

ASPECTS OF SENTENCE ADVERBS IN ENGLISH: IN SUPPORT OF LEXICAL DERIVATION

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I. INTRODUCTION

The present study is concerned with the syntactic, semantic, and pragmatic analysis of sentence adverbs in English.¹ The main theme in the study lies in the proposal for the revised classification of sentence adverbs and in the elucidation of their syntactic properties, semantic functions, and pragmatic factors. We will preserve a consistent position through the discussion that sentence adverbs should be captured lexically.

We will define sentence adverbs as ones which modify the sentence as a whole. Syntactically, sentence adverbs are not integrated in the sentence and retain no conjunctive function,² while semantically, they express the speaker's comment on the linguistic content, his attitudes toward it, his evaluation of it, or the probability about it.³

The sentence adverbs which we will deal with are listed in Table 1,⁴ which are all taken from Quirk *et al.* (1972)⁵ and arranged in alphabetical order:

Table 1
List of Sentence Adverbs

actually	admittedly	allegedly	amazingly
amusingly	annoyingly	apparently	appropriately
arguably	artfully	assuredly	astonishingly
avowedly	basically	bluntly	briefly
broadly	candidly	certainly	cleverly
conceivably	confidentially	conveniently	crudely
cunningly	curiously	decidedly	definitely

delightfully	disappointingly	disturbingly	essentially
evidently	factually	flatly	foolishly
formally	fortunately	frankly	fundamentally
funnily	generally	happily	honestly
hopefully	hypothetically	ideally	incontestably
incontrovertibly	incredibly	indisputably	inevitably
ironically	likely	luckily	literally
manifestly	mercifully	metaphorically	naturally
nominally	obviously	oddly	officially
ostensibly	outwardly	patently	personally
plainly	possibly	predictably	preferably
presumably	probably	prudently	purportedly
really	reasonably	refreshingly	regrettably
remarkably	reportedly	reputedly	roughly
sadly	seemingly	sensibly	seriously
shrewdly	significantly	simply	strangely
strictly	superficially	supposedly	surely
suspiciously	tragically	technically	thankfully
theoretically	truly	truthfully	typically
unarguably	undeniably	understandably	unexpectedly
unfortunately	unhappily	unluckily	unquestionably
unreasonably	unwisely	wisely	

There are a large variety of expressions such as *in all frankness*, *to be frank*, *to speak frankly*, *to put it frankly*, *frankly speaking*, *putting it frankly*, *put frankly*, *if I may be frank*, *if I can speak frankly*, *if I can put it frankly*, and so on.⁶ These are all made up of more than one word. Throughout the study, however, attention will be focused on one-word sentence adverbs with suffix *-ly*. The reason lies in the fact that many equivalents share the common distributional⁷ and semantic properties with the one-word sentence adverbs.

As Long (1961) aptly claims that "the adverbs make up the most miscellaneous of the part-of-speech categories and follow highly individualistic patterns of behavior to a greater extent than words of other types

do,"⁸ it seems difficult to thoroughly handle the diversity of adverbs. We hope that this study will be a clue to investigating the modification structure involving sentence adverbs.

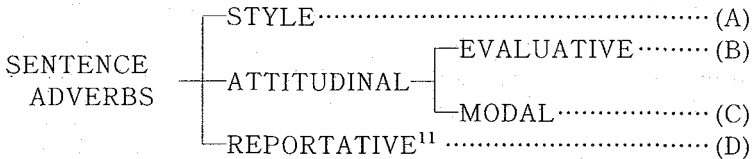
II. SYNTACTIC PROPERTIES OF SENTENCE ADVERBS

1. Presentation of Elaborate Classification

We will adopt a syntactically- and semantically-based approach in this study. Though our subclassification is similar in a number of respects to the proposals by Bellert (1977)⁹ and Sawada (1978),¹⁰ it must be noted that it will be slightly revised within the present treatment.

Let us give an outline of the subclassification, which is given below in Table 2:

Table 2
Elaborate Subclassification of Sentence Adverbs



- (1) (A) briefly, candidly, confidentially, frankly, honestly, truly, truthfully, etc.
- (B) fortunately, happily, luckily, regrettably, rightly, surprisingly, unfortunately, unhappily, wisely, etc.
- (C) apparently, certainly, evidently, obviously, possibly, probably, seemingly, surely, etc.
- (D) admittedly, allegedly, reportedly, reputedly, etc.

In the present study, as is shown above, we will propose that sentence adverbs should be classified into four classes. A striking point to be noted is that our classification is uniquely original in that a new class of REPORTA-

TIVE is established in the study. We will devote the subsequent sections to the observations of the syntactic phenomena of sentence adverbs to support the adequacy of our proposal.

2. Evidence for the Classification

In this section we are to present syntactic evidence for the adequacy of classifying sentence adverbs into four classes: STYLE, EVALUATIVE, MODAL, and REPORTATIVE. First, the co-occurrence of sentence adverbs with various types of sentences will be thoroughly examined, and second, some syntactic and semantic features which characterize EVALUATIVE and MODAL adverbs will be discussed.

We will take up four types of sentences such as (1) declaratives, (2) interrogatives, (3) imperatives, and (4) exclamatories, and examine the co-occurrence of them with the sentence adverbs shown in the previous section.

First, all sentence adverbs in every class can appear in declaratives:

- (2) a $\left\{ \begin{array}{l} \textit{Frankly,} \\ \textit{Honestly,} \end{array} \right\}$ Bob succeeded in the enterprise.
 b $\left\{ \begin{array}{l} \textit{Fortunately,} \\ \textit{Wisely,} \end{array} \right\}$ Bob succeeded in the enterprise.
 c $\left\{ \begin{array}{l} \textit{Evidently,} \\ \textit{Probably,} \end{array} \right\}$ Bob succeeded in the enterprise.
 d $\left\{ \begin{array}{l} \textit{Allegedly,} \\ \textit{Reportedly,} \end{array} \right\}$ Bob succeeded in the enterprise.

Second, STYLE adverbs can occur in interrogatives, while EVALUATIVE, MODAL, and REPORTATIVE adverbs cannot:¹²

- (3) a *Frankly*, does he know about it? (Quirk *et al.*, 1972, p. 517.)
 a' *Candidly*, how do I look? (Greenbaum, 1969, p. 85.)
 b *Does he *fortunately* know about it? (Quirk *et al.*, 1972, p. 517.)
 b'**Interestingly*, has he written a sonnet? (Schreiber, 1968, p. 31.)
 c **Possibly* will they leave early? (Greenbaum, 1969, p. 111.)

- c' *How does he drive, *obviously*? (Schreiber, 1968, p. 31.)
- d' **Allegedly*, did Mary succeed in the exam?
- d' **Reportedly*, is he very hard to deal with?

The point here is that only the adverbs in the REPORTATIVE class assume a peculiar behavior in interrogatives. They prove to be quite acceptable in the medial position according to our informant tests:

- (4) a Did Mary *allegedly* succeed in the exam?
- b Is he *reportedly* very hard to deal with?

