
Reviewed by Yasuhiro Kato, Sophia University*

1. INTRODUCTION. This book presents the latest and culminating results of the research on negation and related issues that H has pursued in a series of works, including his seminal 1972 dissertation. H convincingly shows 'how the study of negation in natural language has been informed by, and how it informs, research into the character of logical form, the nature of implicature and presupposition, and the delineation of the semantics/pragmatics borderline within linguistic theory and the philosophy of language' (xxii). His expositions, as are expected, traverse not only major modules of linguistic theories, but also details of related disciplines, such as classical and modern logic, psychology, the philosophy of language, and the history of ideas.

On the linguistic side, his basic concern is to pursue the consequences of the neo-Gricean model of nonlogical inference applied to semantic and pragmatic problems in general and to negation in particular. As to the form and function of negation per se, H proposes a fundamental dichotomy of descriptive and metalinguistic negation, the former of which is governed by an extended version of term logic.

As will be seen, H's work occupies a quite unique position in the history of studies on negation. First, while previous works on negation in modern linguistics, including Jespersen (1917), Klima (1964), Jackendoff (1972), and Ota (1980) among others, have been restricted to the linguistic aspects of negation, H explores extensively the adjacent disciplines mentioned above and shows that their results are indispensable to uncover the nature of negation in natural language. Secondly, his research not only deals with the studies undertaken in the modern period, but with details of the pre-modern and ancient traditions on the subject (see especially Ch. 1). Thirdly, synthesizing and extending these linguistic/

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non-linguistic and modern/pre-modern studies, he elucidates the highly modular character of negative phenomena and several large-scale generalizations that govern distinct components of the phenomena hitherto left unrelated. In fact, this book makes it possible for the first time to have a unified perspective over the vast and intertwined areas in question.

In section 2, I shall first present a brief survey of the major issues of each chapter. In sections 3–5, I will discuss some of the basic problems in his work and suggest, where possible, directions for further developments.

2. AN OUTLINE. In Ch. 1, 'negation and opposition in classical logic,' H introduces major themes of the theory of negation, tracing their origins back to Aristotelian logic, through the rich and entangled history of medieval commentaries and modern controversies upon the subject. The themes include (i) contrary vs. contradictory oppositions, (ii) negation as a mode of predication (Aristotle's term logic) vs. as a one-place operator (Fregean propositional logic), (iii) the question of existential import as an instance of semantic presupposition, (iv) the controversy of whether negative sentences are less primitive and informative than their affirmative counterparts (asymmetricalist position) or not (symmetricalist view). Also surveyed is the place of negation in the history of ideas in India and the West.

In Ch. 2, 'negation, presupposition, and the excluded middle,' H explores the nature of semantic presupposition and the implications of the cases of presupposition failure to logical systems. H concludes by rejecting the semantic treatment of ambiguity of negation and the semantic notion of presupposition, preserving the bivalence of logic. Negation is ambiguous only on pragmatic ground.

Ch. 3, 'markedness and the psychology of negation,' is exclusively concerned with what H calls asymmetry thesis: a negative statement is the marked member of the affirmative/negative opposition. After having established the asymmetry on functional and psycholinguistic grounds, H addresses himself to the basic problems of how to derive the extra supposition of negation and why the asymmetry exists at all. In due course, he introduces and defends a dualistic model of non-logical inference, a reorganized version of Grice's maxims of conversation.

The next three chapters 4–6 deal with pragmatic aspects of negation. Ch. 4, 'negation and quantity,' focuses on the structure and representa-
tion of the quantitative (and related) scales, their interactions with negation, and the history of studies on scalar predicates and related issues. He shows specifically that weak scalar operators such as *three, many, and good* are (i) lower-bounded by logical form, which results in the unilateral 'at least' reading, and (ii) upper-bounded by implicature, which in conjunction with (i), results in the bilateral 'exactly' reading. As to the logical operators plotted on the so-called Square of Opposition (whose history is closely surveyed), some logical and semantic asymmetries are attested and partly explained.

In Ch. 5, 'the pragmatics of contra(dicto)ry,' H examines in detail three fundamental processes that involve the pragmatic strengthening of contradictory to contrary negation: affixal negation, negative-raising construction, and the litotic understanding of simple negation (*She isn't happy* vs. *She is unhappy*). H shows that the contrary reading in these cases obeys the same condition: it is available 'only when the negated predicate [or the base for affixation, YK] is positive and relatively weak (i.e. just above the midpoint on its scale)' (338).

