We-marking in Japanese and the syntax and semantics of generic sentences

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Cornell University, 1991

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WA-MARKING IN JAPANESE
AND THE SYNTAX AND SEMANTICS
OF GENERIC SENTENCES

A Dissertation
Presented to the Faculty of the Graduate School
of Cornell University
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

by

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May, 1991
Biographical Data

Christopher John Brockett was born in New Zealand in 1951. He graduated in Japanese and Chinese from Auckland University in 1973, and completed an MA in modern Japanese literature at Waseda University in Japan in 1979. He worked for a number of years as a commercial translator in Japan, before coming to the United States to resume graduate studies in the field of Linguistics.
To Yuri
Acknowledgements

This dissertation could not have been written on my own, and many people have contributed to it on the way. First, there is my committee. Much gratitude is due to my chair, Sally McConnell-Ginet, who, though skeptical, allowed me to explore an obscure hunch, and who encouraged me in the darkest days to believe that this dissertation was writable. I always be grateful to Sally, who despite great pain and discomfort, made the special arrangements to enable my defense to be held at a time when she was recuperating from surgery.

I profited immensely from working with John Whitman, who was an inexhaustable source of ideas, together with much-trenchant criticisms of some of the hairier aspects of my hypothesis. It was he who suggested that I confine the subject matterto the generic uses of wa, at a time when this work was developing into something completely unwieldy and amorphous. It is true to say that without his support and encouragement (to say nothing of his kindly permitting me to use his office during the summer of 1990) this dissertation would not exist.

Jim Gair and I held many long and enjoyable discussions concerning the murky notion of ‘topic’ that led us both to the conclusion that discourse-based approaches to the subject shed little light on the matter. Perhaps the approach presented in this dissertation to one
subclass of so called ‘topics’ in Japanese will eventually lead us a little way out of the darkness. Jim Huang, the fourth member of my committee, was the source of inspiration for the notion that topics, and therefore *wa*-marked constituents, might be quantificational. An expert and lucid exponent of syntax, he played a fundamental role in my conversion to the belief that a syntactic account is possible.

Along the way, I have benefited from conversations with John Bowers, Len Babby, Gennaro Chierchia, Ileana Coromovsky, Fujii Yoshie, Harry Howard, Eleanor H. Jorden, Katagiri Yukiko, Kusumoto Tetsuya, Konomi Emiko, Fred Landman, Maeno Yoshimi, Mazuka Reiko, John Mertz, Bill McClure, Nakajima Takashi, Nakanishi Yasuko, Noda Mari, John Paolliolo, Leslie Porterfield, Shimozaki Minoru, Kazuko Smith, Veneeta Srivastav, Jane Tang, and Yoshida Tomohiko and Yoshida Keiko (*keisyoo ryaku*) and many others. I am especially grateful to the Japanese contingent for their advice and intuitions. As a non-native speaker of Japanese, I have had to rely heavily on their judgments and intuitions; it has been a humbling but educational experience. In particular, I have benefited from discussions with Yanagida Yuko, who has experienced some of the same frustration with the data that I have.

Much appreciation goes to Shari and Michael Milgroom who provided naturally airconditioned quarters and moral support at a crucial stage in the writing of this dissertation, and to Simba, Chui, Jasper II, Oblio, and the hummingbirds, whose antic provided welcome relief from an otherwise dismal process of writing. Their
friendship and hospitality in the final days before my defence will always be remembered with gratitude, along with those rafting trips in the spring of 1989 and 1990.

I am especially grateful to Professor Robert J. Smith, in whose name a fellowship is funded that kept me sustained in my final year. He stands as a scholar and a gentleman, and a model to be emulated.

And last, but by no means least, there is my wife, Yuri, and my sons, Michael and Stephen, who endured all this.
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<tbody>
<tr>
<td>ACC</td>
<td>Accusative case</td>
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<tr>
<td>CAUS</td>
<td>Causative</td>
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<td>CMP</td>
<td>Complementizer</td>
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<td>COM</td>
<td>Comitative particle</td>
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<td>COP</td>
<td>Copula</td>
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<td>CW</td>
<td>Contrastive <em>wa</em></td>
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<td>DAT</td>
<td>Dative case</td>
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<td>DES</td>
<td>Desiderative</td>
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<td>GER</td>
<td>Gerund</td>
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<td>GRC</td>
<td>Generic-Related Constituent</td>
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<td>IMP</td>
<td>Imperfective aspect</td>
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<tr>
<td>INS</td>
<td>Instrumental particle</td>
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<td>LOC</td>
<td>Locative particle</td>
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<tr>
<td>NEG</td>
<td>Negative morpheme</td>
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<tr>
<td>NOM</td>
<td>Nominative case</td>
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<tr>
<td>PRF</td>
<td>Perfective aspect</td>
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<tr>
<td>PSS</td>
<td>Passive</td>
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<tr>
<td>Q</td>
<td>Interrogative complementizer</td>
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<tr>
<td>TP</td>
<td>'Topic' particle (i.e., <em>wa</em>)</td>
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<td>TW</td>
<td>Thematic <em>Wa</em></td>
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<td>WMC</td>
<td>Wa-Marked Category</td>
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Chapter One

An Overview of the Hypothesis

To begin, let us consider in very general and intuitive terms, what it means for a sentence to be generic. The following are generic sentences of Japanese.

(1) Kuzira-wa in'-o funda uta-o utau.
Whale-TP rhyme-ACC tread-PRF song-ACC sing-IMP
'Whales sing songs that rhyme.'

(2) Sakura-no hana-wa sigatu-no hazime-ni sakimasu
cherry-GEN flower-TP April-DAT start-DAT flower-IMP
'The cherry blossoms at the beginning of April.'
(Matsushita, 1928: 713)

These examples illustrate several stereotypical features of generic sentences. The sentences are 'lawlike' (Dahl (1975)) in that they state some inherent, rather than accidental, property, or as in the case of (2), a natural regularity. Moreover, both sentences seem to attribute this property to the members of a class of individuals without resorting to overt quantification. In addition, though we
interpret the sentences as making a universal claim, we do not insist on the same rigorous truth conditions that would obtain had overt universal quantification been present. Instead, we apply a looser set of criteria that is modulated by pragmatic considerations of relevance. In the case of (1), it is enough that there be some sufficiently large population of whales that is disposed to rhyming: we do not 'count' the presumably numerous inept individuals that cannot extempore rhyme their songs, or whales that belong to non-rhyming species. Likewise in (2), we readily discount Kubota-san's 150-year-old, perennially late-blooming specimen, just as we do trees located outside of the relevant geographical area of Tokyo. This broad tolerance of exceptions, widely observed in generic sentences in English, constitutes a major challenge for a formal semantic treatment, and in the 1970s motivated some scholars (e.g., Nunberg and Pan (1975), Carlson (1977)) to reject the notion, found in some treatments (e.g., Lawler (1973)), that generic sentences contain an implicit universal operator.

A second characteristic of generic sentences is that they are not temporally anchored. (In Japanese this is typically indicated by imperfective verb morphology.) Generic sentences are 'timeless,' in the sense that they hold independently of whatever is happening at the time of utterance. (1) may be true, even if no whales happen to be singing just then. It suffices apparently that whales should sing in rhyme at least some of the time. In the same vein, a Tokyo resident
may utter (2) truly in midwinter, when the buds are no more than an idea on the part of the tree.

Thirdly, generic sentences may ascribe properties to non-existent entities. So, for example (2) implies that the magnificent cherry trees our Setagaya landlord cut down in 1977 out of frustration at the depredations of gypsy moth (an exotic import) would bloom in April had they remained standing. It also implies that if she had planted new trees three years ago (which she didn't) then they, too, would bloom in April. That is, as Dahl (1975) observes, generics never simply generalize over entities that happen to constitute the extension of some term: (2) is a generalization about possible cherry trees, including past and future actual trees, as well as those that remain merely possible. In other words, generic sentences have a modal dimension: they are robustly intensional.

Not all the related sentence types that often included under the rubric of 'generic' necessarily exhibit this last property. Habitual

---

1 In other related sentence types include definitional sentences expressing linguistic necessity as in (i) and mathematical necessity as in (ii). In these, the intensionality is apparent.

(i) Tyongaa to iu no-wa, mikon-no otoko da batchelor CMP say CMP-TP unmarried-GEN man COP-IMP
   'A batchelor is an unmarried man.'

(ii) Ni tasu ni-wa yon two add two-TP four
    'Two plus two is four.'

For the most part, these related sentence types will be ignored in this dissertation.
sentences, for example, report the iterated action or disposition of some extensional individual.

(3)  Masuda-san-wa kuzi-goro kitaku-suru\textsuperscript{2}
PN-TP  9 o'clock-about return-home-IMP

'Masuda-san heads home at about nine.'

Nevertheless the other observations made with respect to generic sentences continue to hold. (3) is true if Masuda-san does occasionally work late, or sometimes goes home early. The sentence is true even if uttered on a Sunday, when he doesn't go to work, or on one of his infrequent vacations.

Although the above examples suffice to give a rudimentary notion of the core characteristics of generic sentences, the characteristics identified are wholly semantic in nature. It is a historical accident, however, that the syntactic dimensions of generic sentences have largely escaped the attention of linguists: English, the language in which genericity has been most extensively studied, has so far yielded little by the way of direct evidence for a syntactic model. In

\textsuperscript{2} Sentences of Japanese may under some circumstances be ambiguous between generic and habitual construals. (i), for example, has a habitual reading when \textit{inu} refers to a specific dog whose extensional identity is known to the speaker; otherwise the sentence is construed as generic and \textit{inu} is construed intensionally.

(i)  Inu-wa neko-o okkakeru
dog-TP cat-ACC chase-IMP

(a)  'A dog chases cats.'
(b)  'The dog chases cats.'
Japanese, on the other hand, genericity has a palpable morphosyntactic reflex that has no overt counterpart in English and can be observed in the above examples: the subjects of these sentences are all marked by the 'topic' particle *wa*.

In order to slash through the Gordian knot of terminological confusion surrounding the use of the term 'topic' and to abstract away from the fact that *wa* is employed in conjunction with a range of phenomena including the Japanese counterparts of Left Dislocations and Topicalizations, I will refer to all constituents marked by the particle *wa* as WA-MARKED CATEGORIES or WMCs. Common sense dictates that the fact of *wa*-marking per se is unsurprising, for the phenomenon is so general a feature of matrix sentences of Japanese that it is those sentences that do not include a WMC that call for special explanation. But the persistent occurrence of WMCs in conjunction with generic sentences has fostered the widespread assumption that one of the primary functions of *wa* is to mark an NP as generic. This notion, which dates back to at least Matsushita (1928), underpins much of the discussion of *wa*-marking in Mikami (1963) and Kuroda (1965, 1972), both of whom anticipate aspects of the analysis to be presented later in this work.

The standard account of the relationship between WMCs and generic sentences is found in the classic analysis of Kuno (1973), who distinguished between what he termed 'contrastive' and 'thematic' WMCs, and attempted to account for the use of thematic *wa* in generic sentences by postulating that a thematic *wa*-marked NP is
'anaphoric,' i.e., it must refer to some entity that is available in a permanent discourse registry. Kuno’s view thus concurs with the most familiar semantic account developed for English generics, formally articulated within the model-theoretic framework of Montague grammar by Carlson (1977, 1980), that generic sentences predicate a property of kinds, referred to by expressions that are essentially like proper names (e.g., Carlson argues that English bare plurals are names of kinds).