Third, STYLE adverbs can appear with imperatives, whereas EVALUATIVE, MODAL, and REPORTATIVE adverbs never can:¹³

- (5) a *Frankly*, don't tell him. (Quirk *et al.*, 1972, p. 517.)
- a' *Honestly*, get out of here!
- b **Fortunately*, go to the store. (Schreiber, 1968, p. 27.)
- b' *Go home, *regrettably*. (*Ibid.*, p. 27.)
- c *Write your thesis, *probably*. (*Ibid.*, p. 27.)
- c' **Certainly*, do it at once, John. (Greenbaum, 1969, p. 112.)
- d **Admittedly*, let's do it at once. (*Ibid.*, p. 112.)
- d' **Reportedly*, get out of the room.

Fourth, some STYLE and EVALUATIVE adverbs may be accepted in exclamatories, but MODAL and REPORTATIVE adverbs are not completely accepted:¹⁴

- (6) a *Honestly*, how happy we are!
- a' *Confidentially*, what a tall boy he is!
- b ?How well he talks, *surprisingly*! (Greenbaum, 1969, p. 121.)
- b' ?*Fortunately*, how happy we are!
- c **Evidently*, how happy we are!
- c' **Certainly*, how well she speaks English!
- d **Allegedly*, how happy they are!
- d' **Reportedly*, how well she speaks English!

We have so far observed the co-occurrence of sentence adverbs with the four types of sentences. The results are given below in Table 3. In this table the types of sentences are put at the head of the column. When a group of sentence adverbs in the column on the left of Table 3 satisfies a condition, a "+" is entered. When it fails to satisfy the condition, a "-" is registered. A query indicates that it is doubtful whether the condition is satisfied or not.

Table 3
Interrelationships between
Sentence Adverbs and Different Types of Sentences

	Declaratives	Interrogatives	Imperatives	Exclamatories
STYLE	+	+	+	+
EVALUATIVE	+	-	-	?
MODAL	+	-	-	-
REPORTATIVE	+	-/+	-	-

(in medial position)

To summarize briefly, this matrix shows that STYLE and REPORTATIVE adverbs establish separate unique classes. That is, only STYLE adverbs can occur in declaratives, interrogatives, imperatives, and exclamatories; REPORTATIVE adverbs, which were traditionally regarded as a member of MODAL adverbs, can appear in the medial position in interrogatives.

In the remainder of this section we will discuss the adequacy of the subclassification of ATTITUDINAL adverbs into EVALUATIVE and MODAL adverbs.

Let us consider the following sentences, first:

(7) EVALUATIVE:

- a $\left\{ \begin{array}{l} \textit{Fortunately,} \\ \textit{Wisely,} \end{array} \right\}$ he is behaving well.
 b =It is $\left\{ \begin{array}{l} \textit{fortunate} \\ \textit{wise} \end{array} \right\}$ that he should be behaving well.

(Quirk *et al.*, 1972, p. 514.)

(8) MODAL:

a { *Certainly,*
Clearly, } he is behaving well.

b ≠ It is { *certain*
clear } that he should be behaving well.

(*Ibid.*, p. 514)

(7 a) and (7 b) hold a semantic equivalency, while (8 a) and (8 b), though (8 b) is seemingly a good paraphrase of (8 a), are not equivalent to each other in a strict sense. This special use of *should*, according to Palmer (1965), "is restricted to utterances that express surprise or some other kind of emotion."¹⁵ We can differentiate EVALUATIVE adverbs from MODAL ones in terms of the occurrence of putative *should* in the complement of the corresponding adjectival construction.

A second evidence is that some EVALUATIVE adverbs may appear with the negative morpheme *not*, whether the sentence is negated or not, but none of the MODAL adverbs may:

(9) EVALUATIVE:

a Not *surprisingly*, they were not happy with their results. (Quirk *et al.*, 1972, p. 519.)

b Not *surprisingly*, he protested strongly about it. (*Ibid.*, p. 518.)

c Not *unreasonably*, she refused him. (*Ibid.*, p. 518.)

(10) MODAL:

a *Not *possibly*, he didn't succeed in the exam.

b *Not *possibly*, he succeeded in the exam.

c *Not *certainly*, he won't come early in the morning.¹⁶

A third evidence is that topicalization may apply to complement clauses with MODAL adverbs, but that it may not apply to those with EVALUATIVE adverbs:

(11) EVALUATIVE:

- a *That John *fortunately* passed, no one ever expected Bill to notice _____. (Nakajima, 1982, p. 343.)
- b *That "everybody" is *luckily* not the true target of her resentment, he may then well conclude _____. (*Ibid.*, p. 343.)

(12) MODAL:

- a That John *evidently* passed, no one ever expected Bill to notice _____. (*Ibid.*, p. 343.)
- b That "everybody" is *probably* not the true target of her resentment, he may then well conclude _____. (*Ibid.*, p. 343.)

Finally, MODAL adverbs, along with some constituents in the main clause, can appear in the focal position of cleft sentences, but EVALUATIVE adverbs cannot:

(13) EVALUATIVE:

- *It was { *surprisingly*
happily } John that they selected as a delegate.
(*Ibid.*, p. 344.)

(14) MODAL:

- It was { *certainly*
undoubtedly } John that they selected as a delegate.
(*Ibid.*, p. 344)

Note that neither EVALUATIVE nor MODAL adverbs can occur alone in this position.

We have presented syntactic evidence in support of the subclassification of ATTITUDINAL adverbs into EVALUATIVE and MODAL adverbs. A further subdivision of EVALUATIVE and MODAL adverbs may be possible,¹⁷ but we will not go into this issue any further for simplicity of discussion.

III. A HIERARCHY OF SENTENCE ADVERBS

1. Sentence Adverbs and Various Internal Clauses

The aim of this section is to inspect the assumption that each group of sentence adverbs may be a member of different layers and to propose a tentative order of sentence adverbs, which is supported by X-bar syntax.

Suppose that there is a hierarchy of sentential elements within the sentence such as (15):

(15) PERFORMATIVE > ATTITUDINAL > MODALITY¹⁸

and that it corresponds to any class of adverbs, especially to any class of sentence adverbs in the present discussion. Since this hierarchy is established to explain the assumption that each group of sentence adverbs may belong to a different layer, the next thing to be considered is to confirm the validity of the order within the hierarchy.

Let us turn now to the problems of the hierarchy of sentence adverbs. Our solution to these problems is to adopt the X-bar theory. Jackendoff (1977) assumes that a clause should be a projection of the lexical category and traditional category S should be replaced by the major phrase category V. Though there are a lot of arguments as to the number of layers,¹⁹ Jackendoff (1977) proposes a "uniform three-level analysis," that is, the major phrasal category V³,²⁰ for all categories. Sentence adverbs, according to Jackendoff (1977), are assumed to be dominated by V³, but we will adopt the proposal made by Nakajima (1982)²¹ that the maximum layer should be V⁴.