In Ch. 6, a revised version of Horn 1985, H attempts to establish a new category of METALINGUISTIC NEGATION and explores its general properties. The distinction of the metalinguistic and descriptive negation, H maintains, should be made on a pragmatic, but not on a semantic, ground. This pragmatic treatment makes it possible to avoid the problem of semantic presupposition (Ch. 3), to capture parallels of the metalinguistic uses of negation and other operators, and to leave unchanged the logical laws such as double negation and Modus Tollendo Ponens\(^1\) that the metalinguistic negation does not respect. The interaction with the dualistic model of inference (Ch. 3) is also discussed.

In Ch. 7, 'negative form and negative function,' H turns to the question of how many distinct species of negation must be admitted in the theory of natural language. H's final inventory consists of descriptive and metalinguistic negation, the former of which includes predicate denial and predicate term negation, excluding the external, sentential operator of the Fregean type. Some residual problems relating to the notions of scope, focus, and (pragmatic) presupposition are also discussed.

\(^1\) The law of Modus Tollendo Ponens (MTP) reads as: the assumption of \(p \lor q\), together with the negation of either disjunct, licenses the inference of the other disjunct.
Two appendices follow the last chapter. They deal with the validity of Geach's proof concerning the incoherence of multivalued logic and with lexical and pragmatic properties of inherent negation.

In spite of the diversity of topics, H's underlying themes are clearly attested. In what follows, restricting myself to the linguistic aspects of the investigation, I will take up three of the main problems and discuss them in some detail.

### 3. A DUALISTIC MODEL OF NONLOGICAL INFERENCE.

#### 3.1. THE ORGANIZATION OF THE MODEL.

Let us first examine H's model of non-logical inference introduced in Ch. 3. The basic tenet is that Grice's maxim of Quality ('be true') 'is primary and essentially unreducible' (194); while the remaining (sub)-maxims should be reduced to two opposed principles. The principles, which are referred to as the Q(uality) and the R(elation) principles, are assigned respectively the following properties (cf. 194f):

<table>
<thead>
<tr>
<th>(1)</th>
<th>the Q principle</th>
<th>the R principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>Make your contribution</td>
<td>Make your contribution</td>
</tr>
<tr>
<td></td>
<td>sufficient</td>
<td>necessary</td>
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<td></td>
<td>(hearer-oriented)</td>
<td>(speaker-oriented)</td>
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<tr>
<td>boundedness</td>
<td>lower-bounding law</td>
<td>upper-bounding law</td>
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<td>implicatum</td>
<td>upper-bounding</td>
<td>lower-bounding</td>
</tr>
<tr>
<td>locus classicus</td>
<td>scalar implicature</td>
<td>indirect speech act</td>
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<tr>
<td>motivation</td>
<td>linguistic</td>
<td>social or cultural</td>
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These Q and R principles, H maintains, correspond respectively to 'two antinomic forces' in language: the hearer's economy to place a lower bound on its informational content and the speaker's economy of 'least effort' to place an upper bound on the form of message (cf. 192). In other words, a speaker who says p may license the Q-inference that he meant 'at most p' (as in the case of scalar predication), and may license the R-inference that he meant 'more than p' (as in the case of indirect speech act).

The Q and R principles may induce instances of maxim clash as in the

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2 See also Horn 1984, an earlier version of the proposal. The revision is primarily concerned with the correspondences between Grice's and Horn's principles and with the instances of applications.
Gricean system. The clash or conflict, however, may be resolved through what H calls the division of pragmatic labor (henceforth, DPL), which reads as follows:

(2) [Given two coextensive expressions, the briefer and/or more lexicalized form will tend to become associated through R-based implicature with some unmarked, stereo-typical meaning, use, or situation, and the marked, more complex or prolix, less lexicalized expression tends to Q-implicate a marked message, one which the unmarked form could not or would not have conveyed (197).]

Thus, consider 3 (cf. 197):

(3) a. Can you pass the hot sauce?
   b. Do you have the ability to pass the hot sauce?

