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# ON SYNTACTIC, SEMANTIC AND PRAGMATIC PROPERTIES OF *POSSIBLY* AS A SENTENCE ADVERB

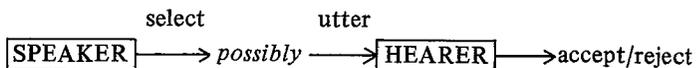
Isao Higashimori

## 0. Introduction

In this paper, I would like to discuss the syntax, semantics and pragmatics of the sentence adverb *possibly*. To say that this adverb is a sentence adverb is to say that syntactically it is immediately dominated by the S node, and that semantically it has the meaning of a sentence in its scope. But the actual behavior of *possibly* is so complex that we cannot easily identify it only by these syntactic and semantic treatments. Therefore, special emphasis is put on the following three points:

- (1) We cannot correctly capture the properties of English adverbs such as *possibly* without adopting a scalar (non-discrete) system into the grammar of English.<sup>1)</sup>
- (2) We must also consider some problems on 'context-dependent acceptability' of *possibly*.<sup>2)</sup>
- (3) The serious study of English adverbs like *possibly* will become necessary for a full account of "communicative competence" that is involved in language use. (See Campbell and Wales (1970).)

As you know, the goal of linguistics is to describe what a speaker or a hearer knows about his language that enables him to produce and understand new utterances. Consequently, the description of language must specify not only the knowledge of grammatical rules, but also the ability to handle a certain lexical item or a certain linguistic structure appropriately in specific contexts.



The topic which we will touch on here is now at the frontier of linguistic research, and particularly a problem relating to the area of

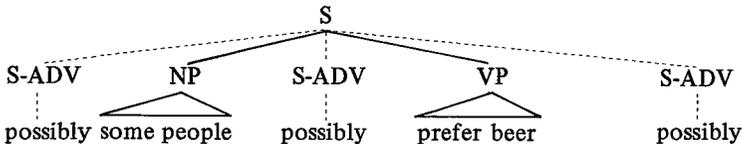
pragmatics of a natural language, which has not been studied thoroughly by any linguists for a long time.

### I. Syntactic Properties: *Possibly* as a sentence adverb

Greenbaum (1976) provides the following statistical data.

1. a. Possibly some people prefer beer. (52%) – DOMINANT PLACE
- b. Some people possibly prefer beer. (47%)
- c. Some people prefer beer, possibly. (1%)

According to Jackendoff (1972)'s Transportability Convention of sentence adverbs,<sup>3)</sup> any of the above three positions can be taken by *possibly*, since this convention permits a particular constituent such as S-ADV to occupy any position in a derived tree so long as the sister relationship with all other nodes in the tree is maintained.



The next example can be blocked by this convention:

1. d. \*Some people prefer beer possibly.

Compare this with (1c), which is with a comma. In (1d), *possibly* is attached to the VP-node, so this is a violation of the Transportability Convention of S adverbs.

It is true that this syntactic treatment correctly predicts the positions of *possibly* as a sentence adverb, but it doesn't account for the function of the adverb's occupying each position. This problem will be discussed later.

PROBLEM 1: What are the functional differences among (1a), (1b) and (1c)?

Note that *possibly* may be used also as a non-sentence adverb (e.g. a noun-modifier, etc.). Observe the following:

2. a. An earthquake will shake, possibly Tokyo, tomorrow.
- b. An earthquake will shake Tokyo, possibly tomorrow.
- c. According to witnesses, there were at least four, possibly five,

men involved in the shootings. (*Reader's Digest*. June, 1978 p. 126)

- d. And his mother and I had worried about his failing in school, possibly in life. (*Reader's Digest*. July, 1978 p. 87)
- e. That figure had declined largely because usually few people were looking for jobs, possibly because cold and blizzards kept many at home. (*Time*. April 10, 1978 p. 43)

There are indeed some cases in which the distinction between sentence and non-sentence adverbs seems to be very subtle. But I will not treat this latter use of *possibly* here.<sup>4)</sup>

## II. Semantic Properties

A. Katz and Postal (1964:77) indicate that "there are no imperatives with various kinds of sentence adverbs although THESE OCCUR READILY WITH ... DECLARATIVE FORMS." (Emphasis added)

The following are their examples:

- 3. a. Probably he is a doctor.
- b. \*Probably is he a doctor?