The intuition that WMCs play a fundamental role in the interpretation of generic sentences in Japanese is, I believe, essentially correct, although I do not take the position that the particle *wa* is, of itself, a marker of genericity on NPs. The significance of WMCs for a syntactic account of generic sentences is illustrated by the contrast between (4) and its Japanese counterparts.

(4) Typhoons occur **in this part of the Pacific.**

(i) Typhoons generally occur in this part of the Pacific.

(ii) In this part of the Pacific, (in general) typhoons occur.

(5) Taiheiyoo-no kono hen-de hassei suru

Typhoon-TP Pacific Ocean-GEN this part-LOC arise-IMP

'Typhoons occur in this part of the Pacific.' [= (4)i]

(6) Taiheiyoo-no kono hen-de wa, taihuu-ga

Pacific Ocean-GEN this part-LOC-TP typhoon-NOM

hassei su-ru

arise-IMP

'In this part of the Pacific, (in general) typhoons occur.' [= (4)ii]
These and related examples are considered in greater detail in Chapter Two. Sentence (4), due originally to Milsark (1974), is observed by Carlson (1989) to counterexemplify his 1977 predication-of-kinds hypothesis, which takes a subject NP and predicates a property of it. The 1977 model incorrectly predicts that (4) only allows a generic construal for the indefinite subject as in (i), yet fails to predict the much more plausible interpretation (ii) in which the subject is construed existentially. Moreover, on the favored (ii) reading of (4), the relationship between the underlined PP and the rest of the sentence cannot be one of predication. By way of a solution, Carlson suggests that there is some yet-to-be specified relation that holds between an intensional 'related constituent' and the remainder of the sentence.

It will be observed, however, that (4) has two counterparts in Japanese, (5) and (6), in which the constituents corresponding to the GENERIC RELATED CONSTITUENTS (GRCs) on the different construals are WMCs and in sentence-initial position at S-Structure. What is more, the Japanese sentences unambiguously select only one of the possible interpretations. In both Japanese and English, it seems that the theme of the sentence is also the GRC. The S-Structure position of WMCs in Japanese, far from being purely stylistic, is semantically significant. These constituent order facts may be interpreted as indicating that the semantic interpretation of the sentences may involve scopal movement that is represented at Logical Form in English, and at S-Structure in Japanese. Accordingly, although it
touches on matters that pertain to the modelling of discourse, the account that I propose in this dissertation will be a syntactic one.

For a syntactic model, I will generally adhere to the Principles and Parameters model of syntax as set forth in the work of Chomsky (1981, 1982, 1986a,b), in which the grammar is represented as having four components: Phonetic Form, D-Structure, S-Structure and Logical Form. Of these four components, D-Structure, which relates to the configurational assignment of semantic roles among arguments, and Phonetic Form will have only marginal bearing on our discussions. This dissertation will be primarily concerned with the relationship between S-Structure, at which are represented surface or surface-like syntactic relations, and Logical Form, at which are represented scopal relations among operators and quantifiers as a prelude to further semantic interpretation. (The version of Logical Form that I will employ differs somewhat from standard generative syntactic models in that it contains operators that have no direct S-Structure realizations; see the discussion below and in Chapter Three.)

I will further assume that the syntactic structure of Japanese conforms in broad outlines of the accounts of Saito (1985) and Hoji (1985) and Miyagawa (1989), who assign Japanese a configurational structure with VP and S nodes and analyze subject NPs as being daughters of S. I will diverge from these accounts in one important respect by adopting Chomsky's (1986a) proposal that languages have non-lexical (functional) projections and assuming that Japanese sen-
sentences have the projections IP (Inflectional Phrase) and CP (Complementizer Phrase), the C° head being the head of the matrix clause in Japanese. The status of non-lexical projections in Japanese is highly controversial, and some arguments for their existence will be given in Chapter Five.

In this dissertation, I will seek a solution to the problems posed by examples (4) – (6) in the body of quantificational treatments of generic sentences that has emerged out of proposals by Lewis (1975) and Heim (1982) for the quantificational analysis of conditional clauses. In these accounts, whose principal proponents have been Gerstner and Krifka (1987), Krifka (1987), Krifka (1988), Diesing (1988) and Kratzer (1989), English generic sentences containing indefinite singular or bare plural subjects are analyzed as tripartite quantificational structures at Logical Form comprising a generic operator, a restrictive term, and a nuclear scope, as illustrated in (7) below, adapted from Heim (1982).

(7)
Following Heim (1982), English indefinite and bare plural NPs are usually treated in this model as having no inherent quantificational force, i.e., as not being existentially quantified, but as introducing new variables into the semantic representation. The nuclear scope is closed by a structurally introduced existential operator that binds any free variables therein. The generic operator is typically non-overt, but may be an adverb of quantification after the fashion of Lewis (1976), and is unselective, binding any free variables within the restriction. This operator is part of the modal system of language, and may possibly be a necessity operator (as Heim (1982) proposes). For our purposes, it suffices that Gen have the effect of implicit universal quantification, and may be contextually overridden to allow for generic sentences' well-attested tolerance of exceptions.

It will be noted that the structure in (7), although construed as quantificational, does not contain any single constituent that can be identified as a quantifier. Rather, the structure is one in which the operator Gen can be viewed as defining a relation between the GRC (Restrictive Term) and the Nuclear Scope. Partee (1989), citing Van Benthem's (1986) proposal that regular determiners (e.g., the, every, some) might be likewise analysed as denoting a relation between NP and VP meanings, suggests that all forms of quantification might be generalized as tripartite structures under the schema in (8). If so, we might expect both deverbal quantification and determiner quantification to have similar consequences at Logical Form and to exhibit similar syntactic effects.
These issues are addressed in Chapter Three, where it is shown that the quantificational model is readily extended to account for a number of properties of *wa*-marked GRCs in Japanese under a proposal by Krifka (1988) that GRCs may be analyzed as themes. In particular, since quantification is not strictly a property of NPs in this model, it is possible to explain some of the properties of thematic *wa*-marking of temporal clauses and purposive-like *no ni* clauses, as well as of locative PPs in sentence types that are problematic for Carlson (1989). Moreover, Kuno’s (1973 a,b) assumption that thematic *wa*-marking is inherently bound to notions of ‘anaphoricity’ (definiteness) can be discarded, in consequence of which thematic WMCs may be treated as bare variables that that can be quantified over by Gen.

It will be my contention that a matrix Japanese generic sentence like (1), repeated below, has the S-Structure representation shown in (9), where the subject WMC has undergone string-vacuous movement out of IP and into the Specifier position of CP. This movement is visible at LF, shown in (10), in which the NP *kuzira* ‘whale’ in Spec CP restricts an invisible generic operator Gen.
(1) Kuzira-wa in'-o funda uta-o utau.
Whale-TP rhyme-ACC tread-PRF song-ACC sing-IMP

'Whales sing songs that rhyme.'

(9)

(10) Gen [CP [kuzira] Ǝ [Ipt in'-o hunda uta-o utau]]

The hypothesis that generic sentences are quantificational entails some very specific predictions. If they are indeed quantificational, and moreover involve movement of a constituent to restrict Gen, it is expected that GRCs will exhibit behavior that is standardly considered to constitute syntactic evidence for quantification, namely variable binding and crossover effects. These effects are confirmed in the course of this investigation. It will be seen that WMCs in generic sentences may bind the reflexive zibun on a bound variable reading, as in (11). Variable binding of zibun, and more marginally kare 'he,' is discussed in Chapter Three.
(11) Densyobatoji-wa, zibunji-no koya-ni modoru
   Homing-pigeon-TP self-GEN coop-DAT return-IMP
   'A homing pigeon returns to its own coop.'

Weak Cross Over effects, observed in both Japanese and English generic sentences, are illustrated in the ungrammaticality of examples like (12) and offer further evidence for the hypothesis that generic sentences involve quantificational movement at Logical Form.

(12) *Their mothers love children.

Movement of the GRC at logical form is evidently matched by obligatory movement at surface structure in Japanese. In Chapter Five, I present arguments that thematic WMCs in Japanese may be moved into the Specifier of CP position, which in English is canonically a position that is associated with 'operators.' The Gen operator, like the Wh operator, must have local clausal scope, and is presumably to be licensed by the C0 head of its clause. Conceivably, only operators that have obligatory clausal scope may be so licensed and thereby trigger S-Structure movement, unlike the 'logical' quantifiers, whose scope is variant and is represented only at Logical Form. I will further hypothesize that the locus of movement is parameterized in Universal Grammar so that 'generic raising' takes place at S-Structure in Japanese matrix sentences and strictly at

3 I owe this suggestion to John Whitman (personal communication).
Logical Form at LF in English (and Japanese embedded clauses)—as opposed to Wh-movement, which is parameterized in the opposite fashion in the two languages.

The principles and parameters model of generative grammar developed by Chomsky and others in the late 1970s and early 1980s, ushered in major advances in the understanding of a wide range of cross-linguistic phenomena. One key component, first explored in May (1977), has been the hypothesis that a language has an abstract interpretative component called Logical Form to which quantifier scopes are mapped from S-Structure in a fashion that is constrained by principles of Universal Grammar. The utility of positing such an abstract level of representation is pointed up most dramatically by Huang’s (1982) demonstration that Chinese Wh-phrases undergo covert movement at Logical Form, analogous to that of overt Wh-movement at S-Structure in English.

By parameterizing scopal operations such as Wh-movement in terms of whether they take place at S-Structure or at Logical Form, it has been possible to capture significant cross-linguistic generalizations about the nature of Wh-movement. The extension of this parametric behavior to generic sentences further demonstrates the validity of the Logical Form as a level of representation in universal grammar.

GRCs are ‘themes’ of their sentences. Thus the quantificational model allows us engage in some speculation concerning the nature of some discourse-related phenomena.
Thematic *wa*-marking in Japanese must be regarded as both a syntactic and a discourse phenomenon, and is by no means limited to generic sentences; indeed, most discussion of WMCs in Japanese has centered on non-generic-related definite and referential NPs, whose apparent semantic inertness obscures any attempt at analysis in terms of LF Structure. The overt quantificational properties of generic sentences suggest that the above analysis may be extended to other instances of *wa*-marking.