3a, with the briefer form, R-implicates a request, a conventionalized, stereotypical meaning; 3b, with the prolix form, Q-implicates only the literal, nonconventionalized question.

As is apparent, the DPL covers not only conversational phenomena, an original target of the Gricean system, but also a diverse range of cases, including lexical blocking, pronominal interpretation, historical change (especially, the Jespersen's cycle), the meaning of double negation, and the functional asymmetry of the affirmative/negative contrast.3

The innovation of H's approach lies in the fact that, avoiding an extreme version of the reductionist approach,4 he proposes two opposed principles presented above. Central here is the functional notion of ECONOMY that accounts for why these two principles have the properties they do. Furthermore, the approach makes it possible (and necessitates) to formulate an over-arching principle, i.e. the DPL, which decides which principle of Q and R applies to a given expression.

3.2. THE BLOCKING EFFECT. For the proper functioning of the DPL at least the following notions should be clarified:

(4) a. the coextensiveness of relevant expressions

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3 It is suggested that the DPL is not a unique solution to the functional asymmetry in question. Two possibilities are pursued to generate the extra supposition of negation: the supposition is either derived as Q-based implicatum or derived from the notions of prototype and conventionalization. See Horn (1989: 200-01).

4 For instance, Harnish 1976 attempts to unify maxims of quality and quantity; and Sparber and Wilson 1986 proposes a system which is based on the notion of relevance.
b. the relative briefness or the degree of lexicalization of expressions
c. the degree of markedness of meaning, use, or situation

The empirical content of the DPL is that these factors 4a–c ‘tend to become associated’ with each other as is stated in 2.\(^5\) The correspondence of form, meaning, and function is brought about by the effect of lexical blocking: given two coextensive expressions, the briefer form prevents the more complex one from having the unmarked meaning. Moreover the effect itself is correlated with the notion of markedness:

\[(5)\] The strength of this blocking effect varies inversely with the markedness of the alternative expressions (499).

To illustrate how the blocking works, let us recapitulate H’s analysis of the *every/some* asymmetry with respect to negation (cf. 490f, with examples slightly modified):

\[(6)\]
- a. Everyone didn’t come.
- b. Not everyone came.

\[(7)\]
- a. Someone didn’t come.
- b. Nobody came.

While *every* in the subject position as in 6a is preferably negated, *some* in that position as in 7a can hardly be negated except in a sufficiently loaded context as in 8:

\[(8)\] She swung round, she took two strides to him, waiting for someone to stop her, but someone didn’t.

The basic difference then is that 6a is ambiguous between NEG-Q and Q-NEG readings; 7a is not.

H argues that this asymmetry of *every* and *some* is derived from the joint effect of several pragmatic factors, two of which are vital here. First, 6a and 7a have respectively the related expressions, 6b and 7b. The latter forms are more lexicalized than 6a and 7a and are specialized to the unmarked reading of NEG-Q, unmarked in that it corresponds to the surface order of the negative and Q. Secondly, with respect to 6b and 7b themselves, 6b is more marked than 7b. This is due to the fact that *not every* in 6b involves *not* in a non-nexal position and is restricted not to occur in the direct and prepositional object positions; whereas, *nobody* in

\(^5\) This association may not be obtained if other pragmatic factors intervene. For instance, in Appendix 2, H argues that in a pair of persuade ... not and dissuade, the degree of lexicalization does not correspond to markedness, where a factor of conventionalization is operative.
7b is free from such restrictions.

Given these facts, the DPL predicts that the less lexicalized expressions, 6a and 7a, are prevented from having NEG-Q reading which unmarked forms are specialized for. The blocking effect, however, is in an inverse relation to the degree of markedness of the form that issues the effect. Since 6b is more marked than 7b, the former's effect of blocking is weak, so that it allows the possibility for 6a to have the NEG-Q reading as well as Q-NEG reading. Hence, the asymmetry of 6a and 7a.

3.3. PROBLEMS. At least two problems could be pointed out in the above approach. First, the analysis of every/some asymmetry will not be extended to other pairs of quantifiers that exhibit the same effect of blocking. Consider, for instance, 9a and 9b, where some in 7 is replaced by many:

(9) a. Many people didn't come.
   b. Not many people came.

