

# **The Relativity of Information between 'What is Said' and 'What is Unsaid' in Generalized Conversational Implicature**

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## **1. Introduction: the Said, the Unsaid, and Informativeness**

Within the neo-Gricean theory of Generalized Conversational Implicature (GCI) (Atlas & Levinson 1981; Gazdar 1979; Hirschberg 1986; Horn 1972, 1984; Levinson 1987, 2000), this study revisits the long-standing pragmatic inquiry concerning the communicative economy that some things are BETTER left unsaid, whereas some things MUST be said. The explication of what the speaker doesn't bother to say is achieved by the recovery of the unsaid information, which is worked out through the inferential processes imposed on the so-called 'what is said.' In a radically simplified sense, what is communicated or implicated without being explicitly said is to be dubbed under the remnant of 'what is said,' i.e., 'what is unsaid.' Just as defining the notion of 'what is said' is a murky job, presuming the remnant of 'what is said' under the rubric of 'what is unsaid' is another tricky job. Concerning this indiscriminate distinction, I look forward to delving more sincerely into the nature of informativeness, mainly for the well-known strands of Quantity-1 maxim and Quantity-2 maxim (also known as Q-implicature and R-, I-implicature).

Roughly speaking, the main topic of this paper is the relationship between 'what is said' (= the Said) and 'what is unsaid' (= the Unsaid). This project must indeed converge on the big and small issues in several different post-Gricean frameworks. More specifically, I will approach Quantity implicatures in an effort to tell the relationship between the Said and the Unsaid. This will be guided by relating the 'relativity' of quantity information with the qualitative aspects of information such as (i) speaker's epistemic modification, (ii) speaker interests or speaker expectations.

The more restricted goal of this paper is as follows:

(i) While observing the problematic data concerning the most commonly encountered linguistic devices for quantity implicatures, it will be examined how the strict distinction between the two principles of Quantity, i.e., Q- and R-based principles, sometimes fails to account for quantity implicatures.

(ii) I cast a doubt on the determinacy requirement of scalar implicature, by showing that the inferential constraints on deriving more informativeness are closely related to the qualitative aspect of 'known/unknown' information. That is, I will suggest that the indeterminacy of quantity implicatures owes much to the qualitative aspects of the information, which has to be reflected in the relativity of information between the Said and the Unsaid.

(iii) Through the discussion, I will reckon on the idea that the two conflicting Quantity-1 and

Quantity-2 maxims do not actually work in opposite directions, but the interactive aspects of, and the resolution of, the Q- and R-based principles can be reduced to a reinforcing mechanism based on an unmarked principle of informativeness. A main observation for supporting this view will be done in consideration of the availability of the notion 'additivity'(van der Auwera 1997) as opposed to the notion 'substitutivity.' The relative weight of the amount of quantity information in scalar implicature will be shown to be rectified by appealing to Auwera's (1979) 'additivity' as an alternative to 'substitutivity.'

The organization of the paper is as follows: Section 2 offers a short review of the neo-Griceans. In Section 3, I pursue an idea that scalar implicature failures are due to the 'qualitative' aspects of 'known vs. unknown' status, in addition to the comparison of the quantity information. In view of this idea, I will go on to offer a view that the inferential explication of the Unsaid really reflects the qualitative aspect of epistemic modification between 'what is known' and 'what is unknown.' In Section 4, I will show that the notion of 'additivity' has a priority over 'substitutivity' for accounting for the scalar implicature failures. Section 5 is the conclusion.

## 2. A Review of the neo-Griceans

### 2.1. Quantity Implicatures: Quantity-1 and Quantity-2

Let us begin by outlining briefly the basic components of the Gricean program. Recall the Quantity maxim, which runs in the two sub-maxims of (1a) and (1b). As in (2)-(4), the main reformulations of Quantity maxim were provided by Horn (1972), Levinson (1987, 2001), Carston (1995) and others. (2a)-(4a) represents Q-based principles, and (2b)-(4d) represents R- or I-based principles. Note that Horn's R-principle in (2)<sup>1</sup> is almost equivalent to Levinson's I-principle.<sup>2</sup>

#### (1) Quantity maxim

- a. Quantity-1 submaxim: Make your contribution as informative as is required.
- b. Quantity-2 submaxim: Do not make your contribution more informative than is required.

#### (2) (Horn 1972)

- a. Q-principle: Say as much as you can.  
(lower-bounding principle, including upper-bounding implicata)

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1) Horn's principles are not simply the replacement of Quantity maxims. Hearer-oriented Q-principle incorporates Grice's maxims of Quantity-1, Manner-1/2, and speaker-oriented R-principle incorporates Grice's maxims of Quantity-2, Manner 3.

2) Levinson (1987) reformulated Quantity-1 maxim as Q-principle and Quantity-2 principle as I-principle, dividing each principle into two parts of speaker's maxim and recipient's corollary. In both cases of speaker's maxim and recipient's corollary, the Recipient's corollary in response to Speaker's maxim serve to induce the GCIs.