The next examples can be added to the above ones.

- c. \*Possibly come here!
- d. \*Possibly is he a doctor?
- e. \*Possibly who is a doctor?

They have given the following explanation for the difference between (3a) and (3b):

These selectional facts can evidently best be stated if there is a *Q* morpheme in the underlying P-markers of simple truth-value questions. (p. 88)

However a closer examination shows that this analysis is inadequate.

Compare the following with (3a):

- f. Possibly I will come here.
- g. ?Possibly you will come here. (*you*: singular)
- h. ?Possibly you come here.
- i. Possibly he will come here.
- j. ?Possibly he comes here.

Although (3a) and (3f-j) are all declarative forms, *possibly* cannot be used appropriately in (3g), (3h) and (3j).

PROBLEM 2: How are we to explain the difference of appropriateness between (3f, i) and (3g, h, j)?

B. Bellert (1977)'s distinction between modal adverbs like *possibly* and modal adjectives like *possible* deserves our special attention. He argues as follows:

- 4. a. Possibly John will come.
- b. It is possible that John will come.
- 5. a. It is possibly true that John will come.
- b. \*The truth that John will come is possible.
- 6. a. \*Possibly will John come?
- b. Is it possible that John will come?
- 7. a. \*Impossibly John will come.
- b. It is impossible that John will come.

	MODAL ADVERBS ( <i>possibly</i> )	MODAL ADJECTIVES ( <i>possible</i> )
SEMANTIC NATURE OF ADVERB VS. ADJECTIVE	EXAMPLE: (4a) EXPOSITION: modal adverbs should be interpreted over the truth of the proposition expressed by the respective sentence, and sentences with modal adverbs express TWO PROPOSITIONS.	EXAMPLE: (4b) EXPOSITION: the corresponding modal adjectives are predicates over the fact, event, or state of affairs referred to by the sentence, and sentences with modal adjectives express ONE COMPLEX PROPOSITION.
SEMANTIC NATURE OF ARGUMENT	EXAMPLE: (5a) EXPOSITION: the semantic category of an argument is the truth of the proposition	EXAMPLE: (5b) EXPOSITION: the semantic category of an argument is an event or state of affairs, an extralinguistic entity referred to by the respective propositions.
QUESTION	EXAMPLE: (6a) EXPOSITION: in one and the same sentence we cannot ask if S is the case and qualify the	EXAMPLE: (6b) EXPOSITION: the anticipatory <i>it</i> refers to the event described by the complement sentence ... and we

	truth of S.	can ask about the possibility of the occurrence of an event without semantic incoherence.
NEGATION	EXAMPLE: (7a) EXPOSITION: a negative qualification of the truth of one's own assertion in one and the same sentence evidently constitutes a semantic inconsistency.	EXAMPLE: (7b) EXPOSITION: we can deny the possibility of the occurrence of an event.

Given this analysis, the differences of the above examples are explicable. But it is clear that one cannot cover all the relevant facts such as shown in (3g), (3h) and (3j), by merely adopting this explanation.

**PROBLEM 3: What kind of relation exists between the TWO PROPOSITIONS?**

C. Hooper (1975:113) explicitly states that (8a) is unacceptable, because a contradiction is expressed, that is, the speaker first asserts a proposition and then expresses a strong degree of uncertainty about its truth. Contrary to her claim, however, (8a) is perfectly acceptable according to my informants, and her judgment seems to be questionable.

8. a. He wants to hire a woman, possibly.

Furthermore, she added in her footnote (11):

When the adverbial occurs in mid-sentence, the qualification expressed by it is taken as part of the assertion, and a grammatical sentence results.