In the previous section we demonstrated that sentence adverbs of each class show crucial differences in syntactic behavior. We will now investigate the occurrence of sentence adverbs in various internal structures of sentences and suggest that the occurrence of sentence adverbs may have something to do with the degree of subordination to the sentence, in other

words, the degree of independence as a sentence. Taking up four different types of environments—*independent sentences, embedded declaratives, embedded interrogatives, and subordinate non-finite clauses (infinitives and gerunds)*, we will examine the possibility of each group of sentence adverbs occurring in the four environments.

Needless to say, all sentence adverbs can occur in independent sentences:

- (16) a $\left\{ \begin{array}{l} \textit{Frankly,} \\ \textit{Honestly,} \end{array} \right\}$ you finished the job quickly.
 b $\left\{ \begin{array}{l} \textit{Fortunately,} \\ \textit{Wisely,} \end{array} \right\}$ you finished the job quickly.
 c $\left\{ \begin{array}{l} \textit{Probably,} \\ \textit{Evidently,} \end{array} \right\}$ you finished the job quickly.
 d $\left\{ \begin{array}{l} \textit{Allegedly,} \\ \textit{Reportedly,} \end{array} \right\}$ you finished the job quickly.

Next, some sentence adverbs are acceptable in embedded sentences, while others are not.²²

- (17) a Tom says that, $\left\{ \begin{array}{l} \textit{frankly,} \\ \textit{honestly,} \end{array} \right\}$ Mary passed the exam.
 b Tom says that, $\left\{ \begin{array}{l} \textit{fortunately,} \\ \textit{wisely,} \end{array} \right\}$ Mary passed the exam.
 c Tom says that, $\left\{ \begin{array}{l} \textit{probably,} \\ \textit{evidently,} \end{array} \right\}$ Mary passed the exam.
 d Tom says that, $\left\{ \begin{array}{l} \textit{allegedly,} \\ \textit{reportedly,} \end{array} \right\}$ Mary passed the exam.
 (18) a Bob believes that, $\left\{ \begin{array}{l} \textit{frankly,} \\ \textit{honestly,} \end{array} \right\}$ Mary passed the exam.
 b Bob believes that, $\left\{ \begin{array}{l} \textit{fortunately,} \\ \textit{wisely,} \end{array} \right\}$ Mary passed the exam.
 c Bob believes that, $\left\{ \begin{array}{l} \textit{probably,} \\ \textit{evidently,} \end{array} \right\}$ Mary passed the exam.
 d Bob believes that, $\left\{ \begin{array}{l} \textit{allegedly,} \\ \textit{reportedly,} \end{array} \right\}$ Mary passed the exam.

Seemingly, most sentence adverbs are unacceptable in embedded interrogatives:²³

- (19) a I asked him if he, $\left\{ \begin{array}{l} ?? \textit{frankly}, \\ \textit{honestly}, \end{array} \right\}$ worked for that trading company.
 b I asked him if he, $\left\{ \begin{array}{l} ?? \textit{fortunately}, \\ * \textit{wisely}, \end{array} \right\}$ worked for that trading company.
 c I asked him if he, $\left\{ \begin{array}{l} ?? \textit{probably}, \\ ?? \textit{evidently}, \end{array} \right\}$ worked for that trading company.
 d I asked him if he, $\left\{ \begin{array}{l} \textit{allegedly}, \\ \textit{reportedly}, \end{array} \right\}$ worked for that trading company.

The variation of the acceptability of the above examples may result from the presence of the homonyms of sentence adverbs. It should be noted that *honestly* in (19 a) seems to be acceptable since it is understood as an INTENSIFIER. It must be noticed, moreover, that REPORTATIVE adverbs are relatively permissible.

Most sentence adverbs cannot occur in certain types of subordinate non-finite clauses. Let us examine the environments with infinitives:

- (20) a *They will manage $\left\{ \begin{array}{l} \textit{frankly} \\ \textit{honestly} \end{array} \right\}$ to bomb the power plants.
 b *They will manage $\left\{ \begin{array}{l} \textit{fortunately} \\ \textit{wisely} \end{array} \right\}$ to bomb the power plants.
 c *They will manage $\left\{ \begin{array}{l} \textit{probably} \\ \textit{certainly} \end{array} \right\}$ to bomb the power plants.
 (Kajita, 1967, p. 59.)
 d *They will manage $\left\{ \begin{array}{l} \textit{allegedly} \\ \textit{reportedly} \end{array} \right\}$ to bomb the power plants.
- (21) a *I order you to $\left\{ \begin{array}{l} \textit{frankly} \\ \textit{honestly} \end{array} \right\}$ get your cat out of here!
 b *I order you to $\left\{ \begin{array}{l} \textit{fortunately} \\ \textit{wisely} \end{array} \right\}$ get your cat out of here! (Corum, 1974, p. 92.)
 c *I order you to $\left\{ \begin{array}{l} \textit{probably} \\ \textit{possibly} \end{array} \right\}$ get your cat out of here! (*Ibid.*, p. 92.)

d *I order you to $\left\{ \begin{array}{l} \textit{allegedly} \\ \textit{reportedly} \end{array} \right\}$ get your cat out of here!

Similar results can be obtained in the environments with infinitives involving perceptive verbs:

(22) a *I saw John $\left\{ \begin{array}{l} \textit{frankly} \\ \textit{honestly} \end{array} \right\}$ murder the woman. (Sakakibara, 1981, p. 110.)

b ??I saw John $\left\{ \begin{array}{l} \textit{fortunately} \\ \textit{wisely} \end{array} \right\}$ murder the woman.

c *I saw John $\left\{ \begin{array}{l} \textit{probably} \\ \textit{certainly} \end{array} \right\}$ murder the woman.

(Sakakibara, 1981, p. 110.)

d *I saw John $\left\{ \begin{array}{l} \textit{allegedly} \\ \textit{reportedly} \end{array} \right\}$ murder the woman.

Next, let us observe the occurrence of sentence adverbs in gerunds:

(23) a *Mary's $\left\{ \begin{array}{l} \textit{frankly} \\ \textit{honestly} \end{array} \right\}$ succeeding in the exam will please me.

b *Mary's $\left\{ \begin{array}{l} \textit{fortunately} \\ \textit{wisely} \end{array} \right\}$ succeeding in the exam will please me.

c *Mary's $\left\{ \begin{array}{l} \textit{probably} \\ \textit{evidently} \end{array} \right\}$ succeeding in the exam will please me.

d *Mary's $\left\{ \begin{array}{l} \textit{allegedly} \\ \textit{reportedly} \end{array} \right\}$ succeeding in the exam will please me.

The above observations show that sentence adverbs, which can appear in independent sentences, are less acceptable in other environments where the independence as a sentence, that is, sentencehood, is harder to maintain.

In the previous section we proposed to divide ATTITUDINAL adverbs into EVALUATIVE and MODAL adverbs by some syntactically well-justified evidence. This seems to suggest that EVALUATIVE and MODAL adverbs belong to different layers. To make the argument clearer, we will cite the following examples²⁴ relevant to the discussion:

- (24) a *Fortunately*, she won the first prize in the contest.
 b John said that, *fortunately*, she had won the first prize in the contest.
 c*John resents that she *unfortunately* failed to win the first prize in the contest.
 d*John asked whether she had *fortunately* won the first prize in the contest.
 e*It is important for her to *fortunately* win the first prize in the contest.
 f*Her *fortunately* having won the first prize in the contest pleased me.
- (25) a She *possibly* won the first prize in the contest.
 b John said that she had *possibly* won the first prize in the contest.
 c John regrets that she *possibly* failed to win the first prize in the contest.
 d John asked whether she had *possibly* won the first prize in the contest.
 e*It is important for her to *possibly* win the first prize in the contest.
 f*Her having *possibly* won the first prize in the contest pleased me.