#### (1) Q-principle

Speaker's maxim: Do not provide a statement that is informationally weaker than your knowledge of the world allows.  
Recipient's corollary: take it that the speaker made the strongest statement consistent with what he knows.

#### (2) I-principle

Speaker's maxim(the maxim of minimization): 'Say as little as necessary' i.e. produce the minimal linguistic clues sufficient to achieve your communicational ends.

Recipient's corollary(enrichment rule): 'Amplify the informational content of the speaker's utterance, by finding a more specific interpretation, up to what you judge to be the speaker's m-intended point.

- b. R-principle: Say no more than you must.  
(upper-bounding principle, inducing lower-bounding implicata)
- (3) (Carston 1995)
  - a. Q-heuristic: What isn't said, isn't the case.
  - b. I-heuristic: What isn't said, is the obvious.
- (4) (Levinson 2001)
  - a. What you haven't said, you do not mean.  
(otherwise you should have said so)
  - b. What you haven't bothered to say, you expect me, the recipient, to supply.

While Q-principle invokes meta-linguistic knowledge about contrasting expressions, R- or I-principle is a 'common-sense' principle invoking encyclopedic knowledge about stereotypical situations in the world.

As a kind of quantity implicature, scalar implicature received the most detailed attention from Griceans. As defined in (5), a bundle of expressions in identical grammatical category bears a relation of ordering over the scale  $\langle e_1, e_2, \dots, e_n \rangle$  and the actual sentences  $A(e_1), A(e_2)$  within "a sentence frame A" brings in scalar implicature.

- (5) Scalar implicatures (Levinson 1983:133): Given any scale of the form  $\langle e_1, \dots, e_n \rangle$ , if a speaker asserts  $A(e_2)$  then he implicates  $\neg A(e_1)$ , if he asserts  $A(e_3)$  then he implicates  $\neg A(e_2)$  and  $\neg A(e_1)$ , and in general if he asserts  $A(e_n)$ , then he implicates  $\neg(A(e_{n-1})), \neg(A(e_{n-2}))$  and so on, up to  $\neg(A(e_1))$ .

For a well-known example, (6a) brings in the scalar implicature of (6b) based on Quantity-1 submaxim, by which it is inferred that the speaker in (6a) is not in a position to say felicitously the stronger expression 'all of the guests' and therefore the presence of 'some' implicates 'not all.' A basic notion for accounting for the production of the relative strength of the conveyed information is to presuppose the existence of a scale, i.e.,  $\langle \text{all, some} \rangle$  for the scalar implicature in (6).

- (6) a. Some of the guests left early.
- b. Not all of the guests left early.

The members of a linguistic scale is arranged in a linear order by degree of informativeness or semantic strength. The comparison of the quantity information is to be done on the basis of the substitution among the members of the linearly ordered sequence of the scale. With regard to the presence of the scales, it is naturally called into question where they are from and how they are constrained. According to Gazdar (1979:58), it is assumed that the scales are "given to us." In view of this idea, it can be conceived that a scale is non-controversially taken to be 'given to us,' with no necessity of non-linguistic factors such as common ground or world knowledge of the discourse participants. On the other hand, according to Levinson (1987), constraints on the legitimacy of the scales include 'equal lexicalization' and 'aboutness' as in (7).

- (7) Constraints on Horn scales: For  $\langle S, W \rangle$  to form a Horn scale,
  - (i)  $A(S)$  must entail  $A(W)$  for some arbitrary sentence frame A;

- (ii) S and W must be EQUALLY LEXICALIZED;
- (iii) S and W must be 'ABOUT' THE SAME SEMANTIC RELATIONS, or from the same semantic field.

If an weak expression in the scale <S, W> satisfies the constraints of (7), Q-principle takes precedence over I-principle and therefore A(W) implicates the negation of A(S). However, if the constraints are not satisfied, A(W) never implicates the negation of A(S).

Contrary to the negation of a stronger proposition, as a scalar implicature based on Quantity-1 submaxim, there are cases in which a stronger proposition is inferred based on Quantity-2 submaxim. What is responsible for this sort of implicature is called 'enrichment' (Atlas & Levinson 1981, Levinson 1987 and many others). With regard to the enrichment based on Quantity-2 maxim, Atlas & Levinson (1981) established a principle of informativeness.

On one hand, scalar implicature based on Quantity-1 and the enrichment based on Quantity-2 have an opposite direction. However, on the other hand, Quantity-1 and Quantity-2 do not necessarily work in opposite directions. They tend to work together as an interface between the maximization and minimization of the informativeness.

## 2.2. Non-controversiality and Enrichment

Until recently, there have been theoretically different ideas about how close 'what is said' is to sentence meaning or speaker's meaning, and it is not simple to identify the intriguing part of 'middle ground' (Bach 1994) or 'semantic under-determinacy' (Recanati 1989) between 'what is said' and 'what is implicated.' A kind of information recovery concerns the inferential enrichment of under-determined propositions. To illustrate a familiar example,

- (8) a. You're not going to die, Peter.
- b. You are not going to die from this cut, Peter.