In spite of her prediction, the next example is not acceptable:

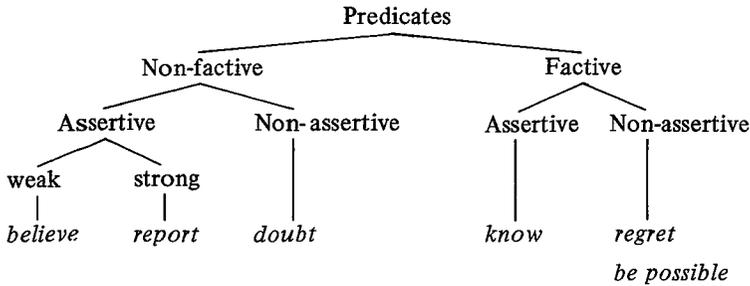
8. b. ?He possibly wants to hire a woman.

**PROBLEM 4: Where does the difference between (8a) and (8b) come from?**

D. Amano (1976:44) suggests that the attitudinal disjuncts<sup>5)</sup> e.g. *possibly* cannot modify interrogatives, imperatives and embedded sentences expressing presupposition, but only the matrix and embedded sentences expressing assertion can be modified by them.

On the basis of the distinction between factivity and assertion,

Hooper (1975) classifies main predicates as follows:



According to this classification, the complements of *believe*, *report* and *know* express assertion. Now observe the following:

- 9. a. John believes that possibly she will come.
- b. John reports that possibly she will come.
- c. \*John doubts that possibly she will come.
- d. \*John knows that possibly she will come.
- e. \*John regrets that possibly she will come.

Amano's analysis predicts that examples like (9c) and (9e) are perfectly ruled out, and that (9a), (9b) and (9d) are all right. But this is not the case: (9d) is unacceptable. As a consequence, this analysis is also insufficient.<sup>6)</sup>

PROBLEM 5: What is a difference between (9a, b) and (9c, d, e)?

	Assertion	Presupposition	Cooccurrence with <i>possibly</i>
<i>believe</i>	+	—	o.k.
<i>report</i>	+	—	o.k.
<i>doubt</i>	—	+	*
<i>know</i>	+	—	*
<i>regret</i>	—	+	*

### III. Scalar Systems and Pragmatic Factors<sup>7)</sup>

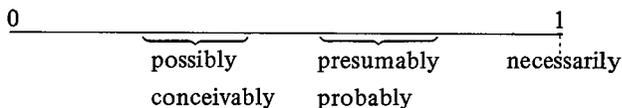
Having pointed out some problems on *possibly*, we may now proceed to consider whether we can solve these problems and many more by setting up a new theory.

A. A scale of certainty with respect to adverbs<sup>8)</sup>

First compare the following:

10. a. ?Possibly he comes here.
- b. ?Conceivably he comes here.
- c. Presumably he comes here.
- d. Probably he comes here.

In order to explain the above facts, we must incorporate the following scale into the grammar of English:



*Necessarily* indicates a certainty of 1, that is, the speaker believes that the assertion is true, while other adverbs indicate the speaker's certainty between 1 and 0.

The next examples also support this claim:<sup>9)</sup>

11. a. Possibly she will come here, but I don't know for sure whether she will come or not.
- b. Probably she will come here, but I don't know for sure whether she will come or not.
- c. \*Necessarily she will come here, but I don't know for sure whether she will come or not.
- d. Conceivably Peter locked the lab by mistake, although also conceivably he doesn't want to be disturbed.
- e. \*Presumably Peter locked the lab by mistake, although also presumably he doesn't want to be disturbed.

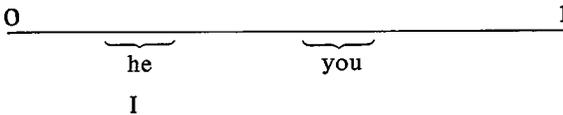
Therefore, *possibly* can occur with the proposition implying the least certainty of the speaker.

B. A scale of certainty with respect to the person of the subject

First compare each set of examples:

12. a. Possibly I will come here.
- b. ?Possibly you will come here. (*you*: singular)
- c. Possibly he will come here.
13. a. I may possibly come here.
- b. ?You may possibly come here.
- c. He may possibly come here.

The squishness shown above, which causes changes of the acceptability according to the person of the subject can be explained by the Gricean Maxim of Quantity: Don't make your contribution more informative than is required. That is, the hearer better knows what he believes than the speaker. Therefore, (12b) and (13b) tend to convey more information than is required, in violation of the Maxim. So the examples like (12b) and (13b) become unacceptable. If this Maxim is violated and the speaker uses these sentences intentionally, it will be shown that the speaker compels the hearer to come here against the hearer's strong resistance.