There have been persistent proposals over the years that a variety of discourse-related phenomena in different languages, ranging from the particle *wa* (Kuroda, 1965) to themes (Dahl, 1969) and topics (Haiman, 1978) are semantically like the antecedents of conditionals. Although these suggestions have garnered little support in the past, the quantificational analysis of generic sentences essentially assimilates GRCs to conditional antecedents by treating both as restrictions on a modal operator, thus opening up the possibility that many discourse phenomena, including base-generated Left Dislocations and Topicalizations, might be accounted for in similar terms of scopal relations among constituents and operators at Logical Form. Partee (1989) explicitly proposes that the tripartite structure shown in (8) might be generalized to include such phenomena within its purview. While the task of integrating these phenomena into the present model is beyond the scope of this dissertation, the quantificational nature of generic sentences, and the role of GRC (= theme) as restrictive term lends itself to the hypothesis that a
notion of theme, as developed by the Prague school linguists (e.g., Firbas, 1946) may be definable cross-linguistically as the Restrictive Term of a widest scope clausal operator at Logical Form. The precise nature of such an operator, or whether we can even, for that matter, assume a unique operator for themes, remain matters for speculation.
Chapter Two

Some Problems of Generic Sentences and Wa-Marking

One widely accepted view of generic sentences is that they predicate properties of NPs that refer to kinds of individuals. In Japanese linguistics, this view is chiefly associated with Kuno’s (1972, 1973 a,b) classic account of the ‘topic’ particle wa, in which wa-marked subjects of generic sentences are treated as ‘anaphoric,’ i.e., definite,¹ NPs that refer to ‘classes and not to some arbitrary members of the classes’ (1973 a: 41). In the semantic literature on English, the predication of kinds account is best represented by Carlson’s (1977) model-theoretic analysis of English bare plural NPs as kind-referring terms. The fact that these parallel treatments, developed independently for the two languages, converge in this fashion conveys on them a veneer of plausibility for a universal theory account of generic sentences. Yet the predication of kinds account has recently

¹ Kuno idiosyncratically employs the term ‘anaphoric’ throughout his account, reserving ‘definite’ for English NPs bearing the determiner the. For generality, I will use the term ‘definite’ loosely in the traditional sense to refer to any NP whose reference is specific and identifiable at the time of utterance.
generic sentences. Yet the predication of kinds account has recently been shown to be seriously flawed as a model of generic sentences: Carlson (1989) discusses difficulties that compel him to discard the model as untenable and to propose that genericity arises out of an (unspecified) relation between a GENERIC-RELATED CONSTITUENT (GRC) and the remainder of the sentence. In first half of this chapter, I will adduce Japanese data to show that GRCs are obligatorily WA-MARKED CATEGORIES (WMCs) in matrix contexts and that the generic interpretation of sentences is intimately and inextricably bound to discourse phenomena traditionally subsumed under such notions as ‘topic’ and ‘theme.’ Rather than pursue a discourse solution, however, it is suggested that the evidence points to a syntactic treatment, with movement of the GRC at S-Structure in Japanese and LF in English in order to obtain the correct scopal interpretation. In the second half, I will indicate that Kuno’s discourse-functional account of wa-marking is inadequate to the task of explaining the use of wa in certain types of generic sentences.

2.1 Some Problems in the Theory of Generic Sentences

The significance of Japanese wa-marking for a theory of generic sentences can be strikingly illustrated if we begin by considering at some problems for the predicational model of generic sentences in English found in Carlson (1977). Before addressing these problems, some account should first given of this model.
2.1.1 Predication of Kinds (Carlson, 1977)

Carlson (1977) is principally concerned with the proper treatment of English bare plural NPs, which may be construed generically in some contexts, as in (1) and existentially in others contexts, such as in (2).

(1) Rats leave a sinking ship
(2) Rats are leaving the sinking ship.

Carlson rejects a possible analysis in which these NPs contain an invisible quantifier. In addition to the obvious problem of identifying a single quantifier that might account for the two interpretations of the bare plural, he cites distributional and other evidence, including apparent scopal inertness with respect to operators such as negation and in belief contexts. This last is illustrated by the contrast between (3) below and (5). In (3) the universally quantified NP may be interpreted as having been raised to have scope outside of its clause, as demonstrated by the availability of the two construals indicated in (4) (a) and (b).

(3) Jill believes all professors are insane. (1977: 86)

(4) (a) Jill believes (all {x : x professor} (x is insane))
(b) all {x : x professor} (Jill believes (x is insane))

The bare plural NP, on the other hand, allows only an interpretation where the NP is construed as inside the embedded clause. (In (6), G represents a hypothetical invisible generic quantifier on the NP.)
(5)  Jill believes professors are insane.

(6)  (a)  Jill believes (G {x : x professor} (x is insane)
        (b)  *G {x : x professor} (Jill believes (x is insane))

Facts of this nature lead Carlson to assimilate bare plural NPs to proper names, treating them as terms, which, he proposes, denote KINDS. Carlson develops a taxonomy of entity types, containing two basic types: STAGES and INDIVIDUALS. Briefly, STAGES (a term taken over from Quine) refer to entities that are spatially and temporally bounded at a given occasion and location, while INDIVIDUALS consist of a bundle of properties that are not temporally bounded. Bill ran yesterday is a stage of the individual Bill. Individuals are represented by two further subtypes: OBJECTS (or regular individuals), which are spatially bounded, but tie together different stages (Bill runs regularly, i.e., on different occasions, but not be in different places simultaneously), and KINDS, whose salient characteristic is that they are neither spatially nor temporally bounded. Kinds may therefore exist in many places at the same time, as (7) indicates:

(7) Whales are widespread

A core assumption of Carlson's model is that generic sentences have a subject-predicate structure, with the predicate type obligatorily matching the entity type of the subject. An entity that is a stage can only be the subject of a stage-level predicate, while a kind-denoting term can only be the subject of a kind-level predicate. Although some generic predicates are inherently kind-level (e.g., be
widespread in (7), others are regarded in this model as denoting properties of objects, from which there is an inductive generalization to kinds. This operation is performed by means of a non-quantificational generic operator $G$, which has the effect of 'raising' an object-level predicate to kind-level, so that it may be predicated of a kind-level term. Generic sentences such as (8) are thus assigned a representation along the following lines, where $b$ is a term referring to the kind 'birds'.

---

2 This treatment is motivated by reflexive generic sentences such as (i), which allow an interpretation where individual goldfish like themselves.

(i) Goldfish like themselves. (1977: 262ff)

In (ii), $g$ is a constant representing the kind goldfish, and the superscripted variable $x^0$ is an object level variable.

(ii) $G(x^0 [x \text{ likes } x] (g)$

This sentence is construed as meaning that it is a general property of the kind goldfish that individual object goldfish like themselves. To account for reflexives in such constructions, Carlson must also posit a modified version of Partee's (1976) rule of Derived Verb-Phrase formation. The effect of this rule, which Partee presents as a means of treating embedded infinitival clauses and conjoined VPs, is to delete the 'subject' in the derivational tree by means of an abstraction operator to create a property, which is then predicated of a term or constant by the operator.

3 Carlson further extends this analysis to indefinite singular NPs, which show similar interpretative ambiguities. When a generic property is predicated of a singular indefinite NP as in (i) the NP receives a generic construal; when the predicate is non-generic, as in (ii), it receives an existential construal.

(i) A cat chases mice.

(ii) A cat ran across my lawn.

In order to deal with such indefinite singular NPs, which cannot occur in inherently kind-level predicates (*A dog is common), Carlson (1977) must posit a special translation. Thus, a dog has the following translation, just in case it is employed in generic sentences.
(8) Birds fly \( G \) (fly) (b)

2.1.2 Problems for the Predicational Model (Carlson 1989)

The model outlined in §2.1.2 above crucially assumes that generic sentences have a subject-predicate structure in which both subject and predicate are typed, and that a generic property is predicated of a kind-denoting subject NP. In a recent paper, however, Carlson (1989) demonstrates that his predicational account encounters severe difficulties in a variety of generic sentence types in which constituents other than the subject appear to play a central role in the generic interpretation of the sentence. Below, I will consider two types, sentences containing locatives and definite direct objects. It will shortly become apparent that \( wa \)-marking has a clearcut role in the interpretation of comparable Japanese sentences.

2.1.2.1 Locatives

The first difficulty is represented by examples such as (9), first observed by Milsark (1974), in which there is a locative expression and a bare plural subject:

\[
\lambda P \left[ \exists P(d) \land \exists S \left[ P = G'(S) \right] \right]
\]

This says that there must be some object-level predicate \( S \) that can be generalized by the operator \( G' \) to create a generic sentence. This stipulation is clearly ad hoc and in effect denies the possibility of a compositional treatment of indefinite singular NPs.
Hurricanes arise in this part of the Pacific.

Carlson’s 1977 model, in which generic sentences predicate a property of a kind-denoting subject NP, predicts only one interpretation for (9): that in which the bare plural subject hurricanes is construed generically as in (10), an interpretation that he observes is relatively implausible. Meanwhile the pragmatically more likely reading in which hurricanes is construed existentially as in (11), completely lacks a representation in the predicational model:

\[
\text{(10) } G (\text{arise in this part of the Pacific}) \text{ (hurricanes)}
\]

\[
\text{(11) } \text{In this part of the Pacific, in general, hurricanes arise.}
\]

As Carlson (1989) observes, (9) cannot be interpreted as predicating a property of the PP, which neither is an individual in any recognizable sense of the term, nor seems to take part in any identifiable predicational relationship with the rest of the sentence. Likewise, the predicational model fails to predict the more felicitous interpretations in kindred generic sentences such as (12) – (13), both of which contain a locative element and a bare plural subject:

\[
\text{(12) Flowers grow behind the old shed.}
\]

\[
\text{(13) Unfriendly tribesmen dwell just over those hills.}
\]

---

4 I do not find the sentence particularly problematic on this reading, especially in view of the fact that violent tropical storms have different names in different parts of the Pacific. Nevertheless, the point is taken: the interpretation in which the bare plural subject is construed as GRC is significantly dispreferred.
2.1.2.2 Direct Objects

A similar problem is posed by generic sentences that contain definite objects, again in the presence of an indefinite subject:

(14) A computer computes the daily weather forecast.
(15) Robots assemble the new cars.

As with the locative sentences, the preferred interpretation of (14) and (15) is one in which the indefinite subject is construed existentially. Yet again, the predicational model assigns to (14) only the pragmatically unlikely interpretation in (16), and completely fails to assign the pragmatically more viable construal paraphrased in (17), which has no representation in the 1977 model.

(16) G (computes the daily weather forecast) (computer)
(17) The daily weather forecast is generally computed by a computer.

In view of the difficulties presented by these and other sentence types discussed in his (1989) paper, Carlson explicitly abandons the position that generic sentences predicate a VP of a subject NP. Instead, he proposes that they should be viewed as requiring two elements, a non-generic predicate—a sentence or a VP—and an intensional generic RELATED CONSTITUENT (which I will abbreviate as GRC) that is needed to complete the generic interpretation. The GRC is typically the subject, which accounts for standard generic sentences, but as the above examples indicate, PPs and direct objects may
also function as GRC. Carlson does not elaborate, however, on the nature of that relation, leaving it an open issue. It will be the task of this dissertation to show that Japanese wa-marking provides crucial evidence that can enable us to spell out the nature of this relation.

2.1.3 Wa-Marking of Generic-Related Constituents

2.1.3.1 Locatives and Direct Objects

Let us now turn to the Japanese data. The first observation that must be made is that sentences of Japanese corresponding to those cited in §2.1.2 are unambiguous. For each interpretation assigned to the problematic ambiguous sentences, the GRC is identified by marking it with the ‘topic’ particle wa and by preposing it. Each English sentence thus has at least two Japanese counterparts representing one of the potential meanings of the sentence. Consider the case of the locative sentences. In (18) below, the nominative ga-marked subject has an existential construal, while the PP is the GRC.5

(18) Taiheiyoo-no kono hen-de wa, taihuu-ga hassei su-ru
Pacific Ocean-GEN this part-LOC-TP typhoon-NOM occur-IMP

‘In this part of the Pacific, (in general) typhoons occur.’

---

5 Unless the nominative subject receives an exhaustive listing focus, in which case a generic reading for that NP is also possible. An account of nominative subjects of generic sentences will eventually require a full accounting of focus in Japanese.
Wa-marking and preposing the PP results in an interpretation that corresponds to the preferred reading in English not predicted in Carlson's 1977 model. When the subject is wa-marked, on the other hand, this becomes the GRC, in which case the sentence exhibits only the 'less plausible' reading in which the subject is construed non-existentially.