Suppose here that a mother says (8a), instead of expressing a complete proposition like (8b), to reassure her child who suffers from cutting a finger. On hearing the utterance (8a) as 'what is said,' the child decodes the enriched meaning of (8b) through the inferential processes.<sup>3)</sup>

In the theory of GCI, the interaction of the two sub-maxims of Quantity has been taken to produce the ambivalent force of counter-balancing information measures. As regards the conflicts between Quantity-1 and Quantity-2, there are a couple of important notions such as 'enrichment,' 'stereo-typicality(= non-controversiality),' 'minimization' and so forth.

The two contrary forces of the maximization and minimization of informativeness interact with

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3) As noted by Jaszczolt (1999), in distinguishing what is said and what is implicated, Grice did not talk about expansion and completion (also known as strengthening and saturation). For another example, in (1), what is meant is stronger than the minimal proposition, and in (2), what is meant is weaker than the minimal proposition. In the degree of departure from the semantic content of the utterance, what is meant by a speaker uttering a minimal proposition is an enrichment proposition, i.e., conversational implicature.

(1) I have had breakfast.

(2) Everybody went to Paris.

each other, working as the inferential heuristics for the effortlessly occurring counter-balancing informational measures between Quantity-1 maxim and Quantity-2 maxim. Typical examples in the literature are in the below:

- (9) a. I slept on a boat yesterday.  
b. The boat was not mine.  
(10) a. I lost a book yesterday.  
b. The book was mine.

(9a) derives Q-based implicature in (9b), but (10a) derives R-based implicature in (10b). The speaker of (9A) is not in a position to provide the specific information like "The boat was mine," placed higher on a scale than (9a), and therein arises the scalar implicature, negating the stronger proposition as in (9b). But for (10), a 'stereotypical' relation linked to the verb 'lose' is that the person who lost a book has kept the book in his ownership. For another example,

- (11) a. John is meeting a woman this evening.  
b. The person to be met is not John's wife; someone other than John's wife, mother, sister, or perhaps even a close platonic friend.  
(12) a. I broke a finger yesterday.  
b. The finger is mine.

(11a) implicates (11b), where the indefinite article of 'a woman' refers to someone other than the speaker's nearest one, and this is based on the first maxim of Quality, whereas in (12b) as being implicated from (12a), the indefinite article of 'a finger' does refer to the speaker's one.

Apart from (9) and (11), (10) and (12) are the examples of an enrichment. As regards this enrichment, Atlas & Levinson (1981) replaces Grice's maxims by adding Principle of Informativeness, together with the Conventions of Non-controversiality. The key idea suggested by the Conventions of Non-controversiality has to be understood in two respects, (i) stereotypical relations, (ii) aboutness. As Atlas & Levinson (1987) notes, "If a predicate Q is semantically nonspecific with respect to predicate  $P_i$ ,  $1 \leq i \leq n$ , but for some  $j$ ,  $1 \leq j \leq n$ ,  $P_j$  is stereotypical of  $Q_s$ , then in saying  $[Q_i]$  a speaker will convey  $[P_j]$  ..."4)

On the speaker's side, the production of minimal linguistic clues can be taken to be enough to achieve the purpose of exchange. On the hearer's side, if what is informed by the speaker is understood as being consistent with the stereotypical relations based on world knowledge or common ground, the hearer amplifies the information in terms of an enrichment. Through the inferential process of enrichment, the hearer derives more information as soon as possible.

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4) Notice that, with regard to I-principle, the speaker says as much as possible, and the enrichment for the missing parts is done by the hearer. Levinson's (1987) I-principle is a reformulation of Atlas & Levinson (1981) and Horn (1985), subdivided into speaker's maxims and recipient's corollaries respectively. The I-principle is stated as a principle of minimalization for the speaker and one of enrichment for the hearer, respectively. The following, as noted in Marmaridou (2000:247), illustrates how the role of stereotypical relations works for the distinction of Q- and I-implicatures.

- (i) "Larry stopped the car." I-implicates "Larry stopped the car in the stereotypical way by using foot-brake."  
(ii) "Larry stopped the car to stop." Q-implicates "Larry stopped the car in a non-stereotypical way, e.g., by using the hand-brake."

### 3. Quantity Implicature

#### 3.1. What is Known vs. What is Unknown

A main emphasis concerning quantity implicatures is that scalar implicature has the requirement of determinacy. According to the determinacy requirement, a weaker statement is used to implicate the denial of a stronger statement. But there are cases in which the determinacy requirement fails. For a particular set of quantity examples, I will show, whether the scalar implicature is determinate or indeterminate is sensitive to the informational status between 'what is known' and 'what is unknown.' Among typical examples of scalar implicature are the following (13)-(15).

- (13) a. Some of the guests left early.  
b. Not all of the guests left early.
- (14) a. X: I like Mary. She's intelligent and good-hearted.  
Y: She's intelligent.  
b. Y doesn't think Mary is good-hearted.
- (15) A: Where does C live?  
B: Somewhere in the south of France.

