Assertion Strength*

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This paper attempts to provide a semantic and pragmatic basis of the notion *assertion strength* in a way that captures generalizations across various linguistic phenomena. This paper will deal with emphatic expressions involving focus, polarity sensitive items, hyperbolic expressions, and concession. While defining the notion *assertion* along the lines of Stalnaker (1978), this paper will revise and broaden the idea of *strengthening* proposed by Kadmon and Landman (1993). It will be suggested that *assertion strength* in general can be categorized into two dimensions: informational quantity and pragmatic inference. It is hoped that this proposal will not only account for Ladusaw's (1979) *downward entailing* context use of *any*, but will remedy some of the problems found in Kadmon and Landman's approach and achieve a cross-linguistic generalization including English and Korean. This account will cover various cases involving focus, polarity sensitive items in English and Korean including NPIs like *any* and *even* in English and *amwu* and *-(la)to* in Korean. The assertion strength of various statements can be compared in terms of the relative size of the set of propositions that can be inferred from or are implicated by a statement in a given context. That is, the strength of an assertion will be defined as a relative concept and the set size of inferable or implicated propositions can be compared based on the size of the potential alternative set in a given context.

1. Introduction

In their discussion of *any*, Kadmon and Landman (1993) (K&L, hereafter) introduce the notion strengthening and they observe that the negative polarity item *any* is an element that strengthens the statement it occurs in, that is, the semantic operation associated with it must create a stronger statement. K&L further claims that negative polarity

items in general have such lexical properties that make the statement
they are in stronger. Let us consider the following pairs of examples in
(1) and (2).

(1) a. I don't have money to spend on clothing.
    b. I don't have any money to spend on clothing.

(2) a. If you move, I will shoot you.
    b. If you budge an inch, I will shoot you.

(1b) and (2b) are seen as stronger statements than (1a) and (2a),
respectively, and K&L's notion of strength can be summarized as in (3)

(3) Strengthening
    Any is licensed only if the widening that it induces creates a
    stronger statement, i.e., only if the statement on the wide interpretation
    entails the statement on the narrow interpretation.
    (Kadmon and Landman, 1993:369)

Let me exemplify this notion by using (1). Since *any* induces widening,
we will widen the range of money sums to include a small amount that
could be used to buy used clothing, for instance. Thus, the following
entailment holds for the pair (1a) and (1b).

(4) wide: I don't have any money, even a small amount to spend on
    used clothing ==> narrow: I don't have money (to spend on
    ordinary clothing).

In (1b) the speaker evokes wider range of money sums by using *any*
than he does in (1a). Although this is one plausible way of handling
any, their notion of *strengthening* does not seem to be general enough
to account for some other constructions that create strong statements.
Consider (5)

(5) A: Who came to the meeting yesterday?
    B: ᴊᴏʜɴ did.
    B': JOHN did.
    B": Only John did.

(5B) has the B accent[1] on *John* and it means that it simply is true that John came; it does not mention anything about other candidates. On the other hand, (5B') has the A accent on *John* and it means that John came but other candidates did not come. That is, (5B') implicates exclusiveness as contrasted with (5B). (5B") looks equivalent to (5B') in its interpretation. However, ordinary speakers would feel that (5B") is a stronger statement than (5B'), which, in turn, is stronger than (5B). It is not clear how we can apply (3) to (5B), (5B') and (5B"). Does (5B') entails (5B)? If we have a situation in which no one else but John came, we can say that it is at least the case that John came. Then, we can say (5B') entails (5B). However, (5B') does not seem to provoke *widening* as comparable to (1b). There does not seem to be any kind of widening involved in the use of JOHN in (5B"), either. In (5A) the speaker simply assumes that there is a commonly shared set of candidates who are expected to appear in the designated place. Likewise, the A-accented phrase in (5B') picks out one member exclusively from that set without widening the domain. Thus, the condition *widening* does not seem to apply here in the sense of the term employed by K&L. In what follows I will propose that the strength of an assertion should be measured in terms of size of the set of the propositions that can be inferred from the expression in question.

2. Assertion Strength vs. Informativeness

In this paper the two notions *assertion strength* and *informativeness* will be distinguished and this distinction is motivated partially by the difference in sources that give rise to inference we make and partially

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1. Small capitals are employed to represent what Jackendoff (1972) calls B accent, and larger capitals are used to stand for so called A accent. Roughly speaking A accent has a high pitch onset and a falling end whereas B accent has a relatively low pitch onset with a rising contour. See Jackendoff (1972 : 352-359) for further details.

from the effort to reflect the intuition of native speakers of the
language used in this paper. Let us consider the following dialogue.

