past
'The brightest student failed.'

(33) 가장 똑똑한 학생보다 덜 똑똑한 학생은 다 낙제하였다.
kacang ttokttokhan haksayng-pota tel ttokttokhan haksayng-un
than less
ta nakceyha-assta.
all fail-Past
'All the other less bright students failed.'

Unlike in (30), however, the implicature of (32) is cancellable as in (34):

(34) 가장 똑똑한 학생도 낙제했는데, 철수가 붙었다.
kacang ttokttokhan haksayng-to nakceyhass-nunte, Chelswu-ka puthessta.
but NM passed
'The brightest student failed, but Chelswu passed.'

Suppose Chelswu is not the brightest student of the group under consideration and had not been expected to pass. In this context (34) is not a contradiction. However, (33) and (34) cannot have the same truth value simultaneously. Moreover, entailments cannot be cancelled, as we have seen earlier. Thus, it is not the case that (32) entails (33). Nor is it the case that (33) is a conventional implicature of (32). The cancellability test proved the point.[5]

As a consequence, we have two types of *to*'s: 1) those inducing conventional implicatures and 2) those inducing conversational implicatures. For the first type, the scalar implicature that they induce can be treated as the traditional notion of entailment within formal semantics as in Lee I.-H. (1989). For the second type of *to*'s—*to* as a particle that gives rise to conversational implicatures, any attempt to account for the *to* in terms of truth-conditional semantics that rules out the consideration of the

context is bound to fail. By way of an example, consider (35) first:

(35) 여당 의원 일부도 그 법안에 찬성하였다.
yetang-uiwen ilpwu-to ku pepan-ey chansengha-assta.
ruling party M.P.'s some-too the bill-to support-Past

Lee (1989: 499) claims that "some x" entails, rather than implicates as customarily assumed, "not all x." Therefore, he would predict (35) entails (36):

(36) 여당 의원 전부가 그 법안에 찬성하지 않았다.
yetang-uiwen cenpwu-ka ku pepan-ey chansengha-ci ahn-assta.
ruling party M.P.'s all-NM the bill-to support -not -Past
'Not all of the ruling party M.P.'s voted for the bill.'

At the root of this claim lies his observation that a conjunction like '...some x, in fact all x,...' sounds awkward enough to be avoided in Korean, as we saw in section II. As a logical relation, however, entailment must be defined in terms of purely logical vocabulary. I do not know how to save this without affecting the whole system of truth-conditional quantificational logic.

Metalinguistic negation also poses a problem for Lee's entailment analysis. Lee should wrongly predict (37) as ungrammatical, since the metalinguistic negation unduly negates the ENTAILMENT of the prior part of the sentence.

(37) 여당 의원 일부도 그 법안에 찬성한 게 아니라,
yetang-uiwen ilpwu-to ku pepan-ey chansenghan key anila,
ruling party M.P.'s some-too the bill-to support not
여당 의원 전부가 그 법안에 찬성하였다.
yetang-uiwen cenpwu-ka ku pepan-ey chansengha-assta.
ruling party M.P.'s all-NM the bill-to support -Past
'Some of the ruling party M.P.'s didn't vote for the bill, all of them did.'

If (35) is true, then in every conceivable state of affairs, (37) ought to be false, because (36) is entailed by (35) and thus must also be true. Nevertheless, (37) is a perfectly grammatical sentence compatible with the situation where (35) holds. The problem arises from the attempt to reduce generalized quantity implicatures to logical entailments. In the following section we try to build an alternative analysis based on Horn's Q-implicata analysis.

V. The Q-Principle and Implicature

In a dualistic approach to non-logical inferences, Horn (1984) recognizes two antinomic forces operative in natural languages: the Q Principle and the R Principle. Of the two principles, we are concerned here with the Q Principle. It is a hearer-based economy for the maximization of informational content, collecting Grice's Quantity-1 maxim, and the Avoid ambiguity & Avoid obscurity submaxims of Manner. The Q-Principle may be exploited to generate upper-bounding, conversational implicata. For instance, if I say "...p...," I implicate that (for all I know) "...at most p..."

Horn points out that the primary examples of Q-based implicata arise from scalar predications. Let us consider examples in (38):

		1-sided reading	2-sided reading
(38)	a. He has 3 children.	'...at least 3...'	'...exactly 3...'
	b. He ate some of the cookies.	'...some if not all...'	'...some but not all...'
	c. It's warm.	'...at least warm...'	'...warm but not hot...'