In (13), the use of 'some' implicates 'not-all' interpretation. In (14), Y's utterance implicates the negation of stronger expression, i.e., 'Mary is not good-tempered.' In the 'south of France' example of (15), as Grice (1975) notes, the implicature is that B is unable to be more specific (because he doesn't know, or forgotten, where exactly in the south of France C lives).

The most detailed attention devoted to scalar implicature concerns Quantity maxim. On a scale ordered in the strength of semantic relation, the choice of a weaker element imports the scalar implicature as in (16a). This is based on the comparison of quantity information in the Horn scale <S, W>.

- (16) a. When the speaker hasn't said the stronger statement,  
the implicature is the negation of the stronger statement.  
b. When the speaker hasn't said the stronger statement,  
the implicature is that the stronger statement is not true.

(16a) can be restated as (16b). As I note in (16b), the Quality maxim also comes into play: it is believed that the speaker says as far as he knows. In parallel with this, when the speaker hasn't bothered to say the stronger statement, it is also believed (or inferred by the hearer) that the speaker knows that the stronger statement is not true.

The core idea in (16b) is that the speaker knows that the stronger statement "is not true." This corresponds to what Gazdar (1979) has termed 'epistemic modification.' Epistemic modification occurs, (i) when it is mutually believed that the speaker is in a position to know whether the stronger statement is true, and (ii) when the stronger statement is relevant to the current purpose of the conversation. According to Welker (1994: 30), epistemic modification involves the following additional steps in reasoning:

(17) Inference pattern leading to epistemic modification:

- (i) The speaker is in a position to know whether q is true or false.
- (ii) If the speaker knows that q is false, then the speaker would be violating the Maxim of Quality if she said q. This would be a reason for the speaker not to have provided q.
- (iii) Therefore, the speaker must know that q is false.

Then, let me revise the contrast of Q- and R-implicatures in terms of the knowledge state of the inferred information, i.e. whether the information is known or unknown. That is to say, Q-implicature concerns the information of what is known (to be true or false), but R-implicature arises as to what is unknown (to be true or false). As depicted in (18), the broad conception 'what is unsaid' falls into a dichotomy of 'what is known' and 'what is unknown.'

(18)            what is unsaid  
                 /            \  
              what is known    what is unknown

Concerning the role of quantity maxim, amplifying the informativeness of 'what is unsaid' (as much as necessary) is possible only when the truthfulness of quantity information is known (to the speaker). Contrary to this, when 'what is unsaid' is UNKNOWN to the speaker, epistemic modification fails since the speaker is NOT in a position to KNOW the stronger one. Though the speaker says as far as he knows or even tries to (and wants to) say the upper limit of his knowledge, he CANNOT say what he DOESN'T know. In other words, when the truth or falsity of the information is NOT known, there does not occur an inference from a semantically weaker proposition to the negation of the semantically stronger proposition. In view of this idea, I note that Quantity implicatures are not solely a matter of Quantity, but are interfered by a matter of Quality maxim as well. As I state in (19), the aspect of Quality maxim relates the inference with the epistemic modification towards the truthfulness of quantity information.

- (19) <When it is known (to the speaker) whether the stronger statement is true or not>
- a. The speaker knows that it is true that [. . . some(x) . . .]
  - b. The speaker knows that it is false that [. . . some(x) . . .]

'what is unsaid' is to be inferred when it is known to be true or not. On the contrary, 'what is unsaid' cannot go into epistemically qualified beliefs, when the truth or falsity of the information is NOT known. To say it again, only when the truth or falsity of the information is known, 'what is unsaid' can go into epistemically qualified beliefs. Therefore, I emphasize that scalar implicature is not only an inference of quantity information, but also an inference of quality information. Then, I point out that the truth value of the sentence frame of Horn scale should be checked out in terms of the possibilities from (20a) through (20d).

- (20) Constraints on Horn scales: For <S, W> to form a Horn scale,  
A(S), A(W) for some arbitrary sentence frame A;
- a. It is known to the speaker that A(W) is true.

- b. It is known to the speaker that A(S) is false.
- c. It is known to the speaker that A(S) is true..
- d. It is unknown to the speaker that A(S) is true/false.

Based on this kind of epistemic modification, in the next section I will bring together, and try to assess, a range of quantity-related data. The main point for this work is that the inferential constraints on deriving more informativeness indeed reflect the 'QUALITATIVE' aspect of quantity information. This refinement requires a closer examination of different types of quantity implicatures in terms of the alternating values towards 'what is unknown,' in addition to 'what is known (to be false or true).'

Going one step further, in terms of the dichotomy between the Known and the Unknown, it needs to be clarified how Q- and R-principles are not in fact diverting, but actually emerge to interact with each other. With regard to this, however, this paper is not sufficiently informative. Portions of the project are not circumscribed empirically and theoretically in this paper, and a good landscape into that exploration still remains to be seen.