(6) Who came to the meeting yesterday?
    a. JOHN did.
    b. JOHN AND BILL did.
    c. John and Bill did, and no one else came.
    d. JOHN and BILL did.
    e. I have no idea.
    f. I don't have a faintest idea.

Let us assume that the meeting mentioned above is supposed to be
attended by the members of a committee of 5 people. Further suppose
that no one but John and Bill actually came to the meeting. Let us
also imagine that someone who knows the situation can have as his
answer the alternatives of (6a) to (6f). In this situation (6a), (6b), (6c),
and (6d) are not lies, but the others are. Lies like (6e) and (6f) are not
different from each other in terms of the *informativeness* in the sense
that the addresser may not acquire the needed information. In the sense
of *informativeness* to be defined in this paper, (6a) is less informative
than (6b), which in turn is less informative than (6c). As will be argued
later, (6c) will turn out to have the same level of information quantity
as (6d) has. The B accent in utterances like (6a) and (6b) indicates that
the speaker is giving out only a portion of information that he has.
However, they are not untrue statements as mentioned above. In (7),
informativeness will be defined in a way that captures the quantity of
information as discussed in connection with the utterances in (6).

(7) Informativeness[2]
    Utterance A is more informative than utterance B in a situation, if
    and only if
    Utterance A semantically or pragmatically entails utterance B in
    that situation.

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2. If I say an utterance A 'pragmatically entails' an utterance B, it means that the
   implicatures of A is counted to calculate the entailment relation with B.

According to (7), (6b) semantically entails (6a). Thus, (6b) is more informative than (6a). (6c) entails (6b) semantically; and (6d) entails (6b) pragmatically. Therefore, (6c) and (6d) are more informative than (6b). (6c) spells out what (6d) implies pragmatically. Thus, these two statements entail each other in an actual utterance situation. However, English speakers somehow feel that (6d) has a stronger tone than (6c), although it may only be an implicative one. My definition of informativeness in (7) is somewhat similar to K&L's definition of strength of utterances, but it does not need to incorporate the notion *widening*. (6c) has no special pitch pattern and this type of pitch pattern is more appropriate in a situation where the addressee is ignorant of the total number or set of alternatives as shown in (8). Suppose Fred and Rick were in the same graduating class of about three hundred students and they are talking about an alumni meeting that was usually attended by an unknown number of people.

(8) Fred: Do you know who came to the meeting yesterday?
    Rick: John and Bill did.
    Fred: Anyone else?
    Rick: Oh, there were other guys, but I didn't know them very well.

On the other hand, sentences with A or B accent seem to have different pragmatic connotations than ordinary phrases do, and they seem to have constrained interpretation. Thus, unlike (6c), (6b) and (6d) are more appropriate in a situation where small number of people are expected to come[3]. In this case the total set is not very large. I will say that *John and Bill* of (6c) is informationally new and that *JOHN and BILL* of (6d) is focused among the pragmatically *activated set* in Gundel et al.'s (1993) term, or *evoked* entities in Prince's (1981) term. The difference between these two phrases in the information level is indicated by the pitch

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3. Thus, it is very awkward to imagine a discourse pattern such as (8) in which the pitch pattern of (6d) is used. One anonymous referee pointed out that (6d) could be used in (8) and I believe that there is a situation where such use is legitimate. In that case, I believe, the speaker and the addressee would be part of a small clan-like group among the whole alumni and, thus, the alternative set (i.e., candidates) would be equal to the small group in such a case.

differences of these phrases. According to Prince (1981), *John and Bill* in (6c) or (8) is *unused new* information whereas *JOHN and BILL* in (6d) is from an *evoked* set.

These differences seem to establish different communication mechanisms. In (6c) the speaker is simply providing new information without any pragmatic or emotional implications. The speaker and the addressee have no idea of who are expected to come except that some of his alumni will come. This is because it is an alumni meeting. That is, the possible candidates or alternatives are determined by the lexical meaning of [alumni meeting]. In other words, the set of alternatives is determined by the lexical meaning of the phrase in question.

In (6d), however, the situation is different. This statement can be used appropriately when the speaker and addressee have some shared knowledge about who are expected to come. Let us assume the speaker and addressee have already mentioned 5-7 candidates (e.g., in a committee) during the discourse. In this case, since all the alternatives are evoked, saying that some of the members came naturally implicates that the rest of the members did not come[4]. Thus, JOHN and BILL of (6d) can be called (pragmatic) exclusive focus. In other words, on hearing (6d), the addressee is expected to calculate who did not come. This is a pragmatic request, or what Grice (1975) calls cooperation that is imposed on the addressee and this seems to give the utterance a strong tone. In the level of semantics the speaker is giving out portion of semantic information, and lets the addressee make inferences using his pragmatic resources available to him.