Apart from the fact that neither class of sentence adverbs can occur in infinitives and gerunds, which is probably related to sentencehood, we must distinguish between EVALUATIVE and MODAL adverbs in terms of the possibilities of the occurrence of sentence adverbs in the internal structures of sentences. Therefore, it is necessary to add one layer to Jackendoff's maximum layer, V^3 , because sentence adverbs which he claimed belong equally to V^3 should be divided into two classes.²⁵ To sum up at this point, we assume that MODAL adverbs belong to V^3 and EVALUATIVE adverbs to V^4 , with the treatment of STYLE and REPORTATIVE adverbs untouched.

2. Investigation of the Scope of Sentence Adverbs

The most natural and persuasive solution for dealing with the complex phenomena of the occurrence of sentence adverbs is to utilize the notion of

“scope.” The left-to-right order is assumed to be the fundamental way of representing “scope” in English, though any transitory order could be used in natural language. When A is within the scope of B, for example, it follows that A can always appear on the right of B. Therefore, a class of sentence adverbs belonging to a higher layer must always precede a class of those belonging to a lower layer. In addition to this constraint, there are a few other constraints on the order of sentence adverbs, as follows:

- (26) i two sentence adverbs cannot usually be adjacent²⁶
 ii more than one sentence adverb of the same class cannot co-occur.

Consider, for instance, the following examples, where special attention should be paid to the sentences with double asterisks:

- (27) a **Strictly*, Mary *honestly* succeeded in the exam. (A-A)²⁷
 b *Frankly*, Mary *fortunately* succeeded in the exam. (A-B)
 c***Honestly*, Mary *wisely* succeeded in the exam. (A-B')
 d *Honestly*, Mary *certainly* succeeded in the exam. (A-C)
- (28) a **Fortunately*, Mary *frankly* succeeded in the exam. (B-A)
 b **Fortunately*, Mary *surprisingly* succeeded in the exam. (B-B)
 c **Fortunately*, Mary *rightly* succeeded in the exam. (B-B')
 d **Fortunately*, Mary *probably* succeeded in the exam. (B-C)
- (29) a **Wisely*, Mary *honestly* succeeded in the exam. (B'-A)
 b **Rightly*, Mary *fortunately* succeeded in the exam. (B'-B)
 c **Wisely*, Mary *rightly* succeeded in the exam. (B'-B')
 d***Wisely*, Mary *evidently* succeeded in the exam. (B'-C)
- (30) a **Evidently*, Mary *honestly* succeeded in the exam. (C-A)
 b **Probably*, Mary *fortunately* succeeded in the exam. (C-B)
 c **Evidently*, Mary *wisely* succeeded in the exam. (C-B')
 d **Certainly*, Mary *fortunately* succeeded in the exam. (C-C)

The above examples of the order of sentence adverbs seem to confirm that our assumption is correct, but, at the same time, we must not overlook the

fact that (27 c) and (29 d), whose unacceptability is shown especially by the notation of the double asterisks, are judged unacceptable.

A plausible way to deal with this issue is to maintain that this may come from the fallacy that the hierarchy should be captured only within a simplex framework of syntax. To support our position, we will offer other evidence. Consider the following examples, which suggest that the REPORTATIVE class cannot be easily handled within a simplex framework:

- (31) a* *Honestly*, Mary *admittedly* succeeded in the exam. (A–D)
 b* *Fortunately*, Mary *admittedly* succeeded in the exam. (B–D)
 c *Wisely*, Mary *admittedly* succeeded in the exam. (B'–D)
 d* *Evidently*, Mary *admittedly* succeeded in the exam. (C–D)
 e* *Admittedly*, Mary *allegedly* succeeded in the exam. (D–D)
 f *Admittedly*, Mary *honestly* succeeded in the exam. (D–A)
 g *Admittedly*, Mary *fortunately* succeeded in the exam. (D–B)
 h *Admittedly*, Mary *wisely* succeeded in the exam. (D–B')
 i *Admittedly*, Mary *evidently* succeeded in the exam. (D–C)

We must now consider the relative layer of the REPORTATIVE class. The examples of (31 a), (31 b), (31 d), and (31 g), possibly including (31 i), suggest that this class is not within the scope of A, B, and C classes and, therefore, it lies in the highest layer. The examples of (31 c) and (31 h) propose, on the other hand, that this class is within the scope of B' class and it is lower than B' in the hierarchy. These observations expose the fact that we cannot deal with these complications only in the light of the syntactically simplex hierarchy.

A more satisfactory solution would be one in which the function of sentence adverbs is to be captured in pragmatics as well as in syntax and semantics because "the use of an adverb is a reflection of how the speaker feels about the proposition he is uttering, how he evaluates the fact."²⁸ Following this position, we will pursue the pragmatic aspects of sentence

adverbs by focusing on the sentence at a discourse level in the next section.

IV. SEMANTIC AND PRAGMATIC ANALYSES OF SENTENCE ADVERBS

1. Truth-Value, Assertion, and Proposition

The aim of this chapter is to give semantically principled motivation for the syntactic phenomena of sentence adverbs which we observed and to propose a provisionally pragmatic analysis of sentence adverbs in the discourse, which lays great emphasis on the transmission of information between the speaker and the hearer. We will claim that the relationships of sentence adverbs with Proposition, which is assumed to have some truth-value, play a very important role in clarifying the nature of sentence adverbs.

We suggest that a sentence should consist of two constituents, that is, Assertion and Presupposition, in terms of the structure of discourse: the one is the information which the speaker asserts, directly or indirectly, to be true; the other is the information which the speaker presupposes to be true. Since these definitions are rather indefinite, it will be necessary to give a more convincing explanation. From a pragmatic viewpoint, we can presume that Assertion is the information which is assumed to be "given" to the speaker, but to be "new" to the hearer, while Presupposition is that which is supposed to be "given" both to the speaker and the hearer.²⁹

Our preliminary hypothesis is that sentence adverbs must be reconsidered in connection with truth-value, Assertion, and Presupposition. Let us introduce our pragmatic definitions of sentence adverbs:

(32) STYLE ADVERBS:

the speaker's subjective comment on the form of the Proposition, not on its truth-value

(33) EVALUATIVE ADVERBS:

- the speaker's subjective judgment of the Proposition which he believes to be true as a matter of course
- (34) MODAL ADVERBS:
the speaker's assessed judgment of truth-value of the Proposition
- (35) REPORTATIVE ADVERBS:
the speaker's comment on or judgment of the Proposition, based on the general speaker's judgment.