### 3.2. Indeterminacy of Scalar Implicature

Scalar implicature arises on the basis of the comparison of the actual sentence and its stronger counterpart. In this subsection, I will cast a doubt on the determinacy requirement of scalar implicature, while observing the examples of the determinacy requirement failure. One good reason for the determinacy requirement is that scalar implicature lives on the comparison of the quantity information associated with an element of a scale. A comparison of the relative strength of the conveyed information is to presuppose the existence of a scale, i.e., <all, some>.

Recall Gazdar's (1979) assumption that the scales are 'given to us.' Following this 'given-to-us' view, we would have to say that the scales are independently existing, and always have the potentials of negating the stronger item of a scale. However, it is quite doubtful that the scale is really 'given to us. As it seems to me, the construction of a scale contextually depends upon the speaker's selection, rather than being independently 'given to us.'

Noticeably enough, scalar implicature does not arise uniformly from the existence of the scale. A good piece of evidence can be found: despite the presence of the scale <all, some>, the 'not-all' property out of 'some' cannot be maintained in the contexts of a request or an interrogative. The observed indeterminacy in these contexts would follow from referring to the notion 'known/unknown' and its related inferential property, which invites a positive extension of what is obvious, from what the speaker doesn't bother to say.

First, in (21) as a request, the 'not all' reading is not implicated.

(21) Can you give us some examples for that?

To examine the above claim in the context of interrogatives, consider the following:

(22) A: Which papers have you read in the semantics class this semester?

B: Some papers on implicature. (Davis ?)



(does not implicate 'not all papers on implicature')

(23) A: Did anyone get an A? (Davis 1998:39)

B: Some got Bs.

+> No one got an A.

There are more examples:

(24) a. President Bush gave a warning to some nations hiding terrorists.

b. President Bush gave some warnings to Iraq, as well as Afghanistan.

(25) a. The FBI reportedly has some evidence to identify bin Laden's suspicion for the terror attack.  
(The perfection of the evidence is expected.)

b. The FBI reportedly does not have all evidence to identify Vin Laden's suspicion for the terror attack.

For another example,

(26) A: Do you have some books on wind surfing?

B: I have some books on cuisine.

+> I don't have some books on wind surfing.

What appears to be implicated in (26B) is that "the speaker does not have some books on wind surfing." The speaker seems to suggest that he/she is not interested in 'wind surfing,' and therefore is diverting the conversational topic into something like 'cuisine.' This example also shows that the use of 'some' related to the negation of 'having some books on wind surfing,' rather than the negation of 'having all books on cuisine.'

### 3.3. More on the Indeterminacy: 'unwilling-to-say' implicature

In this subsection, let us point out another important pragmatic property, which indicates the indeterminacy of scalar implicature. Recall here that, in addition to Quantity maxim, the Quality maxim also comes into play, since it is believed that the speaker says as far as he knows. When the informativeness by Quantity maxim and the evidencedness by Quality maxim works together, the arising implicature is that the speaker is unable to say the stronger statement. This is due to the epistemic modification that the speaker doesn't know the information of the stronger counterpart and therefore he cannot say.

On the other hand, it is also necessary to note that the speaker may be reluctant to disclose a particular piece of information, even though he fully knows the information. In these cases, apart from the clash between informativeness and evidencedness, there is a clash between informativeness and speaker willingness. To show this, let us consider again the 'South of France' example of the following (27). According to Grice (1975), it is implicated that (27B-a)-speaker is ignorant of the facts to satisfy the question of (27A). Thus, in terms of Grice's maxims, the implicature of (32B-a) must be the 'unable-to-say' type as a case of involving a clash between the informativeness by Quantity maxim and the evidencedness by Quality maxim.

- (27) [A and B are making plans for a trip to Europe, and A would like to visit their old acquaintance C.]  
 A: Where does C live?  
 B: (a) Somewhere in the south of France.  
      (b) C might live in Paris. C might not live in Paris.  
      (c) C does not live in Paris. C lives in Vordo.
- (28) B does not know where in the South of France Pierre lives.
- (29) a. B knows where in the South of France Pierre lives.  
      b. B is reluctant to disclose Pierre's exact whereabouts.

Carston (1998) reconsiders this 'South of France' example, by noting the possibility that the speaker is reluctant to disclose more specific information. While Carston (1998) argues that Gricean difficulty to deal with this example can be remedied in relevance-theoretic perspective, she posits an implicature of 'unwilling-to-say' type for this example. Thus, she refers to two distinctive types of implicature: (i) "don't know" (= 'unable-to-say') type as in (28) and (ii) "don't want to say" (= 'unwilling-to-say') type as in (29). Carston (1998) offers more examples of 'unwilling-to-say' implicature, such as (30)-(31).

- (30) A: When will you be back?  
       B: When I'm ready.
- (31) A: Which of your colleagues support the strike?  
       B: Some of them do.

Examples (30)-(31) illustrates a point that Gricean quantity maxim, based on a uniform character of speaker's cooperative principle, cannot account for the personal interests and goals of the speaker. Even though the speaker fully knows the information, the speaker may relinquish from disclosing the information as he judges the exactly specific information to be at odds within the discourse situation.