(19) Taihuu-wa, Taiheiyoo-no kono hen-de hassei suru.  
Typhoon-TP Pacific Ocean-GEN this part-LOC arise-IMP  
'Typhoons occur in this part of the Pacific.'

This pattern is not limited to sentences containing quasi-presentational verbs such as hassei suru 'arise,' but can be observed in conjunction with a wide range of predicates involving a locative PP. In (20), the nominative subject receives only an existential construal.

(20) Tai-oki-de-wa, kaizoku-ga ima-de-mo  
Thailand-offshore-LOC-TP pirate-NOM now-cop-ger-also  
yotto-ya gyosen-o eziki-ni suru.  
yacht-and fishingboat-ACC prey-COP do-IMP  
'Off the coast of Thailand, pirates even now prey on yachts and fishing boats.'

(20) contrasts with (21), where the subject is wa-marked and identified as GRC.

(21) Kaizoku-wa Tai-oki-de yotto-ya  
Pirate-TP Thailand-offshore-LOC yacht-and
gyosen-o eziki-ni suru.
fishingboat-ACC prey-COP do-IMP

'Pirates prey on yachts and fishingboats and the like off the coast of Thailand.'

(21) is pragmatically odd or implausible as a generic sentence, and seems best construed on the irrelevant reading where the subject WMC refers to some specific entity of established reference. Nonetheless, the sentence is quite unambiguous on the reading intended. In short, the WMC may be equated with the GRC.

Similar facts hold for transitive sentences, where wa-marking and preposing in Japanese also disambiguate sentences that are ambiguous in English. Below, (22) matches the preferred reading of the English example (14) in §2.1.2.2, and (23) that of English (15).6

(22) Mainiti-no tenki yohoo-wa, konpyuuta-ga t yosoku-suru
Daily-GEN weather forecast-TP computer-NOM predicts-IMP

'A computer predicts the daily weather forecast.'

(23) Atarasii zidoosya-wa, robotto-ga t kumitateru
New car-TP robot-NOM assemble-IMP

'Robots assemble the new cars.'

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6 Certain problems are encountered in translating these sentences, since inanimates are not considered inappropriate agents of transitive verbs in Japanese. Fortunately robots and computers pass muster as quasi-animates for natural language purposes.
Wa-marking the subject triggers the marginal reading in which the subject is the GRC.⁷

(24) Konpyuuta-wa mainiti-no tenki-o uti-dasu
Computer-TP daily-GEN weather print-out-IMP

(i) ‘Computers print out daily weather forecasts.’
(ii) ‘The computer prints out the daily weather forecast.’

(25) Robotto-wa atarasii zidoosya-o kumi-tateru
robot-TP new auto-ACC assemble-build-IMP

(i) ‘Robots assemble the new cars.’
(ii) ‘The robots assemble the new cars.’

How may we interpret these data? For one thing, they demonstrate that wa-marking plays a fundamental role in picking out the GRC of Japanese generic sentences. This is not immediately obvious in ‘regular’ generic sentences where the subject is the GRC. Although it is common to observe that subjects of matrix generic sentences in Japanese typically bear the particle wa rather than nominative ga, this is by no means exclusively the case: alongside (26), where the subject is kuzira ‘whale’ is wa-marked, we may also observe (27) with nominative ga, and non-matrix (28), where ga-marking is obligatory.

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⁷ The Japanese sentences are relatively well-formed, apparently owing to interference from an irrelevant preferred reading in which the WMC refers to a definite (definable) set of computers.
(26) Kuzira-wa in-o hunda uta-o utau
Whale-TP rhyme-ACC tread-PRF song-ACC sing

‘Whales sing songs that rhyme.’

(27) Kuzira-ga in-o hunda uta-o utau
Whale-NOM rhyme-ACC tread-PRF song-ACC sing

‘It is whales that sing songs that rhyme.’

(28) Kuzira-ga in-o hunda uta-o utaeba
Whale-NOM rhyme-ACC tread-PRF song-ACC sing-COND

‘if whales sing songs that rhyme.’

The fact that the distinction between *wa* and *ga* is neutralized in embedded contexts is well established, and need not concern us here. However, failure to *wa*-mark the GRC in a matrix context results in an ambiguous and marginal sentence. A sentence like (29), where no GRC is *wa*-marked, is ill-formed, except possibly as a rather stilted ‘classroom’ response to a question along the lines of *What is it that occurs in this part of the Pacific?* in which the subject bears a constituent focus. (See §2.1.3.2 below for discussion of a second interpretation of this sentence).

(29) Taihuu-ga Taiheiyoo-no kono hen-de hassei.suru.
Typhoon-NOM Pacific -GEN this part-LOC arise-IMP

‘It is typhoons that occur in this part of the Pacific.’

We may conclude from the interpretation of (29), that the WMC in generic sentences like (26) is the ‘unmarked’ case, in the sense that no special status is assigned to this clause as a generic sentence, while nominative *ga* in the matrix sentence (27) results in a strong
focused-constituent construal for the ga-marked NP, approximated by the cleft sentence in the English gloss. The use of wa in (26) must be presumed to be intrinsic to the generic interpretation of the sentence.

2.1.3.2 Discourse Theme and GRC

Obligatory wa-marking of the GRC when not the target of constituent focus suggests that the generic interpretation of sentences is inherently bound up with discourse phenomena traditionally subsumed under such rubrics as 'topic' and 'theme.' The role of discourse notions is observed by Carlson (1989), who remarks on examples like (30), where the subject is construed existentially, but which contains no overt GRC.


It appears that the discourse context provides an implicit GRC in relation to which (30) is interpreted. This hypothesis is borne out in Japanese, where the subject NP of similar sentences is obligatorily marked with nominative ga and must be construed existentially.

(31) (Topic: What happens when mating season comes round.)

Kuzira-ga in-o hunda uta-o utau
Whale-NOM rhyme-ACC tread-PRF song-ACC sing

'Whales that sing songs that rhyme.'
(32) (Topic: What happens when the news broadcast is over.)

Konpyuuta-ga mainiti-no tenki-o uti-dasu
Computer-NOMP daily-GEN weather print-out-IMP

'A computer prints out the daily weather forecast.'

The correlation of GRC and WMC is confirmed in these examples in the fact that no element is a WMC and therefore able to be construed as GRC in the sentence. Similar facts obtain when a discourse context of the above kind is made explicit. Here, too, the subject is obligatorily ga-marked and accorded an existential construal: witness (33), where the temporal clause headed by to (which cannot be wa-marked) apparently functions as GRC.

(33) Botan-o osu to, keihoo-ga/*wa⁸ naru
Button-ACC press-IMP when alarm-NOM/TP ring-IMP

'When you press this button, an alarm rings.'

The lack of WMCs in (31)–(33) demonstrates that wa-marking per se is not the sole determinant of the generic interpretation and that discourse context and to-clauses may also be involved. But it is also patent from the above data that the relation between a GRC and the rest of the sentence is one in which discourse phenomena, including wa, play a crucial determining role in the semantic inter-

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⁸ Wa-marking is only possible here on a strongly contrastive intonational contour on wa.
pretation of the sentence. Milsark (1974), in his original discussion of English (9), notes that the existential construal of the subject is eliminated when hurricanes is the 'topic' of the sentence, by which he means, apparently, what the sentence is 'about.' The difference in the meaning of Japanese (18) and (19) above supports his observation from a crosslinguistic perspective.

The observation that generic sentences seem to be bound up with discourse notions is scarcely new. The correlation with thematicity is observed by Dahl (1969) in his treatment of Russian topicalization, and more recently by Krifka and Gerstner (1987) and Krifka (1988). In particular, Krifka (1988) proposes an account in which the bipartite information structures expressed in the functionalist literature in terms of dichotomies such as theme/rheme (Firbas, 1964; Halliday, 1967), given/new (Chafe, 1972, 1976), or, more generally, background/focus are analyzed as relations, and tied to an alternative account of generic sentences based on the work of Heim (1982) on conditionals. I will take up this account in detail in the next chapter.

I will not, however, seek to explicate the relationship of wa-marking and generic sentences directly in discourse terms. Notions such as 'theme' and 'topic' notoriously resist coherent definition, (see Reinhart (1982) for a discussion of their attendant problems), and

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9 It is suggested in Carlson (1989) that the role of such discourse phenomena might be fruitfully explored in terms of conversational backgrounds employed by Kratzer (1981) in her analysis of the interpretation of modal operators.
are likely to prove too vague to be useful. Instead, I will attempt to define the relationship between GRCs and their sentences in syntactic terms. To give some flavor to the nature of the account that will be developed, let us recapitulate briefly certain key facts ascertainable from the following triplet of sentences:

(34) Robots assembles the new cars.
(35) Atarasii zidoosya-wa, robotto-ga t kumitateru
    New car-TP robot-NOM assemble-IMP
    'The new cars (in general) are assembled by robots.'
(36) Robotto-wa atarasii zidoosya-o kumi-tateru
    robot-TP new auto-ACC assemble-build-IMP
    'Robots (in general) assemble (the) new cars.

Although (34) is semantically ambiguous in ways unpredicted by Carlson's 1977 predicational model, the Japanese counterparts of (34), seen in (35) and (36), are unambiguous. This disambiguation is mandatory in matrix contexts, and is performed by marking the GRC with wa and placing it in sentence-initial position. Failure to prepose the WMC results in a strongly contrastive 'at least' reading, and seems to lack a GRC construal, as (37) indicates:

(37) robotto-ga atarasii zidoosya-wa kumitateru
    robot-NOM new car-TP assemble-IMP
    'Robots assemble new cars at least.'

    In other words, the two potential meanings of English (34) are matched by at least two separate S-Structure configurations in
Japanese. These sentences manifest a set of phenomena that must, I believe, be addressed in any account of generic sentences and the role of *wa*-marking, leading to the following extension of Carlson’s (1989) relational hypothesis: genericity involves a relation among constituents that can be captured syntactically at a level of Logical Form in a modular syntactic theory such as that of Chomsky (1981).

It would appear that there is a parametric difference between English and Japanese in which Japanese moves a GRC at S-Structure and Logical Form, and English does so at Logical Form. The obvious analogy here is *Wh*-movement — a discourse phenomenon whose overt syntactic manifestations have been extensively explored — which takes place at S-Structure and Logical Form in English, but only at Logical Form in Japanese (Saito and Hoji, 1983). In the next chapter, I will address the semantic nature of this relation, where I describe a model based on Heim (1982) and extended by Krifka (1988). In Chapter Four, I will introduce evidence that the GRC undergoes movement at Logical Form in Japanese and English. In Chapter Five, it will be argued that the S-Structure landing site for the GRC movement in Japanese is CP (which is also presumably the landing site for LF movement in English), and that *wa* cannot be a *Wh*-like determiner operator.

Before embarking on a syntactic account, however, one obstacle must be eliminated. The discourse-functional account of *wa*-marking of Kuno (1972, 1973 a,b) accounts for the use of WMCs in generic sentences by subsuming WMC subjects under ‘anaphoric’
NPs that refer to established classes of entity. Kuno's account has been hugely influential both within Japanese and general linguistics, and in some recent generative literature has inspired suggestions, based on proposals by Abney (1987) and Fukui (1986), that *wa* may be analyzed as the definite determiner head of a functional projection DP (Tateishi, 1989; Tonoike, 1989). It must now be shown that Kuno's account is cannot explain certain aspects of the use of *wa* in generic sentences.