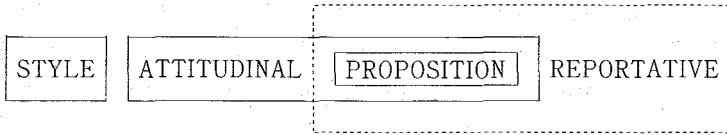
It is important to emphasize that there is a serious difference between STYLE and REPORTATIVE adverbs and EVALUATIVE and MODAL adverbs in terms of the relationships of sentence adverbs with (the truth-value of) the Proposition. STYLE adverbs and, partly, REPORTATIVE adverbs³⁰ do not directly concern the truth-value of the Proposition, while EVALUATIVE and MODAL adverbs do relate directly to its truth-value. In the next section we will give a semantically and pragmatically principled explanation for all the phenomena which we have dealt with in the present study.

2. Semantic and Pragmatic Explanation

In this section we are to attempt a semantically and pragmatically well-motivated explanation for the peculiar behavior of sentence adverbs, focusing on the relationships between sentence adverbs and their environments.

Before proceeding with the discussion, we should recall the relationships of sentence adverbs with Proposition. The presentation of the following illustration will serve to show how sentence adverbs are related to Proposition:

(36)



By the above illustration we intend to indicate that

- (i) ATTITUDINAL adverbs are closely connected with the Proposition and the speaker believes the truth of the Proposition
- (ii) REPORTATIVE adverbs are partly related to the Proposition and partly detached from it, for the speaker gives some judgment of the Proposition based on the general speaker's judgment, while he evades the direct responsibility for the truth-value of the Proposition
- (iii) STYLE adverbs are free from the truth-value of the Proposition and rather concern the way of the presentation of the Proposition.

It is first necessary to justify the possibilities of sentence adverbs occurring in various types of sentences. We have observed that

- (i) all classes of sentence adverbs can occur in declaratives
- (ii) STYLE adverbs can occur in interrogatives, imperatives, and exclamatories, while ATTITUDINAL and REPORTATIVE adverbs cannot
- (iii) REPORTATIVE adverbs, unlike MODAL adverbs, may appear in the medial position in interrogatives.

These facts could all be explained in terms of truth-value. It should be recognized that declaratives clearly have truth-value, while interrogatives, imperatives, and exclamatories are opaque concerning the truth of the sentence; that is, they have no truth-value. It follows, therefore, that only STYLE adverbs and, partly, REPORTATIVE adverbs, which are not directly related to the truth-value of a Proposition, can occur in interroga-

tives, imperatives, and exclamatories as well as in declaratives. As a sufficient condition of the occurrence of ATTITUDINAL and, partly, REPORTATIVE adverbs, we will propose that the environments in which ATTITUDINAL adverbs can appear must be assumed to be [+True], that is, [+Factive].

It would be possible to state that all sentence adverbs are Assertive in that they give some comment on, or judgment of, a Proposition. The incompatibility of sentence adverbs and their environments in terms of Assertive quality naturally leads to deviant sentences.³¹ As a necessary condition for the occurrence of all sentence adverbs, we will suggest that the environments where they can appear must be [+Assertive].

We have made a proposal that [+Factive] and [+Assertive]³² play an important part in characterizing sentence adverbs. We will next apply these conditions to the analyses of embedded sentences.

It should be recognized that our proposal is that truth-value and Assertion (or Presupposition) will have something to do with the sentence adverbs in embedded sentences. So far we have proposed by the investigation of the occurrence of sentence adverbs in their various environments that [+Assertive] environments are necessary for all sentence adverbs. Consider, for example, the following:

- (37) a Tom says that, $\left\{ \begin{array}{l} \textit{honestly}, \\ \textit{fortunately}, \\ \textit{certainly}, \\ \textit{allegedly}, \end{array} \right\}$ Mary succeeded in the exam.
- b Tom doubts that, * $\left\{ \begin{array}{l} \textit{honestly}, \\ \textit{fortunately}, \\ \textit{certainly}, \\ \textit{allegedly}, \end{array} \right\}$ Mary succeeded in the exam.
- c Tom regrets that, * $\left\{ \begin{array}{l} \textit{honestly}, \\ \textit{surprisingly}, \\ \textit{possibly}, \\ \textit{reportedly}, \end{array} \right\}$ Mary succeeded in the exam.

- d Tom knows that, $\left. \begin{array}{l} \textit{honestly}, \\ \textit{surprisingly}, \\ \textit{certainly}, \\ \textit{reportedly}, \end{array} \right\}$ Mary succeeded in the exam.

The above observations do not show that sentence adverbs can appear in any kind of embedded sentences. A closer investigation will reveal that sentence adverbs can occur in [+Assertive] environments. We must note, however, that the Assertive condition does not apply to MODAL adverbs. They can appear in embedded clauses under "Factive Non-Assertive predicates"³³ in the sense of Hooper and Thompson (1973).³⁴ Other relevant examples are shown in (38):

- (38) a John regrets that she *possibly* failed to win the first prize.
(Nakajima, 1982, p. 348.)
b I am sorry that he will *probably* never return.
c Mary hasn't forgotten that she would *certainly* go to Tokyo on Monday.
d It is interesting that Mary *evidently* succeeded in the exam.

To solve this paradox, we will introduce another condition of [+Factive] into the present analysis. The two conditions of [+Factive] and [+Assertive] will succeed in capturing the formulation of the occurrence of sentence adverbs. The facts observed in (37) reveal that STYLE, EVALUATIVE, MODAL, and, partly, REPORTATIVE adverbs cannot appear in [-Assertive] environments, and that MODAL adverbs can occur in either [+Assertive] or [+Factive] environments. The generalization which we will propose here about the relationships between sentence adverbs and their environments is as follows:

- (i) STYLE, EVALUATIVE, and, partly, REPORTATIVE adverbs require [+Assertive] environments as a necessary condition and [+Factive] environments as a sufficient one.

- (ii) MODAL adverbs demand either [+Assertive] or [+Factive] environments as a necessary condition.

In using STYLE, EVALUATIVE, and partly, REPORTATIVE adverbs, the speaker rather concerns himself in the presentation of his comment or judgment on the form of a Proposition, assuming the truth of the Proposition as a matter of course; in handling MODAL adverbs, he makes an assessed judgment on the truth-value of the Proposition, which leads to a statement of Assertion.

We have discussed the relationships between sentence adverbs and their environments exclusively. For a semantically and pragmatically rigid motivation, we have introduced the conditions of [+Assertive] and [+Factive], and demonstrated that they play a very important part in determining the occurrence of sentence adverbs in a given environment. In the next section we will present a tentative assumption that our formulation can apply to the prediction of the occurrence of sentence adverbs in discourse.

3. Tentative Discourse Analysis of Sentence Adverbs

In the preceding sections we maintained that truth-value and Assertion or Presupposition play a serious role in the occurrence of sentence adverbs. It should be noted that STYLE, EVALUATIVE, and, partly, REPORTATIVE adverbs can appear in such environments as satisfy the condition of [+Assertive], while MODAL adverbs can appear in such environments as meet the condition of either [+Assertive] or [+Factive].