Although K&L's definition does make a due distinction between different utterances as shown in the case of the examples in (1), it does not provide a comprehensive account as stated above. In what follows I will argue that an utterance with a pragmatic implication has stronger assertion tone than the statements that semantically spell out pragmatic

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4. As one anonymous pointed out, it is not clear what is the dividing line between lexically determined sets and textually evoked sets. The author of this paper can say that one's lexical knlolwdge or memories of his/her alumni, is part of long term memory whereas textually *activated* or *evoked* set of entities are stored in short term memory. In pschology it is generally accepted that short term memories can store up to about 7 to 8 items whereas one's capacity of long term memories can differ form others' due to various factors. See Atkinson et al. (1996 : 256-273), for instance.

information. This implicates that utterances making use of background or contextual information are assertively stronger than the one that does not. In what follows I will define *assertion strength* in a way that distinguishes semantic inferences from pragmatic ones and captures K&L's notion *widening* as well as the definition of informativeness proposed in (7).

3. Semantic vs. Pragmatic Inferences

This paper will crucially distinguish between semantic inferences from pragmatic ones in order to account for assertion strength. This paper will argue that assertion strength is basically a pragmatic notion that makes use of various kinds of implicatures and background knowledge. This distinction will also be utilized to contrast the notion *informaitveness* with the *strength* of an utterance.

3.1. Focus constructions

Traditional grammarians treated the focus construction as one of the 'assertively strong' constructions or emphatic constructions, but there have not been satisfactory explanations as to what constitutes assertive strength. I will use the notion of focus in a restricted sense[5], by accepting Rooth's (1985) notion of alternative sets and slightly modifying Gundel's (1999)'s taxonomy of focus. In doing so, I will concentrate on the mechanism of inference that determines 'excluded' members form the alternative set, since focusing basically involves including a certain item in focus excluding others from predication. This process creates a sense of exclusiveness, exhaustivity, and contrastiveness in different

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5. Traditionally, focus was seen as new information and this traditional notion of focus is conceptualized as *update potential* of a sentence and formalized in terms of *link, focus,* and *tail* in Engdahl and Vallduvi (1996). This paper rejects this newness view of focus, but accepts Rooth's (1985) alternative semantics of focus. In this theory one of the most important properties of focus is the existence of alternative set. In the ensuing part of this paper I will briefly characterize various kinds of focus by considering how the alternative set is determined and how non-focused items acts in connection with the predication. See Kim (2000) for further details.

cases. (See Gundel (1999) and Kim (2000) for further details.) Now, even if we think of alternative sets, the set members as a whole could have different informational level in different cases, as we have seen in the possible differences between (6c) and (6d). If the alternative set is in the domain of *evoked* entities, the inference that follows will be discourse-oriented; if the addressee is not familiar with the entities in question, s/he will begin with the basic lexical meaning of the utterance.

Let us go back to (6c) and (6d), as repeated in (9a) and (9b), respectively:

(9) a. John and Bill did, and no one else came. (=6c)
     b. JOHN and BILL did. (=6d)

According to the inferential theory of verbal communication, in order to get his message across, the speaker shows appropriate verbal evidence that is needed to let the addressee to interpret the significance of the utterance (See Sperber and Wilson 1995: 190 ff). As mentioned above, (9a) is intended to give out information that is less context-dependent and, thus, lexically or semantically interpreted from the word string given in the preceding context. Thus, *John and Bill* in (9a) can be what Kiss (1998) calls informational focus since it is considered a new piece of information. Kim (2000) calls this semantic focus since the alternative set is semantically determined, i.e., depends on the basic lexical meaning of the words uttered. On the other hand, in (9b) the alternative set is textually or situationally evoked. On the semantic level, (9b) gives out a portion of information, and lets the addressee mobilize his pragmatic knowledge and make inferences based on the given information. *JOHN and BILL* in this case is what I will call exclusive focus[6], since the rest of the alternatives are easily defined by looking at the evoked individuals and they are excluded from predication. The actual pragmatic inference will be conducted in such a manner that exhausts all the relevant reasoning involving each evoked individual.[7] Thus, there

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6. Kiss (1998) call this identificational focus, since its main function is not giving new information, but identifying or referring to entities.