2.2 Thematic *Wa* and Generic Sentences (Kuno, 1973)

2.2.1 Generic and Anaphoric *Wa*

It should be emphasized at the outset that Kuno's account does not purport to directly explain the relationship of *wa*-marking to generic sentences, but arises out of the more restricted goal of explaining why it is at all possible to *wa*-mark subjects of generic sentences in the context of his own model of *wa*-marking, in particular, the distinction that he draws between 'thematic' and 'contrastive' uses of *wa*, and his concept of what constitutes a 'theme.' Kuno's dichotomy of thematic and contrastive *wa* is chiefly motivated by the difference

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10 The distinction between thematic and contrastive *wa* reflects an analysis first proposed by Mikami (1963: 198), who distinguishes between unstressed *human* 'unquestioned,' and stressed *taihi* 'comparison' functions of *wa*. Although the validity of Kuno's thematic/contrastive dichotomy has been called into question by some discourse scholars, (e.g., Maynard (1981), and more recently Clancy and Downing (1987)), the work of Saito (1985) and Hoji (1983) suggests that the distinction may have a basis in syntax. I will address the evidence for this in Chapter Five.
in acceptability between sentences like (38) and (39), where the relevant WMC is an overtly quantified expression. Example (38), which involves no contrast, is ill-formed, but (39), where oozei no hito ‘a large number of people’ can be construed as contrasting with omosiroi hito ‘interesting person,’ is well-formed.

(38) *Oozei-no hito-wa paatei-ni kimasita
large-crowd-GEN person-TP party-p come-POL-PRF

‘A large number of people came to the party.’

(39) Oozei-no hito-wa paatei-ni kimasita ga
large-crowd-GEN person-TP party-P come-POL-PRF but
omosiroi hito-wa hitori-mo imasen desita.
interesting person-TP 1-CL-even exist-POL-NEG COP-POL-PRF

‘A large number of people came to the party, but there wasn’t a single interesting person.’

On the other hand, some instances of wa, exemplified by (40), where the WMC is a referential NP, and by generic sentences like (41) and (42), do not demand a contrastive interpretation in order to be well-formed. These, Kuno (1973 a, b) characterizes as ‘thematic.’

(40) John-wa gakusei desu.
PN-TP student COP-POL-IMP

‘John is a student.’

(41) Kuzira-wa honyuu doobutu desu.
Whale-TP feed-milk animal COP-POL-IMP

‘A whale is a mammal.’
The generalization that Kuno draws is that, unlike contrastive *wa*, ‘themes must be anaphoric or generic. Non-anaphoric, non-generic themes result in ungrammaticality.’ (1973a: 59). By ‘anaphoric’ Kuno means that the NP concerned has an established referent in what he calls a ‘discourse registry,’ a mechanism by which speaker and hearer record and track discourse referents. As Kuno (1972) acknowledges, his use of the term ‘theme’ derives from the Prague school partition of the sentence into theme and rheme components (Firbas (1964); also Halliday (1967)). But whereas the theme/rheme dichotomy typically relates to the structure of information in the sentence,¹¹ Kuno makes no reference to bipartite organizational principles, nor does he distinguish between theme and left-dislocated ‘topic.’ Instead, as far as may be discerned from his writings of this period (i.e., Kuno 1972, 1973 a, b), the notion of theme is to be defined for Japanese in terms of a cluster of morphological, structural and

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¹¹ Mathesius (as discussed in Firbas (1964: 268)) defines ‘theme,’ as the element of a sentence that is ‘known or at least obvious’ ‘from which the speaker proceeds,’ while the ‘rheme’ contains ‘actual new information.’ Halliday (1967) takes the theme to be the first element in the sentence, indicating what the speaker is talking about. Firbas (1964, 1971) does not adopt a strictly bipartite theme/rheme analysis, but employs a graded notion of Communicative Dynamism (CD), which represents the extent to which the sentence element contributes to the development of the communication’ (1964: 270). Theme then is defined as ‘the sentence element (or elements) carrying the lowest degree(s) of CD within the sentence’ (1971: 270).
discourse functional properties, each of which constitutes a necessary but not a sufficient condition for themehood:

(43) (i) themes must be *wa*-marked;

(ii) where two or more WMCs co-occur in the sentence only the leftmost WMC may be construed as thematic (1973 a: 48); and,

(iii) themes are constrained by the status of the information in the discourse.

With respect to this last requirement, Kuno suggests that:

(44) ... only objects and concepts that have been mentioned and recorded in the registry of the present discourse can become themes. (1973: 39)

Contrastive uses of *wa* are exempt from this constraint, as shown by the acceptability of (39), where the quantified phrase *oozei no hito* cannot have a referent in the ‘discourse registry.’ The generalization in (44), however, entails consequences for Kuno’s treatment of *wa*-marking in generic sentences: because quantified expressions and other constituents whose reference is not established cannot be ‘themes’ (and by implication generic WMC subjects cannot be quantified over), he is obliged to provide a uniform account of the

12 Kuno (1973 a: 48) observes that a given sentence can have only one thematic *wa*: all but the left-most WMC must be contrastive. In (i) below, *watasi wa* may be thematic, *tabako wa* must be contrastive. Some exceptions to this claim will be introduced in Chapter Five.

(i) *Watasi-wa tabako wa suimasu*
   I-TP cigarette-TP smoke-POL-IMP
   ‘I smoke CIGARETTES.’
use of thematic *wa* in generic sentences like in (2) and (3). Accordingly, Kuno proposes that generic NPs refer to:

(45)  
*classes and not to some arbitrary members of the classes. Generic noun phrases seem to be in the permanent registry of discourse and do not have to be reentered into the temporary registry for each discourse. In the sense that they are permanently stored in the registry of discourse, generic noun phrases are also anaphoric.*  

(1973a: 41)  

The subject of a generic sentence is able to be a thematic WMC because it is old information in the discourse registry. The effect of (45) is to subsume subject WMCs in generic sentences under definite NPs. It will be seen that both Carlson's model and the informal treatment of Kuno agree in that NP subjects of generic sentences are not-quantificational. Moreover, in Kuno's account, these are in the 'permanent discourse registry.' Inasmuch as such referents need not be re-entered into the registry in each new discourse, we can regard these as the equivalent of Russellian rigid designators, and hence as the counterparts of Carlson's terms. Although Kuno does

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13 The claim that generic NPs do not refer to arbitrary members of a class is omitted from the Japanese edition of Kuno's work (1973b). It is unclear whether this reflects an abandonment of this position.

14 Note that nothing in Kuno's account inhibits WMC subject of generic sentences from having a contrastive interpretation when necessary; his account is solely concerned with accounting for its possibility.

15 Kuno's account has also apparently carried over into the functionalist literature. Li and Thompson (1976), for example, claim that the widespread occurrence of 'topics' in generic sentences stems from the fact that both are definite. Givón (1983), noting the persistent correlation of definiteness marking of NPs and genericity across languages, asserts that the referent of a definite NP is a familiar kind.
not specify how thematic WMCs might relate syntactically or semantically to the rest of the sentence, it seems reasonable to presume that a kind-referring WMC is predicated of the property expressed by the remainder of the sentence.

Kuno’s coupling of ‘anaphoric’ and generic NPs has been widely accepted in subsequent discussion of wa-marking and genericity in Japanese, e.g., Shirai (1981, 1987). The DP hypothesis (to be addressed from a syntactic perspective in Chapter Five) relies heavily on the assumed correctness of Kuno (1972, 1973 a,b). Yet Kuno’s account has been curiously immune from critical scrutiny, either in terms of its own assumptions and consequences, or in the light of the models of generic sentences in other languages.

The arguments that Kuno invokes to substantiate his position turn out to center on the English *speaking of ...* construction which he employs as an analogue of Japanese *wa* (1973: 39 ff). (Kuno seems to regard WMCs as ‘topics’ and therefore meriting special representation in his English glosses.) As he notes (correctly) *speaking of ...* never contains an indefinite NP, as the ungrammaticality of (47) demonstrates:

(46) Speaking of the man that she met, he was a hardworking accountant.

(47) *Speaking of a man that she met, he was a hardworking accountant.

---

16 Shirai (1981) offers a Montagovian treatment of generic sentences that adapts Kuno’s account more or less intact to Carlsonian framework.
The impossibility of an indefinite NP in (47), even a specific indefinite NP, shows that themes must be 'anaphoric.' The argument is then carried over to indefinite singular subjects in generic sentences: in a footnote, Kuno observes the following contrast as evidence for the definiteness of generic themes:

\begin{enumerate}
\item[(a)] Speaking of the beaver, it builds dams.
\item[(b)] Speaking of beavers, they build dams.
\item[(c)] *Speaking of a beaver, it builds dams.
\end{enumerate}

Since English definite NPs and bare plurals (which Kuno apparently assumes always to refer to classes) can occur in the speaking of... construction, while the indefinite NP in (48)(c) cannot, and since thematic WMCs in Japanese are assumed to be the equivalents of speaking of... phrases, it should follow that generic WMCs must be 'anaphoric.'\textsuperscript{17,18} This line of argument contains an

\textsuperscript{17} A similar line of argumentation is also employed by Carlson (1977) to argue that bare plurals (e.g., beavers in (14)(c)) are like proper names.

\textsuperscript{18} Kuno suggests that in sentences like:

\begin{enumerate}
\item[(i)] A beaver builds dams.
\item[(ii)] *Speaking of any beaver, it builds dams.
\end{enumerate}

the indefinite \textit{a beaver} might be treated as derived from \textit{any beaver}, following a suggestion by Perlmutter (1971). The impossibility of (48)(c) is then attributed to the impossibility of (ii)

which is quite unaccounted for. Kuno's analysis of generic subjects in Japanese as exclusively 'anaphoric' implies, moreover, that English, through its determiners, has a mechanism for expressing genericity that Japanese lacks, namely the option of NPs that refer to arbitrary members of a kind. Thus a generic sentence such as (iii):

\begin{enumerate}
\item[(iii)]
\end{enumerate}
implicit assumption that speaking of... does in fact correspond both syntactically and functionally to WMCs in Japanese. It does not.

Speaking of has the syntactic properties of a left dislocation: it always requires resumptives and cannot occur with non-NPs.\(^{19}\)

(49) Speaking of Bill, he/*\(\emptyset\) forgot to tell me about the meeting.

(50) *Speaking of in the garden\(\_i\), Mary held her seminars there\(\_i/\emptyset\_i\)

Yet, as I will argue in greater detail in Chapter Five, we cannot presume all thematic WMCs in Japanese to be left-dislocations. If it

(iii) Neko-wa asi-kara tyakuti-suru
    Cat-TP feet-ABL land-IMP

must be translationally equivalent to (iv)(a) and (b), but never (v):

(iv) (a) The cat lands on its feet.
     (b) Cats land on their feet.

(v) A cat lands on its feet.

This might be written off as a low-level language-specific difference between Japanese and English. Yet intuitively, something is wrong with characterizing the matter in this fashion. (v) is a completely natural and legitimate cross-linguistic translation of (iii), being true whenever the latter is true and vice versa.

\(^{19}\) I am grateful to John Whitman, for suggesting these examples. It is clear that there are WMCs in Japanese that do correspond to these constructions. WMCs of the sort in (i) that relate to a gap in a complex NP are a case in point. These must be base generated outside IP (Saito, 1985; Hoji 1985), and therefore may be regarded as comparable to English Left Dislocations.