An additional consideration to be taken into account is the applicability of our analysis to the discourse analysis of sentence adverbs, even if it seems very preliminary and tentative. We will offer a few concrete examples based on informant tests for our discussion. The informants in the tests were required to fill in a blank with possible or appropriate sentence adverbs,

given a certain context. The results are listed below each dialogue. The total number in the judgment of the appropriateness for each sentence adverb is registered in the parentheses. A query indicates that the informants were uncertain of their judgment.

Let us observe the following, for example:

(39) CONTEXT 1: It is two o'clock in the morning and everyone at the Lyons' is fast asleep, when the phone rings suddenly.

Mr. Lyons: What's that?

Mrs. Lyons: It's the telephone, dear.

Mr. Lyons: Who could be calling at this time of night?

Mrs. Lyons: _____, the Wilsons. The baby is due anytime now.

Mr. Lyons: Oh, of course. I'm not thinking clearly. I'll get it.

1 Frankly	+ (0)	- (12)	? (0)
2 Honestly	+ (0)	- (11)	? (0)
3 Truthfully	+ (0)	- (12)	? (0)
4 Fortunately	+ (0)	- (10)	? (2)
5 Surprisingly	+ (0)	- (12)	? (0)
6 Strangely	+ (0)	- (12)	? (0)
7 Probably	+ (9)	- (2)	? (1)
8 Evidently	+ (2)	- (10)	? (0)
9 Obviously	+ (8)	- (4)	? (0)
10 Admittedly	+ (0)	- (12)	? (0)
11 Allegedly	+ (0)	- (12)	? (0)
12 Reportedly	+ (0)	- (12)	? (0)

(40) CONTEXT 2: Keiko, Mrs. Ueda, and Mr. Ota get caught in a shower on their way from school.

Mr. Ota: It's getting very dark, isn't it?

Mrs. Ueda: We'd better hurry. _____, it's going to rain.

Keiko: Oh, I felt something.

Mr. Ota: Shall we drop in at the coffee shop down at the corner?

Keiko: Good idea! We can take shelter there till it stops.

1 Frankly	+ (2)	- (10)	? (0)
2 Honestly	+ (1)	- (11)	? (0)
3 Truthfully	+ (0)	- (12)	? (0)
4 Fortunately	+ (0)	- (10)	? (2)
5 Surprisingly	+ (2)	- (9)	? (1)
6 Strangely	+ (2)	- (10)	? (0)
7 Probably	+ (8)	- (4)	? (0)
8 Evidently	+ (8)	- (4)	? (0)
9 Obviously	+ (9)	- (3)	? (0)
10 Admittedly	+ (0)	- (11)	? (1)
11 Allegedly	+ (2)	- (10)	? (0)
12 Reportedly	+ (3)	- (9)	? (0)

The common tendency in (39) and (40) is that only MODAL adverbs can occur. In (39) Mr. and Mrs. Lyons share a presupposed (or non-assertive) knowledge that it must be the Wilsons who can call so late at night, as is clear from Mr. Lyons' remark "Oh, of course." In (40), on the other hand, Keiko, Mrs. Ueda, and Mr. Ota have a presupposed (or non-assertive) assumption that it is likely to rain soon from the look of the sky. We must note that STYLE, EVALUATIVE, and possibly REPORTATIVE adverbs cannot appear in such environments as marked by [-Assertive].

Let us observe other contexts that permit STYLE or EVALUATIVE adverbs as well as MODAL adverbs to occur:

- (41) CONTEXT 3: While Mr. and Mrs. White are out, their children are planning Mother's Day.

Catherine: Will everyone come here, please? There's something I want to discuss.

Stanley: O.K. What is it?

Sylvia: Where's Tommy? Tommy!

Catherine: _____, it's better without him.

Sylvia: Why?

Catherine: Well, it's about Mother's Day.

Sylvia: And you want to keep it a secret.

1 Frankly	+ (11)	- (1)	? (0)
2 Honestly	+ (9)	- (3)	? (0)
3 Truthfully	+ (8)	- (4)	? (0)
4 Fortunately	+ (2)	- (10)	? (0)
5 Surprisingly	+ (1)	- (11)	? (0)
6 Strangely	+ (1)	- (11)	? (0)
7 Probably	+ (7)	- (5)	? (0)
8 Obviously	+ (1)	- (11)	? (0)
9 Apparently	+ (2)	- (10)	? (0)
10 Admittedly	+ (3)	- (9)	? (0)
11 Allegedly	+ (0)	- (12)	? (0)
12 Reportedly	+ (1)	- (11)	? (0)

(42) CONTEXT 4: Mr. Miyata is waiting for Jim's call in his office.
The phone is ringing now.

Mr. Miyata: Hello, speaking. Oh, yes, Jim. I've been expecting your call.
Any good news?

Jim: I don't know if it's good or bad, but something very important has
come up!

Mr. Miyata: Oh, what is it?

Jim: The investigating team from the laboratory has finally come to a
conclusion. _____, the faulty models are not ours.

1 Frankly	+ (2)	- (8)	? (2)
2 Honestly	+ (1)	- (8)	? (3)
3 Truthfully	+ (1)	- (9)	? (2)
4 Fortunately	+ (10)	- (2)	? (0)
5 Surprisingly	+ (7)	- (3)	? (2)
6 Strangely	+ (7)	- (4)	? (1)
7 Probably	+ (5)	- (4)	? (3)
8 Evidently	+ (11)	- (1)	? (0)
9 Apparently	+ (11)	- (1)	? (0)
10 Admittedly	+ (1)	- (10)	? (1)

11 Allegedly	+	(2)	-	(9)	?	(1)
12 Reportedly	+	(5)	-	(5)	?	(2)

It is clear that there is no conversational Presupposition about the Proposition of the speakers Catherine and Sylvia. The absence of Presupposition means that the speaker makes an utterance in an [+Assertive] environment. The only difference between (41) and (42) lies in the fact that STYLE adverbs, not EVALUATIVE adverbs, may occur in the context of (41) and vice versa in the context of (42). In (41) when she says that it is better without Tommy, Catherine makes a subjective comment on the Proposition rather than on its truth-value, which is confirmed by Sylvia's utterance, "Why?" In (42), on the other hand, Jim has some responsibility for the truth-value of the Proposition because he is in a position to report the conclusion of the investigating team.

The above examples which we have observed illustrate that it may be possible to apply our formulation to the discourse analyses of sentence adverbs. Though further intensive research is necessary, we may safely assume that it is possible to predict the occurrence of sentence adverbs even at the discourse level if the conditions of [+Factive] and [+Assertive] are given.

V. CONCLUSION

In this paper we have proposed that sentence adverbs should be classified into four classes—STYLE, EVALUATIVE, MODAL, and REPORTATIVE adverbs—through a closer investigation of the traditional models of classification, which are based on the dichotomy of STYLE and ATTITUDINAL. To maintain the validity of the classification, we have observed that each of the four classes shows peculiar syntactic behavior in different types of sentences.