Accordingly, the above scale is useful to the explanation of these facts.

C. A scale of certainty with respect to the tense

Compare the following examples:

14. a. Possibly he will come here.
- b. ?Possibly he comes here.
- c. \*Possibly he came here.

Unlike Seuren (1969:161)'s observation, the following example is also unacceptable according to my informants:

- d. \*Possibly Plato wrote this letter.

The acceptability of these examples can be explained by the next scale:



(14a) is all right, because it is appropriate to evaluate one's future belief. However, (14b) is odd, since there does not seem to be any point in evaluating one's current belief. (14c, d) are very peculiar, because the speaker implies that the assertion that follows was true and that the assertion is doubtful. But the contexts also seem to affect the

acceptability in (14c, d). Thus the judgments of acceptability in (14c, d) seem to correlate with the fact that (14c, d) require more contexts to be acceptable than (14a, b).

D. A scale of certainty with respect to the verbs

It is observed that there is also a hierarchy among verbs.

15. a. Possibly he wants to come here.  
 b. ?Possibly he comes here.  
 c. ?Possibly he wanted to come here.<sup>11)</sup>  
 d. \*Possibly he came here.
16. a. ?He possibly wants to come here.  
 b. \*He possibly comes here.  
 c. \*He possibly writes a letter.  
 d. \*He possibly cures his patient.

The difference in the acceptability in (15) and (16) follows from the fact that the verb *want* represents one's desire for some state of affairs to come about, as shown in (15a, c) and (16a), but the other verbs represent an activity, an accomplishment or an achievement of an event.



E. A scale of certainty with respect to modals<sup>12)</sup>

Compare the following:

17. a. Possibly he will come here.  
 b. Possibly he may come here.  
 c. \*Possibly he must come here.  
 d. \*Possibly he should come here.

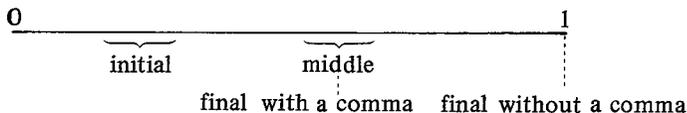


This scale means that *will* and *may* indicate the low degree of the speaker's certainty, so that they occur with *possibly*. But *possibly*, of course, cannot occur with modals representing obligation.

F. A scale of certainty with respect to positions.

18. a. Possibly he will come here.  
 b. ?He will possibly come here.  
 c. \*He will come here possibly.  
 d. ?He will come here, possibly.

It seems clear to me from the data in (18) that there is a hierarchy of positions as shown below:



This scale shows that the initial position is more acceptable than the middle or the final position with a comma, and that the final position without a comma is perfectly out.

The use of *possibly* has also some consequences in the realm of syntax. Of course, the use of this adverb means that the truth of the associated proposition is supported by the speaker's evidence involving inferential processes. So the function of *possibly* is to mark a complex chain of inference from the knowledge and beliefs of the speaker. Here I will propose the following principles which can account for the differences of the above positions:

- Principle (1): Putting a least certain adverb like *possibly* before a proposition serves to establish the uncertainty the speaker wishes to convey in making the assertion that follows.
- Principle (2): Putting it in the middle of a proposition is a way of focusing a certain constituent rather than focusing the whole proposition.
- Principle (3): Putting it after a certain proposition with a comma is used to remind the hearer that his acceptance of the content of the previous proposition is not literally expected.

*Possibly* in (18a) can be used appropriately, because it satisfies both the principle of the scale of certainty with respect to positions (hereafter PSCP) and Principle (1). But putting it in the middle of the proposition

yields a doubtful result, since (18b) satisfies Principle (2), but violates PSCP. Most people find (18c) unacceptable because of the violation of PSCP. (18d) satisfies Principle (3), but clashes with PSCP and Gricean Maxim of Quality: Do not say that for which you lack adequate evidence. So, (18d) is doubtful.