(i) [ Bento\(\_i\)-wa [IP' hutuu [IP' [NP [e\(\_j\) e\(\_i\) nokosita]]
    Packed-lunch-TH usually leave-PRF
    ko\(\_j\)-o [IP okaasan-ga tj sikaru ]]
    child-ACC mother-NOM scold-IMP

'A packed lunch: it is usually the mother who scolds a child who leaves any of it.'
is assumed for the moment that thematic WMCs are located in some pre-IP position at S-Structure, the impossibility of an overt resumptive pronoun in (51) below can be taken to indicate that in non-subjacency environments a subject WMC may undergo vacuous movement as indicated in (52).

(51) *?[ Inui-wa [IP sorei-ga neko-o okkakeru]20
dog-TW that-NOM cat-ACC chase-IMP

'Dogs chase cats.'

(52) [Inui-wa [IP ti neko-o okkakeru]
dog-TW cat-ACC chase-IMP

'Dogs chase cats.'

Moreover, unlike speaking of..., thematic wa marking does allow certain types of PPs notably locatives and temporal expressions (Kuno 1978):

(53) Niwa-de-wa, Yamada-san-wa mainiti taisoo-o
Garden-LOC-TP PN-TP every day exercise-ACc
doa-PRF

'In the garden, Yamada-san exercised every day.'

20 Alternatively, the Avoid pro (PRO) principle (Chomsky, 1981, 1982) could be invoked to account for the unacceptability of the resumptive. This, however, seems inadequate as an explanation, since it fails to account for the possibility of object resumptives.

(i) Neko-wa inu-ga sore-o okkakeru
cat-TP dog-NOM that-ACC chase-IMP

'Cats, dogs chase them.'
In effect, Kuno defines ‘theme’ in terms of the attributes of English left dislocations, which are then arbitrarily extended to Japanese *wa*-marking. His account is little more than an artifact of his English translations. Yet the problematic nature of Kuno’s use of *speaking of...* does not in and of itself repudiate his account.

It should be noted at this point that Kuno’s model is not directly contradicted by Carlson’s 1989 arguments against a subject-predicate analysis and corroborating evidence of corresponding sentences in Japanese discussed in the previous section. Since the GRCs in Carlson’s problematic sentences contain definite NPs, the data might superficially be taken to support Kuno’s treatment of themes as ‘anaphoric,’ possibly to entities in a temporary discourse file. The interpretation of the object GRC in (23), repeated below, is a case in point.

(23) Atarasii zidoosya-wa, robotto-ga  t  kumitaterun
New car-TP robot-NOM assemble-IMP

‘Robots assembles the new cars.’

Nor do Carlson’s 1989 observations eliminate the possibility that *wa*-marked GRC subjects may be kind-referring NPs qua intensional entities. In practice it is unclear that this possibility can ever be completely ruled out, since we must obviously always allow some WMCs to be kind-referring: in (54) and (55), below, the predicates cannot be interpreted as applying distributively to individual mammoths or individual foxes, but only to the kind as a whole.
(54) Manmosu-wa zetumetu site iru.
Mammoth-TP die-out do-GER exist-IMPRF

(i) The mammoth is extinct
(ii) Mammoths are extinct
(iii) *A mammoth is extinct

(55) Kitune-wa kita hankyuu-ni bunpu site iru
fox-TP Nth hemisph-LOC distribute do-GER exist-IMP

(i) The fox is distributed throughout the Northern Hemisphere
(ii) Foxes are distributed throughout the Northern Hemisphere
(iii) *A fox is distributed throughout the Northern Hemisphere

Nevertheless, certain kinds of WMC in generic sentences exhibit behavior that resists an account in terms of Kuno’s discourse-based notion of theme, indicating that anaphoricity alone is inadequate to explain the GRCs in the Japanese examples cited in Section 2.1.3. In the next section, I will consider two such classes of WMC, temporal adjuncts and no ni clauses.

2.2.2 Two Problems for Kuno’s Analysis

2.2.2.1 Temporal Adjuncts

First, let us consider the case of temporal adjuncts. In Japanese these typically consist of an NP marked with the postposition ni:

(56) doyoobi ni ‘on Saturday’
(57) ni-zi-ni ‘at two o’clock’
Certain temporal nouns, notably *toki* ‘time’ and *hi* ‘day’ normally require modification by a relative clause, or a genitive construction.

(58) \[ [\text{Tookyoo-ni iku CP}] \text{toki NP]-ni}^{21} \]
\[ \text{PN-P go-IMP time-P} \]

‘when I go to Tookyoo’

(59) \[ [\text{ame-ga hutta CP}] \text{hi NP]-ni} \]
\[ \text{rain-NOM fall-PRF day-P} \]

‘on a/the day when it rained’

(60) \[ [\text{ame-no hi]-ni} \]
\[ \text{rain-GEN day-P} \]

‘on a/the rainy day’

*Wa-*marking this class of temporal adjuncts containing complex NPs significantly changes the meaning of the sentence. In habitual sentences (for present purposes I will follow Carlson in including habitual sentences within the broad purview of generic sentences), *wa-*marking induces a construal in which the temporal adjunct seems to quantify universally over occasions. This is illustrated by the difference in meaning between (62), where the temporal phrase headed by *toki ni* is a WMC and (61), where it is not.

(61) \[ \text{Beegeru-o kau toki-ni, Nyuu Yooku Taimuzu-o Bagel-ACC buy-IMP time-P PN-ACC} \]
\[ \text{kaimasu buy-IMP} \]

‘I buy the New York Times when I buy bagels.’

---

21 When these forms do occur unmodified, their meanings are idiosyncratic: *toki ni* ‘occasionally,’ *hi ni* ‘day by day.’
(62) Beegeru-o kau toki-ni-wa, Nyuu Yooku Taimuzu-o
Bagel-ACC buy-IMP time--P-TP PN-ACC

kaimasu
buy-IMP

‘When(ever) I buy bagels, I buy the New York Times.’

On the habitual reading of (61), the sentence is interpreted as existentially identifying occasions when the speaker purchases the New York Times: the speaker asserts that he buys the newspaper on occasions when he buys bagels, but does not imply that every act of bagel buying is accompanied by an act of buying the newspaper. In (62), however, non-contrastive wa-marking permits a reading in which the WMC seems to quantify universally over occasions: roughly ‘every occasion when I buy bagels is an occasion when I buy the New York Times.’ The universal construal in (62) is ‘weak’ in that it freely allows exceptions: the sentence is not falsified if the bagel shop happens to be out of newspapers on any given occasion: the interpretation of (62) thus replicates the familiar tolerance of exceptions shown by generic sentences. The universal-like construal may be explicitly captured by the paraphrase in (63) containing the adverb itumo ‘always.’

22 Since the verb is imperfective and thus unmarked for aspect, (61) and (62) sentences permit both a future tense and a habitual reading. I will disregard the future tense reading as irrelevant. (62) has contrastive "at least" reading for the wa-marked constituent (I buy the New York Times when I buy bagels at least.) This reading, I will also disregard.

23 The correlation between wa-marking of temporal phrase and a universal interpretation is noted by Jorden (1963), who suggests that a clause headed by toki ni wa refers to a repeated action: ‘at times when — ’ (1963: 353).
(63) Beegeru-o kau toki-ni-wa, itumo Nyuu Yooku Bagel-ACC buy-IMP time-p-TP always
Taimuzu-o kaimasu PN-ACC buy-IMP

‘When(ever) I buy bagels, I always buy the New York Times.’

As in the Japanese examples cited in 2.2.4, it appears that the notion of theme plays a central role in the generic interpretation. This is especially salient in some contexts, where the universal construal contributed by *wa*-marking can apparently license a habitual interpretation that is not otherwise available. This occurs when the verb bears perfective morphology: a bare temporal PP is construed as relating only to the time of a single event. (64) lacks a habitual construal.

(i) Koobe-e iku toki-ni-wa, tomodati-no uti-ni Kobe-DAT go-IMP time-DAT-TP friend-GEN house-DAT tomarimasu. stay-imp

‘At times when I go to Kobe, I stop at a friend’s house.’

Martin (1975) cites examples like (ii) and (iii), noting that “the implication is whenever, on every occasion that’” (1975: 730):

(ii) Taikin-o kasu toki-ni-wa, syoomon-o Large-sums-ACC lend-IMP time-DAT-WA note-ACC kakaseta hoo-ga ii write-CAUSE side-NOM good-IMP

‘When(ever) one lends large sums of money, one had best get them to sign a note.’

(iii) Kokka-o utau toki-ni-wa, kiritu simasu. Anthem-ACC sing-IMP time-DAT-WA stand do-IMP

‘When(ever) we sing the national anthem, we stand up.’
(64) Hareta hi-ni mizuumi-ni itta.
    fine day-P lake-P go-PRF

    'One fine day we went to the lake.'

When, on the other hand, the temporal phrase is a thematic WMC, as in (65) below, the sentence may refer to iterated events, in which case it is interpreted as a past tense habitual.

(65) Hareta hi-ni-wa mizuumi-ni itta.
    fine day-P-TP lake-P go-PRF

    'We went to the lake whenever it was fine.'

As in the case of toki ni wa in (62), example (65) may readily be paraphrased by related sentences containing the adverb itumo 'always,' and also adverbs of similar semantic content, e.g., kanarazu 'without fail':

(66) Hareta hi-ni-wa itumo mizuumi-ni itta.
    fine day-P-TP always lake-P go-PRF

    'We always went to the lake when it was fine.'

(67) Hareta hi-ni-wa kanarazu mizuumi-ni itta.
    fine day-P-TP without fail lake-P go-PRF

    'We went to the lake without fail whenever it was fine.'

Once again, thematicity, as manifested by wa-marking, seems to play a key role in generic sentences, but their role is inexplicable in terms of Kuno's account. First, wa-marking seems to be able to create a habitual interpretation, apparently by marking a temporal adjunct as a GRC. Second, if the temporal WMCs are GRCs, they do
not seem to function as such by virtue of referring to kinds of occasions whose reference is in any sense fixed. By their very ad hoc nature, exemplified in expressions like beegeru o kau toki ni wa ‘on occasions when I buy bagels,’ they cannot plausibly be terms in the sense of Carlson, nor anaphoric to a referent in the sense of Kuno. Third, wa-marking seems to obtain a universal-like construal in already habitual contexts in a manner that is unpredicted by anything in Kuno (1972, 1973 a,b).²⁴

2.2.2.2 No ni Clauses and Arbitrary Reference

Additional evidence that WMCs have an inherent relationship with GRCs is furnished by the behavior of no ni clauses, employed in a variety of purposive and habilitative contexts.²⁵ Thematic wa-marking of this class of adjunct clause has the effect of making a generic sentence. This is seen in the contrast between (68) and (69) below, originally due to Mikami (1963: 161). In (68), wa may be construed non-contrastively.

²⁴ We may also note that these constructions seem to involve movement. Corresponding sentences of English involving Left Dislocations are ungrammatical:
(i) *Whenever it was fine, we went to the lake then.