In addition, example (32) also shows that the use of 'some' do not trigger the negation of the stronger one. Carston (1998: 217) points out that (32) is also 'unwilling-to-say' type concerning the interests of the speaker.

- (32) A: Which of your colleagues support the strike? (Carston 1998: 217)  
       B: Some of them do.
- (33) A: When would you purchase a Mercedes?  
       B: Someday.

On the other hand, in (33), the speaker B could be saying emphatically, rather than being unwilling to say. (33) includes the possibility of an implicature that the speaker has a determination or belief for complying with the partner's expectation, and then if this remark is understood as a minimization on the side of (33B)-speaker, (33A)-speaker would likely make an R-based implicature that (33B)-speaker is strongly willing to assert what (33A)-speaker expects (33B)-speaker to do.

The 'unable-to-say' implicature stand on the cooperative aspect of the communication, such that the speaker only says the linguistic clues sufficient to achieve the purpose of informational exchange. However, as we reviewed above, the 'unwilling-to-say' type reflects the personal interests and goals of the speaker. This is the aspect of the communication to which Grice's maxims cannot gain access.

## 4. An Alternative View on Scalarity

### 4.1. Substitutivity vs. Additivity

Horn's examples of the quantitative scales are not founded on strict definition. Gazdar (1979: 57) notes that the acceptance of the scale as being merely 'given-to-us' is supposed to suffer from two difficulties: (i) the unavailability of similarity criterion for the items in the scale, and (ii) the complexity of informativeness ordering relation imposed on the scales. In this section, I will reconsider the accepted definition on scalar implicature in terms of the priority between the substitutive scale and additive scale. This issue also concern to what extent the production of scalar implicature needs to interact with the big and small non-linguistic, world knowledge.

It is first necessary to refer to the contrast of the notions 'substitutivity' and 'additivity.' Notice that the standard definition of scalar implicature is based on substituting a part of the sentence frame. This is called 'substitutivity,' which goes without the elaboration of the cases that a sentence frame itself is compared to other alternative ones. On the other hand, as suggested in van der Auwera (1997), the implicature based on the substitutive scale such as <all, some> can be equally captured by rephrasing the substitutive scale with what 'additive' scale. What is meant by the notion 'additivity' is that a stronger statement is to be formulated by the elaboration of alternative sentence frames that can bring in the comparison of quantity information.

For an exposition of the notion 'additivity,' in distinction with the notion 'substitutivity,' we have to pay tribute to van der Auwera (1997). The familiar Horn scale example <all, some> is a substitutive scale, on the basis of which the negation of the stronger proposition is implicated along the vertical scalar inference. The main difference is that additive scale is not subject to the restriction of 'equal lexicalization' for substitutive scale. With keen emphasis on the possibility of rephrasing substitutive scales as additive scales, van der Auwera notes that (34) can be equivalently paraphrased by the additive scale in (35).

(34) Substitutive scale:

- I have all books.
- I have some books.

(35) Additive scale:

- I have some books and I have the remaining books too.
- I have some books.

van der Auwera's additive scale is based on the comparison of quantity information as well, but it differs from substitutive scale. The additive scale contains whole sentences, rather than a list of relevant expressions in an order from the strongest to the weakest. van der Auwera further argues that there are good evidence that the additive scale is no less independently motivated, but rather it is more basic than the substitutive scale.

For another example, the familiar substitutive scale <all, some> for (36) can be reconstructed in an additive scale as in (37). With no necessity of the constraint of equal lexicalization, the additive scale in (37) shares the inference of quantity information with its corresponding substitutive scale (36).

- (36) - All of our friends came to the party.  
 - Some of our friends came to the party.
- (37) - Some of our friends came to the party.  
 and the remaining friends did too.  
 - Some of our friends came to the party.

Apart from van der Auwera's suggestions, let me further develop a further supporting idea for the priority/basic-ness of additive scale over substitutive scale. The main point of substitutive scale is that the scalarity on the comparison of related lexical items such as <all, some> is to be constant. But, as we observed in the previous section, the production of scalar implicature is occasionally indeterminate. There are cases in which the salience of the discourse topic does not dwell on the scalar expression but elsewhere within the sentence. Consider (38):

- (38) A: Do you have some books on wind surfing?  
 B: I have some books on cuisine.

It seems at least evident that the use of a weak expression is not necessarily related to the negation of a stronger expression. What is implicated in (38B) is that the speaker does not have some books on 'wind surfing.' (38B)-speaker appears to suggest that she is not interested in 'wind surfing,' and therefore the conversational topic is diverted from 'wind surfing' to something other than 'wind surfing' (= 'cuisine'). In this example, what is implicated by the use of 'some' is not the negation of 'having all books on cuisine,' but rather the negation of 'having some books on wind surfing.'