The sentences in (38) assert a lower bound, 'one-sided' reading (i.e., 'at least...') and implicate an upper bound ('at most...'). The upper-bounding implicata are generated by the exploitation of the hearer-based Quantity 1-maxim, therefore called Q-based implicata. The assertion and the implicatum collaborate to convey the corresponding 'two-sided' reading (i.e., 'exactly...'). The one-sided reading of 'It is possible that Ross will win' is "It is at least possible that Ross will win," whereas the same sentence can be understood pragmatically as 'It is possible but not certain that Ross will win' for the quantity-based implicata. The negations of scalar predications like those in (38) are ordinarily understood as negating the one-sided values which are the putative logical forms of these sentences, while the metalinguistic negations of the same sentences must be understood as negating the corresponding two-sided understandings.

The scalar implicature due to the postpositional marker *to* can be accounted for by the Q-Principle. Let us consider sentence (35) in the previous section again:

(35) 여당의원 일부도 그 법안에 찬성하였다.
yetang-uiwen ilpwu-to ku pepan-ey chansengha-assta.
ruling party M.P.'s some too the bill-to support-Past
'Some of the ruling party M.P.'s, too, voted for the bill.'

Sentence (35) is ambiguous: the one-sided reading is that 'Some, if not all the ruling party M.P.'s voted for the bill, too,' while the two-sided reading is 'Some, but not all the ruling party M.P.'s voted for the bill, too.' This ambiguity is pragmatic, rather than semantic or lexical. If the speaker tells her interlocutor that *some* of the M.P.'s voted for the bill, she licenses the hearer to draw the inference that *not all* the M.P.'s voted for the bill. This process can be explained as follows: As long as the speaker is expected to obey the Q Principle, if she knew that all of the M.P.'s voted for the bill, it would have been incumbent on her to obey the Q Principle and say so; the assumption that she is obeying Quantity allows the hearer to infer that she did not know for a fact that the stronger predication, i.e. All of the M.P.'s voted for the bill, held.

Finally, we have seen that the metalinguistic negation of the Q-implicatum of (35) can be problematic for any analysis that treats the ambiguity of (35) as semantic. But no such problem arises for our pragmatic analysis since the Q-based implicatum can be readily cancelled by a negation which does not affect what is said, i.e. metalinguistic negation. This is indeed what we see in (37).

VI. Summary

The present paper has examined various aspects of implicatures arising from the postpositional particles *nun* and *to*. We have seen that they provide evidence against the

claim that all cases of implicature are cases of truth-conditional ambiguity (Kempson 1986). Rather, Horn's theory of implicature that utilizes an independently motivated principle, the Maxim of Quantity, combined with his theory of negation, offers an adequate way of dealing with the data we have seen in this paper.

NOTES

1. I use the traditional term "Topic Marker (TM, for short)" for the particle *nun* only because of the lack of a better term. The other abbreviations given in the text are: AM: Accusative Marker, NM: Nominative Marker, QM: Question Marker.
2. Note that the particle *nun* is realized as *un* when preceded by a noun ending with a consonant.
3. The superlative NP followed by the particle *to* does not always yield a universally quantified reading. For instance, (i) does not implicate (ii):

   (i) 가장 기대하였던 선수도 일회전에 탈락하였다.

   kacang kitayha-assten senswu-to ilhoycen-ey thallakha-assta.
   most expect-Past player *too* *first round-on* *fall off-Past*
   'The most favored player was eliminated on the first round.'

   (ii) 모든 선수가 일회전에 탈락하였다.

   motun senswu-ka ilhoycen-ey thallakha-assta.
   all player -NM
   'Every player was eliminated on the first round.'
4. In contrast, the particle *nun* does not give rise to the same kind of implicature:

   가장 똑똑한 학생은 떨어졌다.

   kacang ttokttokhan haksayng-un tteleciessta.
   most bright student-TM failed
   'As for the brightest student, he failed.'
5. In the sense that the particle *to* can induce conversational implicature, the particle is different from the English word *even*. As Karttunen and Peters (1979) discusses, a sentence like Even Bill likes Mary conventionally implicates 1) Other people besides Bill likes Mary, and 2) Of the people under consideration, Bill is the least likely to like Mary. None of these implicata is cancellable without resulting in a contradiction. Thus, *even* is similar to *kkaci*, *mace*, or *cocha* in Korean since the implicature they give rise to is less cancellable than *to*. Compared with *ii*), *i*) is less acceptable.

   (i) ?미나마저/까지/조차 낙제하였지만, 인수가 붙었다.

   ?Mina-mace/kkaci/cocha nakceyhaass-ciman, Insu-ka puthessta.
   failed -but -NM passed
   'Even Mina failed, but Insu passed.'

   (ii) 미나도 낙제하였지만, 인수가 붙었다.

   Mina-to nakceyhaass-ciman, Insu-ka puthessta.

   Also, Lee (1979) claims that the particle *kkaci* has an affirmative sentence in its scope while the particle *mace* has a negative sentence in its scope. However, nothing syntactic should constrain their use; the particles are interchangeable in most cases as in example (i).

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