²⁵ Some no ni clauses translate as English purposives, others as sentential subjects. They appear to be full PPs, with the postposition ni taking a CP complement headed (in the spoken language at least) by the complementizer no. Unlike English purposive clauses, they show no indication of being infinitival; however, they only occur with imperfective verbal morphology.
Mikami remarks that (68) is a 'self-sufficient' (zisokuteki na) expression of a general principle, requiring no consideration of any specific individual as agent. (69), on the other hand, is not 'self-sufficient,' and demands that the discourse provide some referent as agent. In other words, the subject Empty Category of (68) must be construed as having arbitrary reference, while that in (69) is not. In short, wa-marking the embedded clause in (68) results in a generic sentence, a fact that cannot be accounted for in terms of a predicational treatment of generic sentences such as Carlson (1977), since the no ni clause is not a subject. Likewise, Kuno's account of thematic wa-marking as anaphoric completely fails to account for (68). The arbitrary reference of the ECs in (68) is inconsistent with the claim that the wa-marking is due to the anaphoricity of the no ni clause; the incongruity is heightened by the fact that it is precisely in the non-wa-marked case that the EC is construed as having definite reference.
This behavior is quite systematic, as illustrated in the contrasts between (70) and (71), and between (72) and (73). In (70), where the no ni clause is a WMC, the EC has arbitrary reference and the sentence is interpreted generically. In (71), some referent must be introduced from the discourse for the sentence to be interpreted.

(70) \( e \) gakugyou-o tuzukeru no-ni-wa,
     studies-ACC continue-IMP CMP-P-TP

syoogakkin-ga hituyoo da [generic]
fellowship-NOM necessity COP-IMP

'Fellowships are necessary in order to continue one's studies.'

(71) \( e \) gakugyou-o tuzukeru no-ni
     studies-ACC continue-IMP CMP-P

syoogakkin-ga hituyoo da [specific]
fellowship-NOM necessity COP-IMP

'He needs a fellowship in order to continue his studies.'

The same contrast occurs in (72) and (73), where no overt modality is involved. (72) is as generic sentence, while (73) seems to require a specific referent for the EC and a specific occasion.

(72) \( e \) kuukoo-ni iku no-ni-wa, nizikan kakaru
     airport-P go-IMP CMP-P-TP two-hours take-IMP [generic]

'It takes two hours to get to the airport.'

(73) \( e \) kuukoo-ni iku no-ni, nizikan kakaru
     airport-P go-IMP CMP-P two-hours take-IMP [specific]

'It will take you two hours to get to the airport.'
Inasmuch as Kuno’s account of wa-marking only concerns the reference of NPs, and posits no intrinsic relation between wa-marking and generic sentences, it cannot explain the phenomena observed here. Yet these phenomena must presumably be accounted for in any theory of generic sentences and wa-marking. I will return to these examples in the next chapter, along with further evidence from the bound variable interpretation of zibun ‘self’ that Kuno’s account cannot be correct with respect to NPs.

2.3 Conclusions

Carlson’s (1989) data demonstrates that a conventional subject-predicate treatment of generic sentences cannot be upheld. Carlson proposes, therefore that generic sentences must be viewed in terms of a relationship between a GENERIC RELATED CONSTITUENT (GRC) and the remainder of the sentence. The evidence from Japanese shows that WMCs more or less obligatorily function as GRCs in matrix sentences, and that discourse phenomena play a pivotal role in the generic construal of the sentences. Yet Kuno’s discourse-based account of the relationship of wa-marking to genericity must also be discarded as untenable; it cannot account for the behavior of certain non-NP WMC types in generic sentences. We will therefore also discard the notion that GRCs in generic sentences are wa-marked because they are necessarily anaphoric, denoting a kind or class of entities.
The question remains as to how we are to understand the relation between the GRC and the generic sentence. In §2.2.3, I suggested that a parametric syntactic account may be possible in which the GRC undergoes movement at S-Structure and Logical Form in Japanese, and at Logical Form only in English. In the next chapter, I will sketch a quantificational account of generic sentences, based on Heim (1982), that holds potential solutions for many of the problems in this Chapter.
Appendix: A Note on Overt Genericity with \[...to iu mono\]

By way of a diagnostic for generic interpretations in connection with NPs, I will introduce some data that at first sight appear to be a form of periphrastic kind reference in Japanese, but on closer inspection exhibit a number of properties that are inconsistent with such an analysis. Examples involve the embedding of an NP under the phrase to iu mono ‘thing called ...’ which, in appropriate circumstances, appears to create a ‘generic’ NP and which we will employ from time to time as a means of forcing a generic interpretation. The structure of this phrase is given in (74) and (75):

\[
(74) \left[ \text{NP [S [NP daigaku] to iu] mono} \right] \\
\text{university CMP say thing} \\
\text{‘thing called university’}
\]

\[
(75) \left[ \text{NP [S [NP dai-tokai] to iu] mono} \right] \\
\text{big-city CMP say thing} \\
\text{‘thing called big city’}
\]

Only common nouns may be embedded within these constructions,\(^{26}\) which, when the resultant complex NP is thematically wa-

\(^{26}\) Proper names resist embedding under to iu mono, and seem to require that the head noun be semantically congruous with the type of entity referred to by the name.

\[
(i) \quad \text{Nyuu Yooku to iu tokoro/mono} \\
\text{PN QT say place thing} \\
\text{‘place called New York’}
\]
marked, has the effect of rendering the sentences unambiguously
generic. This can be seen in (76) and (77), which do not allow a
referential reading for the subject NPs.

(76) Sibai to iu mono-wa syuddan-no geizyutu da.
theater CMP say thing-TP group-GEN art COP-IMP

= (i) 'Theater is a collective art.'
≠ (ii) '(our) play is a collective art.'

(77) Kodomo to iu mono-wa, asonde okiku naru
child CMP say thing-TP playing bigly become-IMP

= (i) 'Children grow through play.'
≠ (ii) 'The children grow by playing.'

This property allows the to iu mono construction to be widely
employed to disambiguate sentences where wa-marking alone might
fail to distinguish between generic and non generic readings. In
each of the following sequences of sentences, the second is
ambiguous between two construals, which may be determined, if at
all, only by the discourse context.

(78) Kodomo-mo otona-mo atumatte iru
child-also adult-also gather-GER be-PRF

(ii) Tanaka-san to iu hito/*mono
PN CMP say person/thing

'person called Tanaka-san'
Kodomo-wa yoku syaberu.
child-TP often talk-IMP

Both children and adults have gathered.

(i) The children talk a lot
(ii) Children talk a lot.'

\( \text{(79) Inu-ga teeburu-no sita-ni, neko-ga reizookoo-no} \)
dog-NOM table-GEN under-DAT cat-NOM refrigerator-GEN
ue-ni nete ita. Neko-wa miharasi-no ii
top-GEN sleep-GER be-PRF cat-TP view-GEN good
tokoro-ga suki da.
place-NOM liking COP-IMP

'The dog was asleep under the table, the cat atop the fridge.

(i) The cat likes places with a good view. [non generic]
(ii) Cats like places with a good view. [generic]

When the subject NP is embedded under to iu mono, however, the relevant sentences become unequivocally generic. In (80) and (81), the wa-marked to iu mono phrase cannot refer to a specific individual.

\( \text{(80) Kodomo-mo otona-mo atumatte iru} \)
child-also adult-also gather-GER be-PRF

Kodomo to iu mono-wa yoku syaberu.
child CMP say thing-TP often talk-IMP

Both children and adults have gathered. Children talk a lot.'
[generic only]

\( \text{(81) Inu-ga teeburu-no sita-ni, neko-ga reizooko-no} \)
dog-NOM table-GEN under-DAT cat-NOM refrigerator-gen
ue-ni nete ita. Neko to iu mono-wa
top-GEN sleep-GER be-PRF cat CMP say thing-TP

miharasi-no ii tokoro-ga suki da.
view-GEN good place-NOM liking COP-IMP

'The dog was asleep under the table, the cat atop the fridge. Cats like places with a clear view.' [generic only]

It appears that embedding an NP under to iu mono can create an explicitly 'generic' NP, thereby enabling speakers to distinguish such entities from definite instances, whose referent is already established. On a predication-of-kinds account of generic sentences, therefore, to iu mono might plausibly be regarded as a periphrastic device for converting a common noun referring to the instantiation of a kind (an 'object,' in the terms of Carlson (1977)) into a kind-referring expression. This hypothesis is reinforced by the fact that to iu mono may be employed in contexts where only kind-referring NPs are possible in English.

(82) Manmosu to iu mono-wa zetumetu site iru
mammoth CMP say thing-TP extinction do-GER be-IMP

'The mammoth is extinct.'

(83) Kuzira to iu mono-wa sekai-no umi-ni hiroku
whale cmp say thing-TP world-GEN sea-DAT widely
bunpu site iru
distribution do-GER be-IMP

'The whale is widely distributed throughout the oceans of the world.'
When one examines this construction in a broader range of syntactic contexts, however, it turns out that the generic interpretation in matrix sentences is very much contingent on thematic *wa*-marking. Case-marking this construction results in a non-generic, existential construal and allows it to occur in sentences that cannot be construed as generic. When in subject position, which I take to be the specifier position of IP, and marked with nominative *ga*, the *to iu mono* phrase is to be interpreted existentially.

(84) Asita, reezaa raitaa to iu mono-ga kuru tomorrow laser-writer CMP say thing-NOM come-IMP no desu. CMP COP-IMP

'Tomorrow, something called a laser writer is going to arrive.'

(85) Konaida reezaa raitaa to iu mono-ga kosyoo-site other-day laser-writer CMP say thing-NOM breakdown-GER taihen datta. difficulty COP-PRF

'The other day something called the laser writer broke down and there was a lot of trouble.'

In (85) and (86), the *to iu mono* phrases are most plausibly interpreted as referring to specific instantiations of a kind that is unfamiliar to the speaker.27 A construal in which the complex NP is

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27 In this respect, *to iu mono* patterns with an open-ended class of expressions used to identify the kind to which some individual, identified by a proper name that is presumed to be unfamiliar to the hearer, belongs.
taken to refer to an entire kind is utterly impossible in the normal physical world. Whether the phrase refers to the kind itself or its instantiations, in fact, depends on contextual factors, as can be seen from the contrast between (86) and (87).

(86) Riniaa motaa kaa to iu mono-ga zisoku linear motor car CMP say thing-NOM hourly-speed sanbyaku kiro-de hasitta tte. 300 kilometers-ins run-prf it-is-said

‘They say that something called a maglev train ran at 300 kph.’

(87) Riniaa motaa kaa to iu mono-ga linear motor car CMP say thing-NOM kaihatu sarete iru. develop-PASS-GER be-IMP

‘Something called the maglev train has been developed.’

(i) Yuube Tanaka-san to iu hito-ni atta Last night PN CMP say person-DAT meet-PRF

‘Last night I met someone called Tanaka-san.’

(ii) Musuko-ga Kooneru to iu daigaiku-ni Son-NOM PN CMP say university-DAT hairitai tte enter-DESID it is said

‘Her son wants to go to a college called Cornell, so she says.’

Although these constructions identify the kind to which the embedded proper name belongs, we do not interpret them as kind-refering expressions. Rather they refer to a specific individual member of the kind, as identified by the embedded proper name. It should also be noted that these show up as ‘definite’ in contexts like:

(iii) Kooneru to iu daigaku-wa ookii zo PN CMP SAY college-TP big-IMP EXCL

‘(The college called) Cornell is pretty big, I tell you.’
Example (86) favors an interpretation where the *to iu mono* phrase refers to an individual instances, while in (87) it appears to refer unambiguously to an unfamiliar kind rather to any specific, ultimately identifiable entity.