Considered in terms of Horn scale <S, W>, the implicature by (38B) is not the negation of 'S = all books on cuisine,' but is the negation of 'some books on wind surfing.' This inference is not offered context-independently, but comes from the consideration of the alternatives arising out of the immediately prior context in (38A). Noticeably enough, this illustrates a case of failing to clearly differentiate what is known and what is unknown.

As the speaker's interests or attentions are diverted from the ones of the discourse partner, different types of scales could be imposed on the situation. With the equivalence between substitutive scale and additive scale in our mind, the substitutive scale in (39) can be rephrased as an additive scale in (40).

- (39) - I have all books on cuisine.  
 - I have some books on cuisine.
- (40) - I have some books on cuisine, and I have some books on wind surfing.  
 - I have some books on cuisine.

Notice that the substitutive scale (39) cannot account for the case of there being additional kinds of objects that are considered by the speaker. For (39), we have no way to produce the implicature that "the speaker has some books on cuisine of his favorite, but does not have some books on wind surfing which is not a part of his favorites." With regard to this interpretation, the scalarity is defined among alternating propositions, rather than being simply ordered in the contrasting lexical items. In other words, the construction of a scale contextually depends upon the speaker's selection, rather than being uniquely determined by pre-established scalarity. In compliance with the speaker's

selection, a new set of additional scales may come into play.

Let us close this section by noting a little more what van der Auwera (1997) argues for the necessity of additive scale for example (41). What (41B)-speaker implicates is the production arising from the construction of an additive scale such as (42). That is, the assertion of the lower proposition conversationally implicates the negation of the higher proposition.

(41) A: Did you talk to Bill and Sue at the party?

B: Well, I talked to Sue at the party.

(+> B did not talk to Bill at the party.)

(42) - I talked to Bill and Sue at the party.

- I talked to Sue at the party.

van der Auwera (1997: 176) also points out that the following does not meet the notion of equal lexicalization, and hence was not supposed to, but actually does produce the 'innocent' scalar implicature from 'Fred' to 'only Fred.' Therefore, this is an instance of showing the overtly restricted nature of the equal lexicalization, which would have to be compensated for by the basic-ness of 'additivity' over 'substitutivity.'

(43) - Fred and Paul looked happy.

- Fred looked happy.

## 4.2. More on the Indeterminacy: Almost-Construction

In this section, I will concentrate on the counterfactual inference in almost-construction. First, I will show that the counterfactual inference may well count as a good piece of diagnosis for emphasizing the reinforcing interaction between Q-based principle and R-based principle.

A controversy about the inference by 'almost' concerns whether 'almost' invites an implicature as advocated in Ziegeler (2000), otherwise an entailment as in Hitzeman (1992). Assuming that 'almost' is a candidate for a Horn scale, Ziegeler (2000) quantifies the factuality of the predicates which are modified by 'almost.' For example, the use of 'almost' in (44a) represents a hypothetical utterance, to the contrary of which a counterfactual inference in (44b) develops as a conversational implicature derived from the contextual assessment of the speaker's knowledge of facts.

(44) a. He almost win the race.

b. +> He didn't quite win the race.

c. He had almost won the race when he slipped and fell.

In this example, the statement of an imperfective event by 'almost' hosts the negation of a perfective event, which is a stronger one over the scale of situational processes through the time axis. Thus, the inference in (44) seems to be very close to the familiar Q-based phenomena that 'some' conversationally implicates the negation of a stronger proposition.<sup>5)</sup>

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5) 'almost-P' has the function of epistemically qualifying function for the factuality of the propositional content, implicating

On the other hand, one may conjecture a clausal implicature arising from the scale <P, almost-P>, whereby a proposition with 'almost' conversationally implicates the negation of P. This is consistent with the inference of Q-based principle, since the lower statement leads to the negation of the stronger one. However, contra this observation, the speaker's epistemic stance of contextual assessment of facts does not strictly pertain to the Q-based mechanism. A good piece of evidence for the R/I-based inference of 'almost' comes from considering speaker's epistemic stance reflecting the hearer's expectation towards the perfective event. For example, (45) and (46) illustrate a controversial case of the inferential characteristics between Q-implicature and R-implicature.

(45) She had almost sung Strauss's 'Four Last Songs', but she did not finish.

(46) She had almost sung Strauss's 'Four Last Songs',

but she broke into a sneezing fit before she has finished. (Ziegeler 2002: 1754)

In (45) and (46), given that the speaker and the hearer equally have in mind the imminence of the completed action, it is likely that the completed action is highly imminent, while the predictability for that expectation can be rhetorically opposed by the second clause by 'but.' For this reason, Ziegeler (2000: 176) notes that the inferences associated with the use of 'almost' are related to the R-based implicature in that what the speaker is saying is taken to signal more information than was expressed.

At this point, it seems that, if the truthfulness of the perfective event is not sufficiently evident, it still goes somewhere between Q-principle and R-principle. Then, it needs to be noted in two respects: (i) 'almost' related to Q-implicature, given that the imperfective event could not be completed in the process of facts, (ii) 'almost' related to R-implicature, given that more attention at the discourse situation is paid to expressing speaker's epistemic stance of expectation about the perfective event that could be imminently predictable.