7. I assume that pragmatic inferences are conducted individually since the number of activated individuals is not large. So, the hearer of (9b) is expected to make an inference about each individual of the known set. On the other hand, semantic inferences are

are many inferences to make on the part of the addressee, and these pragmatic inferences are a kind of burden on the addressee. This kind of inferential volume and pragmatic load seems to give a sense of strength to the utterance. As will be shown later in connection with concession and other emphatic constructions, the exietence of pragmatic inferences on the part of the addressee is the integral part of strong statements.

In the case of contrastive focus, its assertion strength is demoted since it cancels the exclusiveness implicature. In (10B), JOHN AND BILL is a contrastive focus and does not provoke the same kind of inference as the exclusive focus in (10B') does.

(10) A: Who came to the meeting yesterday?
     B: JOHN AND BILL did.
     B': JOHN and BILL did.

(10B) simply says that it is true that John and Bill came, but does not imply that the rest did not come. Although the expression JOHN AND BILL implicates the existence of the contrast set (the rest), but does not exclude any members from the given predication[8]. Furthermore (10B') entails (10B), but not vice versa. Thus, we can say (10B') is assertively stronger and more informational than (10B).

3.2. Hyperbolism

It is well known that politicians use many hyperbolic expressions in order to give a strong impact to the audience. Let us examine what characteristics some hyperbolic expressions have and how hyperbolic expressions can be assertively strong. One of the important characteristics of the hyperbolism is to use gradable values that can be ordered on a pragmatic scale in the sense of Fauconnier (1975). In addition, in many cases the value denotes cognitively significant units on that scale.

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assumed to be made collectively. Thus, in (9a), the whole set is divided into two subsets, i.e., [John and Mary] and [the rest], and each set is predicated collectively, although this is a debatable point and needs further research.

8. Kim (2000) calls this a contrastive focus.

Consider the English examples in (11) and (12), and the Korean examples
in (13) and (14)[9].

(11) a. John drank the two bottles of wine to the last drop.
     b. We waited for him to the last minute.
     c. Freeze! If you budge an inch, I will shoot you

(12) a. I could eat a horse.
     b. I could drink a bucketful.
     c. Don't you see a log in your eyes?

(13) a. Mwul-ul han   kep-to   mos masi-ess-ta.
        water-acc one cupful-even   not drink-pst-de
        '(I) didn't drink even a glass of water.

     b. Mwul-ul han   mokum-to   mos masi-ess-ta.
        water-acc one mouthful-even not drink-pst-de
        '(I) didn't drink even a mouthful of water.

     c. Mwul-ul han   pangwul-to   mos   masi-ess-ta.
        water-acc one drop-even   not   drink-pst-de
        '(I) didn't drink even a drop of water.

(14) a. Mwul-ul han kamasot-ilato   masil swu issta.
        water-acc one kettleful-even drink-could-de
        '(I) could drink even a kettleful of water

     b. Mwul-ul han mal-ilato   masil swu issta.
        water-acc one bushel-even   drink-could-de
        '(I) could drink even a bushel of water

     c. Mwul-ul   han cwucenca-lato   masil swu issta.
        water-acc one pitcherful-even drink-could-de
        '(I) could drink even a pitcherful of water'

The examples in (11) and (13) are instances of what I would call
infinitesimal hyperbolism and the ones in (12) and (14) could be called

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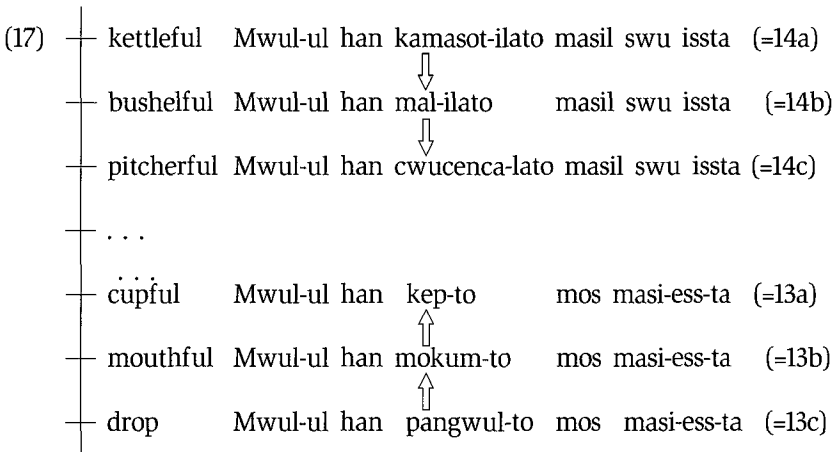9. The examples in (13) and (14) are from Kim (1998).

grandiose hyperbolism. In the case of infinitesimal emphasis, as in (13), a statement involving the smaller unit can evoke an upward entailment as shown in (15).