In this case, not many in 9b has the same effect of blocking as nobody does in 7b, so that 9a may not have the NEG-Q reading unless sufficiently rich contexts or proper predicates are obtained.6 Note further that in 6b and 9b not is not lexically incorporated into the quantifier, which means that no apparent difference of the degree of lexicalization is involved in the relevant respect. Hence, the DPL analysis does not uniformly account for the difference between 6a/b and 7a/b on the one hand and between 6a/b and 9a/b on the other. Note that, if 9b is replaced by 7b, the DPL will apply straightforwardly as in case 7. Hence, one will have to make clear in what sense nobody, but not not many, is 'coextensive' with many ... not in 9a.

The second problem on the DPL account with respect to the every/some asymmetry is to ascertain how (and if) it works in 'a large number of verb-final languages where there is no incorporation of negation into quantifiers' (500). If the DPL is a universal pragmatic principle, it must work in this type of language as well. H notices this problem and cites as an instance a set of relevant sentences from Kato (1985). To make the point clear, however, let me consider the following sentences which correspond more closely to the English cases.

(10) a. zen'in ga ko -nakat-ta
   every Nom come NEG past

6 See Ota (1980: 357f).
'Everyone didn’t come.'

b. zen’in wa ko -nakat-ta
   every Contr come NEG past
   'Not everyone came.'

(11) a. oozei ga ko -nakat-ta
   many Nom come NEG past
   'Many people didn’t come.'

b. hitorimo ko -nakat-ta
   nobody come NEG past
   'Nobody came.'

In 10b, the relevant function of wa is that of contrastive.\(^7\)

Note first that zen’in in 10a, but not oozei in 11a, can be interpreted as negated without wa: 10a is ambiguous between Q-NEG and NEG-Q readings, but 11a is not. Observe 12 and 13:

(12) a. zen’in (ga) ki-te imasan ga, hajimete imashoo.

b. tatoe subete ga kin de nai ni sitemo yahari kono naka ni kin wa aru

(13) a. oozei (ga) ki-te imasan ga, ...

b. tatoe ooku ga kin de nai ni sitemo, ...

The contrast between 10a and 11a will readily be accounted for by the DPL, if it is shown that zen’in wa in 10b is less lexicalized than hitorimo in 11b. Since hitorimo as a whole functions as a so-called negative polarity item, it may be conceived as more lexicalized than zen’in wa.

A problem analogous to the English case 7 will arise, however, if 11b is replaced by 11c below, where NEG-Q reading is expressed by a non-lexicalized expression oozei wa:

(11) c. oozei wa ko-nakat-ta (ki-ta no wa hutari dake da)
Since the degree of markedness with respect to lexicalization is the same between 10b and 11c, the DPL will not distinguish these two cases.

3.4. ACQUISITION OF THE Q/NEG INTERACTION IN JAPANESE. At this point, let us present a piece of acquisition data relevant to the functional difference between hitorimo in 11b and oozei wa in 11c above.

Kobayashi (1991) investigates the acquisition of the relative scope of universal quantifiers and the negative on the basis of an experimental

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study on 10 and 12 years old children and undergraduate students. Her result is that the acquisition precedes from 14a to 14c with an intermediate stage 14b:

(14) Given negative sentences that contain a universal quantifier with or without *wa*:

a. no distinction is made between partial and total negation (whether *wa* is present or not)

b. only partial negation is available (whether *wa* is present or not)

c. partial negation is obtained only if *wa* is present.8

She suggests as one of the possible explanations that the transition reflects the process of functional division or specification with respect to related constructions. This possibility could be articulated as follows: the acquisition in this respect is initiated first by the fundamental distinction of negation and affirmation with no subdivision of partial/total negation, which results in 14a. This stage is followed by the acquisition of expressions specialized for the total negation such as hitorimo, daremo, nanimo, etc., all of which are lexically marked as negative polarity items. The acquisition of the items presumably has the blocking effect, so that it prevents the quantifier (with or without *wa*) from having total negation as in 14b. Finally, the function of *wa* is properly recognized to induce the partial negation reading by overriding the blocking effect.

This line of reasoning, if correct, shows that the DPL may also function as a leading principle in language acquisition, and, in particular, that there is a sense that hitorimo is less marked than the quantifier + *wa* expressions. But this result again imposes a problem on Horn’s use of DPL in that both of the expressions have the same effect with respect to the blocking.