With this distinction in mind, let us go on to observe more examples related to the R-principle. In (47a), assuming that the speaker has a high necessity of the "printer," what the speaker is expecting is not the negation of, but rather the advent of the perfective event that is surely helpful to the speaker. Therefore, the inference for this interpretation is R-implicature.

(47) a. My printer is almost functioning.

b. My printer was almost functioning.

(when the paper jammed again.)

However, in (47b) with past tense, it is likely that the speaker shows a disappointment for the present mal-functioning of the "printer." In this case, the functioning in the past tense is still R-implicature, but the mal-functioning in the present tense is Q-implicature denying the factuality of the perfective event.

This can be accounted for by constructing the additive scale as in (48), whereby the stronger one

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the negation of the perfective state of the proposition. Ziegeler (2000) and Sadock (1981) suggests that the qualification by 'almost' is an implicature, but not an entailment as advocated in Hitzeman (1992). As Sadock (1981) notes, the following examples are in favour of the view that 'almost' is an implicature. The connective 'but' in (i) reinforces what is implicated by 'almost,' but the connective 'and' in (ii) does not take the reinforcing function for the implicature.

(i) He almost, but didn't quite, win the race.

(ii) ?He almost, and didn't quite, win the race.

includes the conjunction for both past tense and present tense. In line with Q-implicature, it is possible to say that the weaker proposition implicates the negation of "My printer is almost functioning." As exemplified here, the precedence between the two kinds of implicatures could be keenly sensitive to the tense realization of the utterance.

(48) additive scale for 'almost'

- My printer was almost functioning, and my printer is almost functioning.
- My printer was almost functioning.

In jointly negotiated environment of the discourse, there could be more likeliness of R-based implicature. For the following (49), imagine a situation in which the speaker is saying (49) as an excuse to the awaiting person in order to do zeroxing after him.

- (49) a. I'm almost done.  
b. I'm not quite done, contra your expectation.  
c. I'm done.

In this situation, the speaker tends to respect the hearer's expectation. Thus the Q-implicature, negation of the indicative "I'm not quite done," does seem to diminish, and instead of the negation, the informativeness for the immediate satisfaction of the hearer's expectation comes from the R-implicature. For this kind of R-implicature, it is also possible to reconstruct an additive scale such as (50), and predict the production of Q-implicature.

(50) additive scale

- I am done.
- I am almost done: only a couple of pages to do.
- I am almost done: not much left.
- I am almost done: \*having many materials to do.

Let's consider more examples. In the following, the two implicatures are the candidates. Because 'almost-P' represents a supposition on the factuality in the present situation, it basically expresses the perfection of the imperfective events through the time axis from the past to the present. In this sequential tunnel for the event (im-)perfection, the two aspects of Q- and R-inference are reflected simultaneously. Finally, consider the following (Ziegeler 2000: 1764):

- (51) a. Moore almost understood 'material object' and he understood it.  
b. Bill almost swam the English Channel, and he swam it.

In this example, Q-implicature does not arise. Instead of the negation of the perfection, the I-inference is more likely to be satisfied through the suspension of the negated perfection. In (51b), let there have been some obstacles in "swimming the English Channel," which are eligible to frustrate the goal of achieving the perfection of the activity of 'swimming the Channel.' Nonetheless, when the speaker expectation is directed towards the perfection of the activity, the negative part of Q-based inference does not interfere. Instead, viewed as part-whole relation of the whole process towards

the perfection, the specific interpretation of achieving the perfection is to be derived on the basis of I-principle, such as to amplify what the speaker informs, up to the point to decide m-intended point by deriving most specific reading.

## 5. Conclusion

I have suggested that the inferential constraints on deriving more informativeness are closely related to the qualitative aspect of 'known/unknown' status of the information. The indeterminacy of scalar implicature is also due to this qualitative aspect. In scalar implicature, when the truthfulness of quantity information is not known to the speaker and therefore the speaker is not in a position to say(?know) the stronger proposition, the negation of the semantically stronger proposition is not implicated. This characterization applies to the context of non-declarative contexts. In view of this idea, I emphasize that quantity implicatures are not solely a matter of Quantity maxim, but a matter of Quality maxim as well. In addition, I have reviewed that the relative weight of the amount of quantity information can be rectified by the property of 'additivity' as an alternative to 'substitutivity.' Finally, it has been noted that the notions such as 'speaker expectations' or 'speaker interests' comes into play, particularly for the quantity implicatures failures. Through the discussion, I offered a small idea like the following:

- (i) The informational status of 'what is unsaid' is to be divided into 'what is known' and 'what is unknown.'
- (ii) Scalar implicature is produced under the epistemic modification that the truthfulness of the information is known to the speaker. Otherwise, i.e., when it is unknown to the speaker, or when the speaker is unwilling to disclose the specific information, there does not arise Q-based implicature.
- (iii) Speaker expectations or speaker interests are a part of 'stereotypical' relations.

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