#### G. Appropriateness conditions

First, I will postulate the following appropriateness conditions for the illocutionary force of making an assertion<sup>13)</sup> with *possibly*:

- (i) Speaker believes P to a low degree of certainty, where P is the proposition being asserted.
- (ii) Speaker has evidence for the low degree of truth of P, or weak reason for believing P. (a complex chain of inference)
- (iii) It is not obvious to the speaker that the hearer knows P.
- (iv) Speaker has some reason for wanting the hearer to know P.

Let's consider the validity of these conditions. Observe the following:

19. Possibly two and two is four.

(19) is odd, since it conflicts with the conditions (i) and (ii). That is, the proposition *two and two is four* indicates a high degree of certainty, and does not contain a complex chain of inference.

Next, consider the following discourse:

20. Speaker A: Will you come with us tomorrow?

Speaker B: Possibly.

One possible explanation for the unacceptability of *Possibly I will come* as shown in (20) could be the fact conveyed by this utterance is already available to the hearer (i.e. Speaker A), thereby violating condition (iii). Moreover, if the utterance *Possibly I will come* appears in the first position in the discourse, it violates condition (iv). That is, this can be uttered only as a reply.

Finally, compare the following with (20).

21. Speaker A: Did John come here?

Speaker B: Possibly.

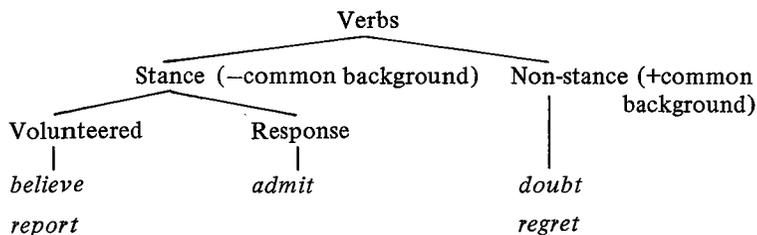
In this case, two scales, that is, the scales of certainty with respect to the tense and adverbs, clash with each other. However, *Possibly he came*

*here*. may be used only under the following conditions:

- (a) if the speaker has a contradicted belief;
- (b) If the speaker believes that this utterance represents the low degree of certainty in spite of the clash of the two scales;
- (c) if the speaker simply doesn't know.

#### H. Common background of the speaker and the hearer

Problem 5 in this paper seems to be related to Cattell (1978)'s classification of verbs on the basis of the notion "common background":



Examples with stance verbs are appropriate only if the complement is not part of the common background of the speaker and the hearer.

- 21. a. John believes that possibly she will come.
- b. John admits that possibly she will come.
- c. \*John doubts that possibly she will come.
- d. \*John regrets that possibly she will come.

According to this analysis, we can predict the acceptability of the examples like (21). That is, only stance verbs can occur with *possibly*, because the appropriate use of *possibly* is conditioned by *G* (iii) and (iv). (Cattell does not classify *know* as a non-stance verb, but, contrary to his observation, it seems to me that *know* belongs to this class.)

#### IV. Conclusion

The above scales seem to be locked together in a complex way. That is, we have a squish depending on at least these hierarchies. Furthermore, the use of *possibly* is governed by the Gricean Maxims and other pragmatic factors. The use of scales suggested in the present paper has been partially motivated by a desire to treat these facts systematically, although, admittedly, these matters are hardly amenable to exact

formalization.

In this paper, I have attempted to show how all the previous analyses fail to account for certain facts about *possibly*.

We may conclude for the moment that non-discrete systems would serve to show the direction in which a solution would ultimately be found and that the Gricean Maxims and other pragmatic conditions can explain some of these facts. The acceptability of *possibly* depends on the following:

- A. A scale of certainty with respect to adverbs.
- B. A scale of certainty with respect to the person of the subject.
- C. A scale of certainty with respect to the tense.
- D. A scale of certainty with respect to the verbs.
- E. A scale of certainty with respect to modals.
- F. A scale of certainty with respect to positions.
- G. Appropriateness conditions.
- H. Common background of the speaker and the hearer.

It is hoped that future studies will take account of the points discussed in this paper.