3.5. **Japanese Causatives.** Finally, let us note that what Shibatani (1976) calls ‘the division of semantic function’ in the Japanese causative construction will be subsumed under the DPL. He distinguishes two types of causatives, i.e. lexical causatives as in 15a and productive (or syntactic) causatives as in 15b, where *(s)*ase is a causative morpheme.

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8 Kobayashi 1991 subdivides 14c into two successive stages, where *wa* occurs in the immediately following position of a quantifier and in the interverbal position, respectively. We will not concern this subdivision here.
He shows that 'the productive causative primarily expresses the meaning of directive causation, and the lexical causative manipulative causation' (260). Note that lexical causatives, by definition, are more lexicalized or briefer than their corresponding productive causatives with the affix (s)ase. Hence, Shibatani's result will support the DPL to the extent that the manipulative meaning is shown on conceptual grounds to be less marked than the directive meaning.

In this regard, note that Shibatani's analysis also serves as a case where the DPL interacts with other pragmatic factors. Thus, under specifiable conditions, lexical causatives can express directive meaning when it is associated with a purpose that is sufficiently conventionalized. Conversely, productive causatives can also express manipulative causation in case 'there is no corresponding lexical causative form' or 'the causee is something not permitted by the lexical [causative] form'. The former constitutes a case where the DPL interacts with the pragmatic notion of conventionalized purpose; the latter a case where the DPL interacts with a sort of blocking effect due to lexical gaps. In sum, the Japanese causative construction may not only support the DPL but also examplify the way it interacts with other lexical and pragmatic factors.

4. METALINGUISTIC NEGATION. Another innovation of H's work lies in the pragmatic treatment of the ambiguity of negation, which is attested in the following sentences, to mention a few.

(16) Chris didn't manage to solve the problems.
      a. It was difficult for Chris to solve them.
      b. He solved them easily.

(17) I'm not happy.
      a. I'm sad.
      b. I'm ecstatic.

These facts have led H to establish the dichotomy of descriptive negation (16 and 17 when read as 16a and 17a) and metalinguistic negation (16 and 17 when construed as 16b and 17b). Other instances of the latter include:

(18) a. The king of France is not bald.
b. I didn’t solve three of the problems. I solved all of them.
c. They didn’t have a baby and get married, they got married and had a baby.
d. Chris didn’t manage to solve some problems—he solved them easily.
e. I didn’t manage to trap two mongeese—I manage to trap two mongooses.

In 18a–e, what is negated in the relevant respects are the existential presupposition, the upper-bounded implicature induced by Q-principle, the implicature of order by R-principle, the lexical presupposition of the verb, and the form of inflection, respectively. All of these tokens of negation are non-truth functional in nature.

4.1. Problems: Acquisition and Markedness. As H himself states, one basic problem that remains in the dichotomy in question is: ‘which use is primary and which derivative?’ (443) A few statements on this issue are found, however, in his own passages:

(19) a. the descriptive negation is primary (444); metalinguistic negation is marked psychologically, as well as structurally (391)
b. when negation can be read descriptively, it must be (391)
c. it is only when primary [descriptive, YK] reading becomes untenable that these negations must be retroactively reprocessed as metalinguistic (391): the garden-path effect.

(20) a. the metalinguistic use may be ontogenetically prior (…)(443)
b. the prohibition or rejection/refusal negative of early child language predates and evolves into truth-functional negation (443)

(21) negation as discourse denial [as a speech act, i.e., metalinguistic use, YK] represents the functional core or prototype of negation as logical denial [descriptive use, YK] (cf. 189)

Passages 19b and 20b characterize respectively the notions ‘marked’ in 19a and ‘prior’ in 20a. The basic claim, then, is that metalinguistic negation is marked or derivative in semantic interpretation or processing, is prior from the view point of language acquisition, and is a functional core from a prototype view. Given these results, which I assume to be correct, the basic question is why the correlations 19–21, which are apparently paradoxical, are as they are. They are paradoxical in that (i) the psy-
chologically marked member is acquired prior to the unmarked one, and (ii) the functionally prototypical member is derivative with respect to interpretation.