(15) (13c) ==> (13b) ==> (13a)

Thus, (13c) is the strongest statement since it entails the rest; (13b) is the next strongest; and (13a) is the weakest. In the case of grandiose hyperbolism, the direction of entailment is reversed with respect to the quantity of *mwul* 'water' and we can have the following inference relations:

(16) (14a) ==> (14b) ==> (14c)

The different directionality of entailment can be graphically shown as in (17)

(17) ┬─ kettleful   Mwul-ul han kamasot-ilato masil swu issta (=14a)
      │   ⇩
      ┼─ bushelful   Mwul-ul han mal-ilato   masil swu issta   (=14b)
      │   ⇩
      ┼─ pitcherful Mwul-ul han cwucenca-lato masil swu issta (=14c)
      │
      ┼─ . . .
      │   . . .
      ┼─ cupful   Mwul-ul han kep-to   mos masi-ess-ta (=13a)
      │   ⇧
      ┼─ mouthful   Mwul-ul han mokum-to   mos masi-ess-ta (=13b)
      │   ⇧
      ┴─ drop   Mwul-ul han pangwul-to mos masi-ess-ta (=13c)

scale (involving quantity of water) and **directions of inference**

As we can see, two different kinds of hyperbolic expressions involve pragmatic inferences of different directionality, making use of a kind of pragmatic scale based on our knowledge. Furthermore, others being equal, a larger set of 'competing' alternative objects will give rise to a stronger statement. For instance, 'she can beat any boxer' has an

assertion force stronger than 'she can beat any woman boxer' since the former entails the latter. This notion of assertion strength can simply be extended to informationally strong statements as well.

In view of the preceding discussions involving hyperbolism and focus, we can define assertion strength in terms of informativeness and inference domain. A statement can be more informative than others because of semantic or pragmatic features of the statement. The inference domain of a certain statement could be either semantic or pragmatic, but that should be restricted to informationally relevant cases like entailment, implicatures, and presuppositions. Thus, for example, adding truisms does not increase information level in a discourse situation. Now, assertion strength can be defined as shown in (18).

(18) Assertion Strength
     Statement A is stronger than statement B if and only if
     i) A entails B, and B does not entail A, and
     ii) A evokes a pragmatic inference.

According to (18), we can talk about assertion strength when there is a pragmatic inference involved. Thus, (19a) and (20a) are stronger statements than (19b) and (20b), respectively.

(19) a. John didn't budge an inch.
     b. John stood still.

(20) a. John is taller than any other boy in my class
     b. John is very tall.

We can think of a chain of inference regarding (19a), as in (15). Thus, (19a) in principle implicates that John did not move two inches or more distances. (19b) could mean a perfect stillness[10], but it is stated in a way that does not evoke the addressee's cooperation or participation. Thus, it has less assertive impact on the addressee than (19a) does. In some

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10. In terms of the proto-type theory of cognitive linguistics, e.g., Rosch (1973), the semantic (or conceptual) application of a word could be extended not only to typical cases but to marginal cases. Thus, the kind of semantic or lexical dependence as in (19b) may bring the addressee a wide range of realities in addition to the typical cases.

sense, (19b) is speaker-oriented. In other words, all the information is given out from the speaker. Thus, there is no burden imposed on the part of the addressee. (20b) is similar to (19b) in this respect. However, (20b) could be considered a strong statement in some sense because *very* usually denotes a 'high' degree of quality on a scale. Nevertheless, *tall* and *very* need a reference group in order to take on any substantial meaning, and without it (20b) is not completely meaningful. For instance, no one can tell whether or not John is taller than a certain set of students in his class. Like (19b), (20b) is a neutral statement involving no immediate connection with a real life situation and, thus, lacking a real life implication[11].

3.3. Concession and inference

Concession is not a popular topic in linguistics but it has much to do with the lexical item *even* in English and with *-(la)to* in Korean. Many proposals regarding *even* in English and *-(la)to* in Korean posits the scalar implicature following Fauconnier's (1975), or a universal quantification approach as in Lycan (1991), or implicature theory as in Bennet (1982). This paper adopts some of the points from Both Fauconnier's and Bennet's proposals on this issue. Consider Bennet's proposal as briefly introduced (21) and (22).