Next, we have maintained that the syntactically different behavior of EVALUATIVE and MODAL adverbs is easy to explain by assuming that each class may belong to a different layer and correspond to any stratum in the sentence if there is a hierarchy of sentential elements within the sentence. We have pointed out, furthermore, that the relative hierarchy of STYLE and REPORTATIVE adverbs may be hard to treat within a simplex framework of syntax even by examining the scope of each adverb thoroughly.

With a view to making a semantically principled explanation for the peculiar phenomena of sentence adverbs, we have introduced two conditions of [\pm Factive] and [\pm Assertive] into our analyses and claimed that they play a very crucial role in explicating the nature of sentence adverbs. For the justification of our generalization, moreover, we have demonstrated the applicability of the conditions of [\pm Factive] and [\pm Assertive] to the discourse analyses of sentence adverbs.

If our analyses are valid, they will suggest that sentence adverbs should be captured lexically. We hope that further intensive research will clarify the problems as to whether adverbs in general should be derived lexically or transformationally.

Notes

- 1 Assuming in the present paper that all DISJUNCTS are sentence-modifying adverbs, we will devote ourselves to DISJUNCTS and henceforth use the term "sentence adverbs" to refer to them. For classes of adverbials, see Randolph Quirk, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik, *A Grammar of Contemporary English* (London: Longman Group Limited, 1972), p. 421, and *A Comprehensive Grammar of the English Language* (London: Longman Group Limited, 1985), p. 503.
- 2 Refer to Randolph Quirk *et al.*, *A Grammar of Contemporary English*, p. 421, and

- A *Comprehensive Grammar of the English Language*, p. 613. For the syntactic criteria to characterize sentence adverbs, see Sidney Greenbaum, *Studies in English Adverbial Usage* (London: Longman Group Limited, 1969), p. 24.
- 3 Refer to Sidney Greenbaum, p. 508. Also, *A Comprehensive Grammar of the English Language*, p. 615.
 - 4 Note that the list is by no means intended to be exhaustive. A fuller list of sentence adverbs is given in Householder (1965) and Jacobson (1975). See Fred W. Householder, Jr., "A Preliminary Classification of Adverbs in English," an unpublished paper circulated by the Indiana University Linguistic Club, Bloomington, Indiana, 1965, and Sven Jacobson, *Factors Influencing the Placement of English Adverbs in Relation to Auxiliaries: A Study in Variation* (Stockholm: Almqvist & Wiksell International, 1975), pp. 226-35, 252-4, and 257-9.
 - 5 Randolph Quirk *et al.*, *A Grammar of Contemporary English*, pp. 509-13.
 - 6 Minoru Nakau, "Bunfukushi no Hikaku" (Comparison of Sentence Adverbs), *Nichieigo Hikaku Koza*, II, *Bunpo* (Comparative Study between Japanese and English Series, II, Syntax), ed. Tetsuya Kunihiro (Tokyo: Taishukan Publishing Company Limited, 1980), pp. 214-5.
 - 7 As a distributional property of sentence adverbs, we claim that the initial and the final position with a conscious shift of intonation, which is normally indicated by a comma in written language, are most dominant. Refer to Hans H. Hartvigson, *On the Intonation and Position of the So-Called Sentence Modifiers in Present-Day English* (Odense: Odense University Press, 1969), pp. 157-8.
 - 8 Ralph B. Long, *The Sentence and Its Parts: A Grammar of Contemporary English* (Chicago: The University of Chicago Press, 1961), p. 269.
 - 9 Bellert (1977) classifies sentence adverbs into five subclasses: (1) evaluative adverbs, (2) modal adverbs, (3) domain adverbs, (4) conjunctive adverbs, and (5) pragmatic adverbs. Only (1), (2), and (5) subclasses are involved in the present study. See Irena Bellert, "On Semantic and Distributional Properties of Sentence Adverbs," *Linguistic Inquiry*, VIII (1977), 342-50.
 - 10 It must be noticed that Sawada (1978) does not take STYLE adverbs into consideration in his analyses and that he adopts the dichotomy of "epistemic" and "attitudinal." See Harumi Sawada, "A Contrastive Study of Japanese and English Sentence Adverbials: From the Viewpoint of Speech Act Theory," *Gengo Kenkyu*,

LXXIV (1978), 6.

- 11 The term "REPORTATIVE" is our coinage. We imply by this term that the adverbs of this class are oriented to the view of the speaker in general and, therefore, hold functions of a "report."
- 12 This property may serve to explain the ambiguities between sentence adverbs and ADJUNCTS. All MANNER ADJUNCTS and all EMPHASIZERS except *certainly* and *surely* can appear in interrogatives. Note that the reading as a sentence adverb is completely excluded in the following examples:
- a Did he *naturally* accept my proposal?
 - b Is he *naturally* acting Hamlet?
 - c Do they $\left\{ \begin{array}{l} *certainly \\ *surely \\ definitely \\ really \end{array} \right\}$ want him to be elected? (Quirk *et al.*, 1972, p. 443.)
- 13 Some EMPHASIZERS are unacceptable in imperatives, but MANNER ADJUNCTS are quite acceptable:
- John, do it at once $\left\{ \begin{array}{l} correctly. \\ wisely. \end{array} \right\}$ (Greenbaum, 1969, p. 112.)
- For further comments on this matter, refer to Randolph Quirk *et al.*, *A Grammar of Contemporary English*, p. 443.
- 14 Greenbaum (1969) unwillingly agrees that the acceptability of the sentences varies according to the informants. Though our informant tests also show the same results as Greenbaum's, STYLE adverbs tend to be rather acceptable in exclamatories. See Sidney Greenbaum, p. 121.
- 15 Frank R. Palmer, *A Linguistic Study of the English Verb* (London: Longman Group Limited, 1965), p. 131.
- 16 These interesting phenomena may be related to the fact that MODAL adverbs hold the same function as epistemic auxiliaries, which cannot be negated at all, in that both of them express the probability of the truth of the Proposition. Consider the following:
- a This gazebo may not have been built by Wren.
 - b=It is possible that this gazebo was not built by Wren.
 - c≠It is not possible that this gazebo was built by Wren.

See Michael A. K. Halliday, "Functional Diversity in Language as Seen from a

Consideration of Modality and Mood in English," *Foundations of Language*, VI (1970), 322-61.

17 Refer to Harumi Sawada, 5-9.

18 The stratum corresponding to the REPORTATIVE class is not included in this hierarchy. The reason is that the REPORTATIVE class and the others should be dealt with separately because they have different asserters.

19 As Jackendoff (1977) himself points out, there have been many solutions to the number of layers:

In Chomsky's original formulation, n equals 2 for nouns and 3 for verbs (assuming the verb is head of the sentence). Vergnaud (1974) and Siegel (1974) have n equal to 4, at least for nouns; Dougherty (1968) has n equal to 3 for nouns and 6 for verbs; Jackendoff (1971; 1974 a) has n equal to 2 for all categories. See Ray S. Jackendoff, *X̄ Syntax: A Study of Phrase Structure* (Cambridge, Massachusetts: The MIT Press, 1977), p. 35.

20 For the purpose of simplicity of the notation, numerals, instead of bars, are to be used to show the number of layers.