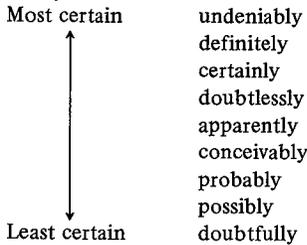
#### NOTES

This is a slightly revised version of my master's thesis presented to Kobe City University of Foreign Studies. I am grateful to Prof. Yoshinobu Mōri for many valuable comments on an earlier version of this paper. I am also indebted to my fellow students of Osaka University for their useful comments on this paper.

- 1) Bates (1976: 347) correctly states that "if a grammar is a description of native competence, and if native speakers can control politeness or emphasis by adding and subtracting discrete elements, then we need some means of representing the DEGREE of a given pragmatic dimension that the speaker wishes to convey, and that the pragmatic component of a grammar will require a means of representing continuous idea or meanings that play a part in the choice of necessarily discrete elements."
- 2) Needless to say, semantics and pragmatics are not well-defined domains in transformational grammar. However, some linguists have tried to define pragmatics as follows:
  - (1) Pragmatics could be characterized as a theory which deals with conditions for the correct use of expressions and constructions of a given language. (Groenendijk and Stokhof 1978:51)
  - (2) An utterance should not only be characterized in terms of its internal structure and the meaning assigned to it but also in terms of the act

accomplished by producing such an utterance. This PRAGMATIC level of description provides crucial conditions for reconstructing part of conventions that make utterances acceptable, viz. their APPROPRIATENESS with respect to the communicative context. (Dijk 1977:2)

- (3) Pragmatics, thus understood, comprises the use to which a speaker puts what he says and the role played by the context in determining from what he says is to be understood. Associated with these two dimensions of language use are certain norms of well-formedness of propriety, and the infringement or violation of the norms will produce what we may call pragmatic deviance. (Levin 1977:95)
- (4) Pragmatics, for a natural language concerns 'illocutionary force', 'implicature', 'presupposition' and 'context-dependent acceptability' (Gazdar 1977:12)
- 3) The reader is referred to Keyser (1968) for the details of this convention.
- 4) Hodge (1976:166) observes that all adverbs which can be used as sentence adverbs may appear as noun-modifiers.
- 5) Greenbaum (1969:211) shows that semantically, attitudinal disjuncts can be assigned to the major groupings:
  - (1) those that convey an attitude towards the truth-value of what is being said (e.g. *possibly*);
  - (2) those that convey any other attitudes towards what is being said.
- 6) Cattell (1978) proposes an alternative analysis for these facts.
- 7) Michell (1976:497) indicates that the pragmatic function of the following three adverbs (i.e. *necessarily*, *probably* and *possibly*) is fairly obvious and more or less directly explicable in terms of their semantic description. But, as should be obvious from my discussion so far, the description of *possibly* is not so easy.
- 8) Lehrer (1974:143) provides the following list of adverbs of certainty:



Greenbaum (1969:203) also observes that these expressing some degree of doubt can be roughly ordered according to the degree of doubt expressed, with *doubtless*, *presumably*, *likely* and *probably* at one end implying least doubt and *conceivably* at the other implying most doubt.

- 9) (11d) and (11e) are cited from Michell (1976).
- 10) I will not consider whether *will* represents future tense alone or not. I use the term here merely to distinguish it from the other tense forms.
- 11) Schreiber (1971) shows the next example:  
Some people feel that possibly Roosevelt wanted to enter the war.

- 12) What is of concern here is the behavior of *possibly* which roughly means *perhaps*. *Possibly* also means *by any possibility*, and in this sense, it always cooccurs with *can* or *could*. But I exclude this latter sense here. Greenbaum (1969: 149–50) shows the relation of *possibly* and *may/can* as follows:
- We can replace *possibly* [he smokes a pipe.] ...by the auxiliary *may* in one of its senses. He *may* smoke a pipe. If the progressive form is used here, *possibly* can be replaced by either *may* or *can*: He  $\left\{ \begin{array}{l} \text{may} \\ \text{can} \end{array} \right\}$  be smoking a pipe.
- But I cannot touch this problem here. See Seuren (1969) for some discussion of such examples.
- 13) Pratt (1977:133) defines assertion as is shown below:
- Assertion, as it is naturally argued contrast with imperatives, and questions in that they are concerned with getting the addressee to believe or know or think something rather than to do something.

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