(21) Even if he drank just a little, she would fire him

(22) Even if the bridge were standing, I would not cross

(22) could be uttered in a situation where the speaker is watching over the raging waters of the river and the ruins of the bridge. (22) can be true whether [[the bridge were standing]] holds true or not. On the other hand (21) has a reading on which the conditional clause is a pure conditional. Thus, according to Bennet (1982) if he does not drink at all, he will not get fired. In order to distinguish these two different semantic facts, the examples like (21) are dubbed as 'standing-if' conditionals and

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11. (20b) can be a neutral statement if it is stated with no particular stress pattern. If it is stated with an emphatic stress on *very*, we are dealing with a different problem. Adding an emphatic stress seems to signal an elated or heightened state of attunement expected of the addressee.

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the ones such as (22) are categorized as 'introduced-if' conditionals[12].

Although I agree with Bennet that the basic meaning of *even* can be extended to concession clauses, I will depart from him and would introduce an alterative set or sister members[13] into the analysis of concession. I also disagree with Bennet and think (21) can have two readings as shown in (23)[14]:

(23) (i) He would get fired however little he drank (i.e., if he drank)
        alternative set = {A LITTLE, MORE THAN A LITTLE, QUITE
                 A LOT, MUCH, VERY MUCH, ... }
   (ii) He would get fired whether he drank just a little or not
        alternative set = {HE DRANK A LITTLE, HE DRANK MUCH,
                 HE DRANK VERY MUCH, HE DRANK
                 NOTHING ...}

In fact, these two readings can be translated differently into Korean as shown in (24a) and (24b).

(24) a. Ku-ka cokum-ilato swul-u masi-myen, kunye-ka ku-lul
      he-nom a little-even liquor-acc drink-if she-nom   he-acc

      haykohal kes-ita.
      fire   will
      'If he drink even a little amount of liquor, she will fire him'

   b. Ku-ka cokum swul-ul masi-te-lato, kunye-ka ku-lul haykohal
      he-nom a little liquor-acc drink-even-if she-nom   he-acc fire

      kes-ita.
      will
      'Even if he drink a little amount of liquor, she will fire him'

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12. 'Standing-if' conditionals are called so since *if* is outside the scope of even and so it looks as if *if* stands in one place, while even moves around semantically for its scope. 'Inroduced-if' conditionals are purely added or introduced to the consequent clause without changing the truth value of the proposition and its name comes from these characteristics.

13. My proposal is not drastically different form Bennet (1982) since he also assumes 'neighbor', which is a set of alternative sentences without *even*. However, the domain of XP in the scope of *even* extends to include individuals or properties only within Bennet's system.

14. This has independently been pointed out by Lycan (1991).

What is assumed in this paper is that events or situations[15] can act as simple entities just as individuals or properties do. This approach can open up a possibility of interpretation as shown in (23ii) and we can dispense with the dichotomy of 'even-if' clauses of Bennet's. The 'standing-if' clause is neither necessary nor inevitable within my analysis. The ambiguity of (21) is explained by specifying the scope of *even*. In (23i) the scope ranges over amounts of liquor drunk and in (23ii) its scope involves propositions denoting events or situations.

What this papers wants to point out here is that concession involves an alternative set, especially a set of situations that have the lowest likelihood of occurrence. Setting up such least likely situations or conditions can naturally evoke or entail a more probable situation using our ordinary background knowledge, as shown in (25)

(25) [If he drinks JUST a little, she will fire him] → [If he drinks a little, she will fire him] → [If he drinks quite much, she will fire him] → [If he drinks much, she will fire him] → ...

Let us assume the boss is puritanic or very strict on liquor consumption as when the Prohibition Amendment was enforced in the 1930's in the U.S. Then, as shown in (25), according to inference based on this background knowledge, her firing him will happen in the least probable situation. What is implicated here is that in an ordinary or more probable situation she is more likely to fire him. For the interpretation in (23i) a kind of scalarly implicated objects like the ones shown in (25) can be posited to explain pragmatic inference, and this can be a source of strength in the statement. Likewise, the interpretation of (23ii) somehow has to posit a sequential order in terms of likelihood of the

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15. Events are seen as abstract semantic entities, usually denoted by a proposition. Thus we could think of an abstract singing event and a dancing event, separately or compositionally. A situation could still be thought of an abstact semantic object but it is a more inclusive notion such that it could admit various kinds of events in one situation at the same time. Therefore, the relation between an event and a situation can be stated as a 'hold-true' or 'compatability' relation. So an event *e* can hold true or not ture in (i.e., compatible or not compatible with) situation s. Further we can think of inference relations between (sets) of events and between (sets) of situations. However, in many case the two terms can be used interchangeably since an event is always hooked to a situation in the real world and situations can be characterized by events.

various situations. However, the chosen or stated alternative is taken to be placed as the least likely precursor for the event depicted by the consequent clause to happen.