Though any answer becomes speculative at this point, it may be the case that metalinguistic uses observed in the child language as a means of ‘prohibition or rejection/refusal’ and those employed in the adult language as ‘a predication about the object language’ (431) are partly distinct from each other. Suppose two functional features with binary value: (i) +/- T(ruth-functional) and (ii) +/- G(arden-path effect). The child language negation is then characterized, on factual grounds, as [−T, −G]; the adult’s descriptive negation as [+T, −G]; and the adult’s metalinguistic negation as [−T, +G]. The latter two categories may be seen as developed (independently) from the child language by acquiring a + value in the course of language acquisition. This view makes it possible to avoid an apparent markedness conflict (which arises, if we identify ‘prior’ in 20a with ‘unmarked’) and to capture the functional similarity between the child language negation and the adult’s metalinguistic negation. It also predicts that descriptive negation need not be acquired beforehand for metalinguistic negation to operate. The acquisition data should be taken into consideration to decide this point.

4.2. LEVELS AND REPRESENTATION. Another basic question on metalinguistic negation, as H puts it at the end of Ch. 6, is ‘how [it] is to be represented within a formal theory of natural language discourse’ (444). H only suggests that ‘a metalinguistic operator (...) can be glossed “I object to U”, where U is crucially a linguistic utterance or utterance type rather than an abstract proposition’ (377), or ‘U need not even involve a specifically linguistic utterance’ (563, fn. 14, due to B. Abbott). As to the level of application, he states that ‘metalinguistic negation does not operate on the same rhetorical or grammatical level as the clause in which it occurs (...)’ (397).

9 Horn 1990 argues that even metalinguistic negation in adult language may not be homogeneous. H shows, among others, that not all tokens of metalinguistic negation (i) involve a truth-conditional contradiction, (ii) have the paraphrases of the form ‘it is not true that ...’, and (iii) cooccur with ‘because’ clauses. Specifically, he argues that metalinguistic reading of ‘the king of France is not bald’ involves no truth-conditional contradiction. If this is the case, as H argues, ‘Horn’s dilemma’ pointed out by Burton-Roberts 1989 is resolved. One of the residual problems is to characterize the common and distinct properties across the subtypes.
While metalinguistic negation requires a distinct level of representation, whose formal nature is by no means clear, it cannot be treated in an isolated manner from descriptive negation. The representation in question will necessarily function as an interface of sentence grammar and discourse grammar, thereby making it possible to answer the question of, for instance, why metalinguistic negation does not license nor prohibit occurrences of polarity items. The scope interactions with quantificational expressions may also be relied upon the representation in question. We have no specific suggestions, however, in this respect.

4.3. ECHO NEGATION. Metalinguistic negation is not the sole concept that has been proposed to capture the non-truth conditional aspects of negation. Among proposals prior to Horn 1985, 1989, especially noteworthy is the notion of ECHO NEGATION proposed by Ota 1980. Though the core sets of material that Ota and Horn independently present overlap to some extent, Ota's viewpoint is somewhat different from, and more general than, Horn's conception.

As the term 'echo negation' suggests, Ota pays special attention to its contextual and functional properties. He characterizes echo negation as a type that has a function of rectifying what the speaker conceives as inadequate in another's expressions (cf. 268, 280). As Ota observes, however, the function is also shared by other related constructions:

(22) a. It is not the case that several senators are communists. (Ota 1980: 536)
   b. I don't believe that several senators are communists. (536)
   c. I will force you to marry no one (= I won't force you to marry anyone). (538)
   d. It has been proved that he saw nothing! (539)
   e. It isn't amazing how beautiful this place is. (653)

These sentences (with their intended meanings) sound most natural, if someone has previously uttered those sentences which correspond to the complements in 22a-e and the speaker intends to deny them. These cases, however, differ from ordinary metalinguistic negation in that they do not necessarily involve truth-conditional contradiction.

10 For a survey of other previous works, see Horn (1989: 413ff). H does not refer to Ota 1980, another monumental work in the history of studies on negation, presumably because it is written in Japanese. It is recommended for anyone who are working on the semantics of negation to make constant cross-reference to the two volumes.
Furthermore, as Ota notices, the (parrot-like) rectification of another's utterance may well be accomplished by affirmative sentences. Thus, 23b is typically used in a context where the speaker denies another's utterance 23a.