21 Nakajima (1982) extends the V^4 system to the analysis of adverbial subordinate clauses as well as sentence adverbs. Refer to Heizo Nakajima, "The V^4 System and Bounding Category," *Linguistic Analysis*, IX (1982), 341-71.

22 A closer investigation will show that these phenomena are too complicated to handle easily. We will discuss this matter fully in Section IV.

23 The judgment of the acceptability of the following varies according to our informants:

He asked whether they $\left. \begin{array}{l} * \textit{frankly} \\ ? \textit{honestly} \\ \textit{fortunately} \\ ? \textit{wisely} \\ \textit{probably} \\ ? \textit{evidently} \\ ?? \textit{allegedly} \\ ?? \textit{reportedly} \end{array} \right\}$ would leave early.

Greenbaum (1969) and Quirk *et al.* (1972) judge the following examples unacceptable:

a *He asked whether *disappointingly* they would leave early. (Greenbaum, 1969, p. 112.)

b *He explained how *fortunately* they can leave early. (*Ibid.*, p. 112.)

- c *He asked whether *frankly* they would leave early. (*Ibid.*, p. 112.)
- d *He asked whether, *fortunately*, they knew anything about it. (Quirk *et al.*, 1972, p. 517.)

On the other hand, Quirk *et al.* (1972) regard the following with a STYLE adverb as acceptable and Schreiber (1968) also presents an acceptable example with a MODAL adverb:

- a They want to know whether, *strictly speaking*, they're trespassing. (Quirk *et al.*, 1972, p. 517.)
- b I wonder whether he *obviously* knew the answer. (Schreiber, 1968, p. 88.)

Though further research may be needed on this matter, we will depend on our own examples checked by the informant tests for the sake of the discussion.

- 24 Most of the examples are taken from Nakajima (1982). Refer to Heizo Nakajima, 348.
- 25 It may be necessary to explain some kinds of adverbs belonging to V² and V¹. V² adverbs are those of time, frequency, manner, instrument, place, and so on which modify a whole VP, that is, V¹, and restrict the meaning of VP, while V¹ adverbs are those of manner co-occurring with such verbs as take part in subcategorizing verbs and are a complement of V¹. We must note that these adverbs can, of course, appear in those environments in which sentence adverbs cannot occur.
- 26 This constraint is pointed out by Jackendoff (1972). As he implies, it may be a stylistic constraint. Since it seems to be irrelevant to the present discussion, therefore, we omit the examples related to this constraint. See Ray S. Jackendoff, *Semantic Interpretation in Generative Grammar* (Cambridge, Massachusetts: The MIT Press, 1972), p. 87.
- 27 The capital letters, A, B, and C, refer to STYLE, EVALUATIVE, and MODAL adverb classes, respectively. It must be noted that such "subject-agent-oriented" adverbs as *rightly*, *wisely*, and so on are assigned to a B' class.
For the discussion about the "subject-agent-oriented" adverbs, refer to Harumi Sawada, 7-9 and Sidney Greenbaum, pp. 153-61.
- 28 Claudia Corum, "Adverbs...Long and Tangled Root," *Papers from the Tenth Regional Meeting*, eds. Michael W. Lagaly, Robert A. Fox, and Anthony Bruck (Chicago: Chicago Linguistic Society, 1974), p. 98.

- 29 Similar definitions can be found in Jackendoff (1972) and Stalnaker (1974). Jackendoff defines Presupposition as "the information in the sentence that is assumed by the speaker to be shared by him and the hearer," and Stalnaker regards it as the common background belief "of a speaker in a given context just in case the speaker assumes or believes that P [Proposition], assumes or believes that his addressee assumes or believes that P, and assumes or believes that his addressee recognizes that he is making these assumptions, or has these beliefs." See Ray S. Jackendoff, *Semantic Interpretation in Generative Grammar*, p. 230 and Robert C. Stalnaker, "Pragmatic Presupposition," *Semantics and Philosophy*, eds. Milton K. Munitz and Peter K. Unger (New York: New York University Press, 1974), p. 200.
- 30 To avoid any misunderstanding, a further comment may be needed. We can claim that REPORTATIVE adverbs share, what is called, the "Janus" properties to Proposition. While the speaker tries to evade the responsibility for the Proposition by way of depending on the general speaker's judgment, he dares to give some judgment of the Proposition from the source of the general speaker's judgment. It is in this sense that we have proposed to distinguish REPORTATIVE adverbs from STYLE, EVALUATIVE, and MODAL adverbs.
- 31 It may be that such deviant sentences as infinitives and gerunds with sentence adverbs should be discussed in terms of sentencehood. Both infinitives and gerunds seem to be detached from sentence-likeness. Furthermore, it may be better that the applicability of topicalization to complement clauses including sentence adverbs and the possibility of sentence adverbs, together with some constituents in the main clause, occurring in the focal position of cleft sentences, should also be dealt with in terms of sentencehood.
- As to the claim that infinitives and gerunds are not Assertive, see Joan B. Hooper and Sandra A. Thompson, "On the Applicability of Root Transformation," *Linguistic Inquiry*, IV (1973), 484-5.
- 32 Kiparsky and Kiparsky (1971) propose that the factive/non-factive is one of the significant divisions among predicates. Hooper and Thompson (1973) and Hooper (1975) expand the Kiparskys' analysis into the factive/non-factive and the assertive/non-assertive distinctions to yield four main classes of predicates whose complements are clauses consisting of *that* plus a full sentence. See Paul Kiparsky and Carol Kiparsky, "Fact," *Semantics: An Interdisciplinary Reader in*

Philosophy, Linguistics, and Psychology, eds. Danny D. Steinberg and Leon A. Jakobovits (Cambridge: Cambridge University Press, 1971), pp. 345–69; Joan B. Hooper and Sandra A. Thompson, 473–96; and Joan B. Hooper, “On Assertive Predicates,” *Syntax and Semantics*, IV, ed. John Kimball (New York: Academic Press, 1975), pp. 91–124.

33 Hooper and Thompson (1973) propose the four-way classification of predicates as follows:

A (Non-factive Assertive):

say, report, exclaim, assert, claim, vow, be true, be certain, be sure, be obvious; suppose, believe, think, expect, guess, imagine, it seems, it happens, it appears

B (Non-factive Non-Assertive):

be (un)likely, be (im)possible, be (im)probable, doubt, deny

C (Factive Non-Assertive):

resent, regret, be sorry, be surprising, bother, be odd, be strange, be interesting

D (Factive Assertive):

realize, learn, find out, discover, know, see, recognize

See Joan B. Hooper and Sandra A. Thompson, 473–4. For fuller members of the predicates, refer to Joan B. Hooper, p. 92.

34 It should be noticed that Amano (1976) maintains that ATTITUDINAL adverbs cannot modify non-assertive predicates. See Masachiyo Amano, “Nishurui no Bunfukushi no Bunshushoku ni Kansuru Seigen ni Tsuite” (On the Restrictions of the Sentence Modification by Two Types of Sentence Adverbs), *English Linguistics*, XV (1976), 44–64.

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