In this paper the reading shown in (24b) will be taken as a case of concession since concession will be defined as involving three objects; one is the event depicted by the consequent clause (e_2 in (26)); the second is an event that denotes the least likely condition for the consequent to happen (e_1 in (26)); the third is the set of alternative events or conditions (E in (26)). The meaning of concession arises when a situation or event happens in spite that the preconditions for the event are in such a configuration that they are least likely precursors to the event. The notion *concession* posited in this paper can be articulated as shown in (26):

(26) Concession
      Given events e_1, e_2, and a set of alternative events E, the statement translatable into
      '$e_1 \rightarrow e_2$' involves concession if and only if
   i) the speaker infers, and expects the addressee to make inference
      $\forall e_i$ [S ($e_1 \rightarrow e_2$) $\rightarrow$ S ($e_i \rightarrow e_2$)] based on (iii)
   ii) for some e_i S (e_1) is distinct from S (e_i), and
   iii) $\forall e_i$ [Likelihood ($e_1 \rightarrow e_2$) < Likelihood ($e_i \rightarrow e_2$)] according to the background knowledge, where S(e) is a set of situations which are compatible with event e, and $e_i \in$ E.

As Bennet (1982) mentioned and as many others agree, *even* can denote unexpectedness or surprise. This paper claims that unexpectedness can be derivable from (26) with a little modulation of the definition. In case of concession, what matters is the existence of alternative events that are more likely to happen than the events in question (i.e., the *even* event). This complex definition of concession involving events and likelihood seems to capture the intuitive meaning of concession since concession seems to presuppose an occurrence of an event in a very unlikely situations.

In contrast, unexpectedness can be accounted for by looking at individuals as alternatives instead of dealing with events. Consider (27).

(27) Even Bill passed the oral test.

Suppose that a class is taking an oral test over a few days and that everyone is worrying about it. Further suppose Bill was a very unlikely person to pass the test. However, if in fact he passed the exam, someone can comfort other students by saying (27). In this case, the speaker infers, and expects the addressee to infer, that Bill's passing the test will implicate other students' passing.

Thus, in this case, the alternatives will be other students in the class, the speaker and the addressee can infer in a manner similar to the one shown in (28), which is 'individual analogue' of (26).

(28) Given student s_1 and set of alternative students S, the statement
     translatable into 'P(s_1)' involves unexpectedness if and only if
   i) the speaker infers, and expects the addressee to infer, that $\forall s_i$
      [P (s_1) → P(s_i)] based on (ii)
  ii) $\forall s_i$[Likelihood (P (s_1) < Likelihood (P(s_i)) according to the background
      knowledge, where $s_i \in$ S.

It should be further noted that if everyone shares the knowledge that Bill is the least likely person to pass the test, the use of *even* is redundant as shown in (29), but in this case *Bill* has a higher pitch than others part in English and Korean.

(29) Well, ... BILL pass the oral test.

(30) BILL-i   hapkyekahay-ss-nuntey,   mwue. (Korean)
      Bill-nom   pass-pst-con   well/what
      'Well, (I am saying) Bill passed (What makes you worry?)'

There may be other ways to convey both the expressed and implicated meaning of (28), especially in Korean, since this language has a variety of pragmatically oriented particles such as *-to, -mace, -kkaci, -cocha.* What is clear in this type of expression is that there are inferences that have the effect of universal quantification, although it is based on likelihood.

As argued in Hong (1983) and Yoon (1988), the Korean particles -*to* and -*lato* can express a kind of emphatic meaning as shown in (31).

(31) a. Einstein-to   ku mwunchey-lul mos pwul-ess-ta.
　　　Einstein-too the problem-acc   not solve-pst-de
　　　'Even Einstein could not solve the problem'

　　b. Chelswu-to   ku mwuncey-lul pwul-ess-ta
　　　Chelswu-too the problem-acc solve-pst-de
　　　'Even Chelswu solved the problem'

　　c. ?*Chelswu-lato ku mwuncey-lul pwul-ess-ta
　　　Chelswu-too   the problem-acc solve-pst-de
　　　'Even Chelswu solved the problem'

　　d. Chelswu-lato ku mwuncey-lul pwul-ess-ul   kes-i-ta
　　　Chelswu-too the problem-acc solve-pst-mod   thing-is-de
　　　'Even Chelswu could probaly have solved the problem'

(31a) is readily interpreted 'emphatically' in a way as proposed in (28), since Einstein's not solving the problem would enable us to infer that all the other people could not solve the problem. In (31b), the concessive interpretation may not be readily available. However, if the discourse participants are aware of, and attuned to, the contingent fact that Chelswu is the least likely person to solve the problem, then we can infer from (31b) that all the other alternative students could solve the problem.