(23) a. John didn’t go.
    b. John did go. (Ota 1980: 281-2)

The notion of echo negation as characterized above, therefore, may not serve to delimit the class of non-truth conditional negation; but it will uncover the more general discourse property that these tokens of negation share with other related expressions. While the discourse property in question has not been explicitly defined, Ota’s perspective will turn out to be essential to locate properly Horn’s metalinguistic negation within the overall function of discourse.

5. DESCRIPTIVE NEGATION AND THE SUBJECT.

5.1. TWO TYPES OF DESCRIPTIVE NEGATION. Within the inventory of descriptive negation are involved the predicate denial and the preicate term negation. The former is syntactically realized as a negative sentence with the negative in auxiliary position, functions as ‘a mode of predication’ (469), and corresponds semantically to wide-scope, contradictory negation. The predicate term negation, on the other hand, is syntactically instantiated as a VP- or NP-internal constituent negation, which semantically corresponds to narrow-scope, contrary negation. As is mentioned above, a salient feature of the inventory is that it involves no one-place, truth-functional, sentential operator. H characterizes his own position as an ‘extended term logic,’ which is in line with Aristotle’s and Montague’s theories, but not with Fregean logic. The main arguments against the external, sentential operator rely on the analogy to tense operator which he takes not as a sentential operator but as an operator on VPs\(^{11}\) (cf. 472), and the typological fact of ‘the (vertical) absence of sentence-periphery descriptive negation’ (462). It follows that the apparent occurrences of sentence-external negation, including those observed in early child language, is regarded as metalinguistic (cf. 462).

More specifically, two types of descriptive negation are assigned a clus-

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\(^{11}\) An implicit assumption here is that the tense is a sort of operator. This assumption is rejected by Hornstein 1990, who claims that the tense is rather a sort of adverb that can only modify its governing constituents.
ter of syntactic, semantic, and functional properties as follows:\(^{12}\)

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Predicate Denial</th>
<th>Predicate Term Negation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>([_V' N' [V' V not V']]])</td>
<td>([_V' N' [V' V not V']]])</td>
</tr>
<tr>
<td>Semantic</td>
<td>sentential (including the subject)</td>
<td>predicate internal (excluding the subject)</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>predicative (excluding the subject)</td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>a mode of predication</td>
<td>constituent negation</td>
</tr>
<tr>
<td>Meaning</td>
<td>contradictory</td>
<td>contrary</td>
</tr>
<tr>
<td>Tag-question</td>
<td>positive</td>
<td>negative</td>
</tr>
</tbody>
</table>

Though the details of the correspondences are not fully developed, H proposes a framework equipped with a GPSG-style PS rules and ‘the Montague-style semantic translations’ (481–2) to deal with the relation of syntax and function.

5.2. Problems: Predicate Denial and the Subject. Let us now take up and discuss one aspect of the correlations in 24: the scope interactions between the subject position and the predicate denial. As is seen, the predicate denial is claimed to extend its semantic (but not pragmatic) scope over the subject. In this light, consider 25 and 26:

(25) a. Every fish doesn’t sleep. \((H\ 483, 32)\)
    b. All the cookies weren’t eaten. \((H\ 490, 38)\)

(26) a. *Any of the problems weren’t solved. \((L\ anik\ 1972=1976, 26)\)
    b. *Anybody didn’t arrive early. \((\text{Linebarger\ 1980, 80})\)
    c. *Anyone didn’t listen to me. \((\text{Quirk et al.\ 1985, 779})\)

In 25a,b, the partial negation, i.e. NEG-Q reading, may naturally be obtained, which is consonant with the claim that the scope of predicate denial extends over the subject position. H himself considers the possibility that the NEG-Q reading in this case is metalinguistic in nature. However, noting that no special intonation and/or rectification are required to get the reading for all is not lost, he concludes that NEG-Q reading in question ‘must be analyzable as realizing ordinary predicate denial’ (496).

\(^{12}\ V'', N''\ and\ V\ in\ 24\ correnpond\ to\ S,\ the\ subject\ NP\ and\ AUX,\ respectively.\ Cf.\ Horn\ (1989: 481)\)
The case of 26a–c, which H does not take into consideration, shows that negative polarity items (NPIs) such as any and anybody cannot occur in the subject position, which implies that the scope of negation does not extend over the subject. Hence, we are left with a scope paradox.