Furthermore Korean has an explicit concession marker -*lato* as shown in (31c) and (31d). It should be noted that the concessive marker -*lato* calls for a modal marker in Korean as the contrast between (31c) and (31d) indicates. This is consistent with the claim of this paper that it involves alternative events or situations as shown in (26)[16]. Especially

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16. Modals are usually seen as introducing alternative situations. This seems to fit in the observations made in Korean linguistics. That is, -*lato* introduces sentence-level semantics. (31d) differs from (31a) and (31b) in that the former always expresses concession whereas the latter can have another interpretation. Thus, *Chelswu-lato* in (31d) can be relatively safely interpreted as containing events or situations, not individuals. Thus, (31d) may have to be interpreted by the pattern in (26) instead of (28).

the situation depicted is very much less likely to happen in the real
situation, thus being unrealistic, and this seems to be one of the points
where concession differs from the mere 'unexpectedness' case where
there is no alternative situation imagined.

As we have seen above, concession, unexpectedness, and what is
called emphasis in Korean involve 'likelihood-based' pragmatic inferences
and this enables us to infer many alternative expressions. According to
our definition in (28), we can say (27) has a relatively strong assertion
strength than the *even*-less version of (27).

3.4. Other emphatic expressions

Not only positively implicated propositions but also negatively
excluded implicatures can sometimes contribute to making a statement
stronger. For instance, -*man* in Korean and *only* in English are considered
to give rise to a stronger statement. The notion of assertion strength can
be extended to such examples as (32) and (33).

(32) A:. Nwuka wuli   hakkyo-lul taypyoha-ci?
          who   our   school-acc represent-que
          'Who is going to represent our   school?'

     B: *Minho-man-i   taypyoha-l keya.
         M.-only-nom   represent-adn will
         'Only Minho will represent us'

(33) A: Yeki pan taypyotul   cwung nwuka ka-ci?
         here class representatives among who   go-que
         'Who is going to go among the class representatives here?'

     B: Ce-man   ka-l keyeyo.
         I-only   go-adn will
         'Only I will go'

As Choe (1996) pointed out, -*man* in Korean and possibly *only* in
English express exclusiveness. As the contrast between (32) and (33)
shows, -*man* can be used when the discourse domain is relatively
restricted[17]. Thus, the use of *man* in (33) implies that other alternatives

except the speaker will not go. This limited use of *man* seems to be analogous to other discourse particles considered in section 3.1. In the same vein as Horn (1969) did with English *even* and *only*, we may say that the delimiter *man* may imply exclusion of what *to* includes by implication and that the Korean particle *to* may imply the inclusion of what *man* excludes by implication. If this is the case, we can say the use of *man* may trigger assertively strong sentences just as *to* does.

4. Conclusions

This paper has argued that the assertion force of a statement comes from two sources: informational quantity and pragmatic inference. Informational quantity can be captured by entailment between propositions or events depicted by propositions, and pragmatic inference is seen as imposed on the addressee so that he may apply his background knowledge to a pragmatically limited domain of discourse. The source of assertion strength seems to be related to requesting the addressee to make a series of linguistic inference based on his pragmatic (especially textually evoked, or situationally obtained) knowledge, thus achieving a universal quantification effect. I have also claimed that lexically strong words such as *very*, *many*, etc. are in some sense vague and that they do not give the kind of assertion force as much as expressed by the pragmatic particles.

There may be other pragmatic structures or expressions that give out strong assertion forces. One of the candidates is a rhetorical question. This is an area that needs to be studied in a separate paper because it involves kinds of interrogatives, which is another topic that needs further research.

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17. As one anonymous referee pointed out, the domain for the use of *-man* is not clearly defined here. Perhaps it may not be easy to define in this paper, and, in fact, the usages of *-man* and *-man-i* differs from each other, too. (33B) can be rendered awkward by adding the particle *-i*, but (32B) sounds unacceptable with or without *-i*. See Kim (2000) for his discussion of related issues.

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