Relevant here may be H's suggestion that "a subject potentially within the semantic scope of a sentential negation is typically interpreted as thematic and hence outside its pragmatic scope" (514). This notion of pragmatic scope may serve as a solution to the case of 26a–c, but at the same time, it implies that the licensing of NPIs is pragmatic in nature. That this result is not warranted is shown by a cross-linguistic observation that the Japanese counterparts of 26a–c are perfectory grammatical.

\[(27)\]
\[
\begin{align*}
a. & \text{ dono mondai mo tok -are -nakat-ta} \\
& \text{any problems solve passive NEG past} \\
& \text{‘Lit. Any problems weren’t solved.’}
\end{align*}
\]
\[
\begin{align*}
b. & \text{ daremo hayaku ko -nakat-ta} \\
& \text{anybody early arrive NEG past} \\
& \text{‘Lit. Anybody didn’t arrive early.’}
\end{align*}
\]
\[
\begin{align*}
c. & \text{ daremo watasi no iu koto o kik -anakat-ta} \\
& \text{anyone I say Acc listen NEG past} \\
& \text{‘Lit. Anyone didn’t listen to me.’}
\end{align*}
\]

where dono...mo and daremo (read in the accent pattern of LHH) in the subject position function as NPIs. The contrast of 26a–c and 27a–c then shows that the licensing condition of NPIs in the subject position is not entirely pragmatic in nature (at least in unmarked cases).\(^\text{13}\)

A syntactic solution to this problem has been proposed in Kato (1988) which explores some interpretive asymmetries of negation in English and Japanese. It is proposed, assuming the VP-internal hypothesis for the subject in Japanese,\(^\text{14}\) that the two languages differ from each other at the S-structure as in 28 and 29, where NPs are subject NPs:

\[(28)\] Japanese: \[ \text{IP} \left[ V \ [NP \ V] \ \text{NEG} \right] \]
\[(29)\] English: \[ \text{IP} \ [NP \ [\text{NEG} \ [VP] ] ] \]

It is claimed that NPIs are licenced at S-structure and the (sufficient) condition for the relative scope is applied at LF. It is also argued that NEG,

\(^{13}\) For the structure-dependent aspect of the distribution of negative polarity items as well as the role of pragmatic inference in the licensing of them, see Linebarger 1981, 1987, which are based on the work of Baker 1970.

being a sentential operator, must occupy such a position at LF that it could have a sentential complement containing both the subject and the predicate.

Viewed in this light, the scopal difference with regard to the subject in 25, 26, and 27 above could be readily accounted for. In Japanese, the subject is within the negation scope throughout the derivation, so that NPIs freely appear in the position and quantified subjects can be negated. In English, the subject is outside the scope at S-structure, so that NPIs are not licensed in the position, but quantified subjects may be interpreted as negated at LF, where NEG properly contains the subject position.

The above proposal, if correct, shows that the properties of descriptive negation with respect to the subject position should not be attributed to pragmatic notions but to syntactic ones, especially to the levels of syntactic representation.

6. CONCLUSION. H’s work under review, despite several specific problems discussed above, has made an unparalleled contribution to the study of negation, offering us a unified perspective over the diverse and complicated area of negative phenomena. Since negation is a universal category in logic and grammar, H’s approach must have far-reaching consequences to the analyses of languages, however they are typologically characterized. The arguments from Japanese presented above might illustrate this point. Moreover, a number of hypotheses developed in the work will be vital and informative not only to those whose main concern is pragmatics, but also to those who are working in the shpere of formal grammar, for H provides a reliable set of lexical and pragmatic factors that any formal theory must interact with. Here we are given a firm foundation for the future development of the theory of negation.

A few misprints: p. xvi/30th line, semantics → semantic properties; xix/17 to assert p → to assert not-p; xxii/5 Q-NEG → NEG-Q; 89/23 LC → LEM; 114/1 (28b) → (27b); 147/26 (77) → (77a); 176/35 hot → cold; 208/8 (9c) → (9c‘); 214/6 from below (vi) and (vii) → (v) and (vi); 225/12 (p v q) → (p w q); 225/13 (p w q) → (p v q); 253/15 from below A → E; 319/(52b) is coming → is not coming; 348/(95b) koro → koto; 349/(98) kunu → kuru; 361/part of the last paragraph is overlapped and/or deleted; 490/(38‘b) were they → weren’t they.
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