A similar ability to refer to both individual instantiations and entire kinds is exhibited when the *to iu mono* phrase occurs inside the VP. Again the interpretation is existential, and the sentences are non-generic.

(88) *Kinoo, depaato-de katei robotto to iu mono-o mita.*

Yesterday dept. store-LOC home robot CMP say thing-ACC see-PRF

'Yesterday I saw something called a home robot in the department store.'

(89) *Yamada-san-wa riniaa motaa kaa to iu mono-o kenkyuu site iru.*

PN-TP linear motor car CMP say thing-ACC research do-GER be-IMP

'Yamada-san is researching something called a maglev train.'

In (88) the referent of the *to iu mono* phrase must be a single instantiation of the type of entity indicated to by the embedded NP. The speaker did not see the entire kind 'home robot,' but saw some representative object. In (89), it seems more appropriate to understand Yamada-san to be studying the kind maglev train and its properties, rather than individual instantiations of the kind. The above examples demonstrate that *to iu mono* can and does refer both
to individual object members of a kind and to the kind itself. In other words, when the phrase is not wa-marked, *to iu mono* reflects a general ambiguity of NPs in Japanese as to whether they refer to the kind or an object.

If thematic *wa*-marking only applies to ‘anaphoric’ elements including kinds, this ambiguity would predict that the *to iu mono* phrase should also permit an interpretation under *wa*-marking where it refers to specific instantiations of the kind. Yet, as we saw in (80) and (81), it evidently does not. It seems improbable that thematic *wa*-marking limits the denotation of *to iu mono* phrases to kinds themselves. The key here, I believe, lies in the fact that a non-*wa*-marked *to iu mono* phrase refers to an entity that is not well identified or established in the mind of the speaker, or is assumed by the speaker to be unfamiliar to the hearer. It then might be surmised that this is also true of the *wa*-marked cases, and that the entities picked out by *to iu mono* may be arbitrary individuals, whose membership in the kind is known, but whose reference cannot be established.
Chapter Three

A Quantificational Model

As we saw in the previous chapter, Carlson has discarded his own 1977 predicational account of generic sentences, proposing instead that genericity stems from a relation between an intensional Generic-Related Constituent (GRC) and the remainder of the sentence. Although Carlson does not attempt to define the nature of this relation, it is evident that in Japanese the relation is one in which thematic wa plays a decisive role and does so, moreover, in ways not predicted by Kuno’s account of the notion of theme. In a recent paper, however, Krifka (1988) has sought to specify the relation proposed by Carlson in a treatment that hinges heavily on the notion of theme as a component in a relational structure, and links this structure with proposals by Heim (1982) and Gerstner and Krifka (1987) for a quantificational treatment of generic sentences. These proposals, represented also in work by Diesing (1988), Kratzer (1989) and Schubert and Pelletier (1989), conceive of generic sentences as tripartite structures consisting of a restrictive term and a nuclear scope, related by an
invisible quantificational operator; they seem to offer a solution to the problems of Carlson (1989) and Kuno (1973).

3.1 A Quantificational Model of Generic Sentences

The model of generic sentences presented in this chapter is a quantificational one. On a conventional view of natural language quantification, quantifiers are held to correlate with syntactic constituents, specifically the class of NPs. This syntactic conception finds its most explicit expression in Barwise and Cooper (1981), who define NPs as generalized quantifiers consisting of determiner and a noun. It also implicitly underlies many generative treatments of the subject (e.g., May, 1985), including, notably, recent attempts to define a syntactic functional category Determiner Phrase (DP) (Abney, 1987; Fukui, 1986). Any attempt to treat generic sentences as quantificational within this framework is easily shown to be incoherent; witness the range of determiners in (1)(a)–(c):

\[(1) \quad \text{(a)} \quad \text{`A whale sings songs that rhyme.'} \\
\text{(b)} \quad \text{`The whale sings songs that rhyme.'} \\
\text{(c)} \quad \text{`Whales sing songs that rhyme.'}\]

In (1) (a), treating the indefinite article as quantifying existentially yields an incorrect non-generic interpretation for the sentence, while in (1) (b), a Russellian treatment of definite descriptions presumably requires the NP the whale to refer to a definite kind. Carlson (1977) argues extensively—and, I believe, correctly—against positing
an invisible determiner in the case of bare plural NPs, as in (1c). Certainly no single uniform quantificational operator can be posited for these examples. Moreover, the non-NP GRCs observed in Chapter Two equally resist a quantificational account of generic sentences based on the assumption that NPs are generalized quantifiers.

These problems can be obviated, however, in an alternative conception of quantification that has emerged in which quantifiers are not necessarily viewed as coterminous with the syntactic category NP nor even as constituting single syntactic units, but are seen as relations that hold between different constituents of the sentence. This relational theory, which has been articulated by van Bentham (1986), Krifka (1988), and Partee (1989), is implicit in treatments of generic sentences by Heim (1982), Diesing (1988), and Kratzer (1989).

3.1.1 Adverbs of Quantification

A crucial component of this alternative conception of quantification is the notion of ADVERB OF QUANTIFICATION, first proposed by Lewis (1975) as a solution to the problem posed by the interpretation of conditional sentences such as (2):

(2) Always, if someone foolish has a good idea, nobody gives him credit for it.

In (2), the indefinite someone foolish and a good idea are interpreted as having the force of universal quantification, rather than the expected existential construal. Lewis attributes this interpretation to
the presence of the adverb *always*, and proposes that this and similar adverbs (e.g., *mostly, usually, sometimes*) can be analyzed as quantificational operators. These ADVERBS OF QUANTIFICATION are UNSELECTIVE in that, unlike quantification by NP-internal determiners, they can range over more than one variable.\(^1\) Example (2), on this account, is interpreted as shown in (3), with *always* binding the two variables, x and y.

(3) Always [if x is someone foolish, if y is some good idea, and if x has y] [ nobody gives x credit for y]

The representation in (3) lacks the implicational arrow (\(\rightarrow\)) conventionally associated with conditional clauses. This omission is

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\(^1\) The quantificational properties of this class of adverbs is also evident in Japanese, e.g., *taitei* 'for the most part,' *daitai* 'mainly.' Nishigauchi (1986: 182–190) shows that these are able to quantify non-selectively over concessive clauses containing *wh*-variables:

(i) Dono gakusei-ga kaita ronbun-ni-mo
Which student-NOM write-PRF paper-DAT-also
tai-tei omosiroi koto-ga kaitte atta.
most part interesting thing-NOM write-GER exist-PRF

For most x,y, x a student, y a paper that x wrote, something interesting was written in y.

They may also be observed in conjunction with non-concessive *if*-clauses of the standard donkey sentence type.

(ii) [Noofui-ga robaj-o kaeba] tai-tei \(e_i\)
peasant-NOM donkey-ACC keep-CND most part
hatake-sigoto-de \(e_j\) tukau
field-work-LOC use-IMP

'For most x,y, if x a farmer, y a donkey, and x owns y, x uses y in the fields.'
deliberate, for, as Krifka (1988) points out, Lewis views the adverb as an operator that relates the antecedent and the consequent. The representation in (3) above thus has three components: a relational operator (the adverb), and two arguments, namely the if-clause and the then clause. Lewis terms the first argument the RESTRICTIVE TERM, which defines domain over which the operator ranges. The second argument, following the lead of Heim (1982) and Krifka (1988), I will refer to as the NUCLEAR SCOPE.²

Lewis schematizes this relation as in (4), where the adverb relates the two predicational arguments and incidentally binds any free variables that those arguments may contain (1975: 10).³

\[
\begin{align*}
\{ \text{always, sometimes} \} & \quad \text{Operator} \\
\text{if } \Psi & \quad \text{Restrictive Term} \\
\Phi & \quad \text{Nuclear Scope}
\end{align*}
\]

² Lewis (1975) refers to the second argument as the 'modified sentence.' It is also labelled the 'nuclear predicate' in some accounts, e.g., Diesing (1988) and Kratzer (1989). I employ the term used by Heim for the sake of greater generality, since it allows, for example, the possibility of complex multiclausal constituents as arguments of the operator.

³ Note that Lewis treats if as not contributing anything to the meaning of the sentence in his analysis of always, etc.
In adopting this tripartite structure, Lewis explicitly rejects the notion that the adverb of quantification modifies a sentential constituent combining the antecedent and consequent clauses, arguing that this would give a conditional sentence separate construals for different types of adverbial quantifiers: a conditional interpretation in the case of universal adverbial quantifiers as in (5) below, and a conjunctive interpretation in the case of existential adverbial quantifiers such as sometimes as in (6). (The following examples are from the summation in Krikfa (1988).)

(5) Always, if someone foolish has a good idea, nobody gives him credit for it.

∀ [someone foolish(x) has a good idea (y)] → nobody gives him (\(=x\)) credit for it (\(=y\))

(6) Sometimes, if someone foolish has a good idea, nobody gives him credit for it.

∃ [someone foolish(x) has a good idea (y)] \(∧\) [ nobody gives him (\(=x\)) credit for it (\(=y\))]

Accordingly there is no logical connective between the two clauses, the relationship between the two is defined by the adverbial operator.

3.1.2 Invisible Operators (Heim, 1982)

Heim (1982) extends Lewis's analysis to 'bare' conditional sentences without adverbs of quantification, treating these sentences, not as material implications, but as implicitly modalized, in the spirit of
Stalnaker's (1968) proposal that the antecedent of a conditional sentence defines a set of possible worlds in which the consequent holds. Heim's analysis is motivated by the evident parallels among conditional sentences such as those in (7) below, where adverbs of quantification and overt modal operators both have similar effects on the interpretation of an indefinite NP in the antecedent, i.e., *a cat* is interpreted as if universally quantified in (7)(a), as if existentially quantified in (7) (b) and so forth.

(7)  
(a)  If a cat has been exposed to 2, 4-D, it always goes blind.  
(b)  If a cat has been exposed to 2, 4-D, it often goes blind.  
(c)  If a cat has been exposed to 2, 4-D, it can go blind.  
(d)  If a cat has been exposed to 2, 4-D, it goes blind.

When the sentence contains an overt modal auxiliary, as in (7)(c), Heim suggests that the auxiliary functions as a non-selective operator, in a manner comparable to Lewis's adverbs of quantification, in a three-part quantificational structure consisting of a modal operator, a restrictive term (the antecedent) and a nuclear scope (the consequent). To account for 'bare' conditionals containing neither adverb of quantification nor overt modal auxiliary as in (7)(d), Heim posits an invisible necessity operator $\Box$, which provides what is in effect universal quantification over pairs \(<w,a>\) of possible worlds and free variables.

The 'bare' conditional sentence in (7)(d) above is thus assigned an LF configuration along the lines of (8):
Heim's model is premised crucially on two major hypotheses. The first is the idea, developed in Kratzer (1981), that modal operators in natural language are interpreted in terms of a contextually determined pragmatic base. The invisible necessity operator that Heim postulates to account for the interpretation of (7)(d) is not the rigidly exceptionless logical necessity, but a 'human' necessity that tolerates some exceptions but holds for all stereotypical cases of cats that consume agricultural chemicals.

Secondly, Heim introduces the non-standard assumption that indefinite NPs have no inherent quantificational force, but involve predications of bare variables, the English a cat being interpreted semantically not as implying $\exists x \, \text{cat}(x)$ but simply as implying $\text{cat}(x)$.\(^4\) Indefinite NPs then derive their quantified interpretation from non-selective adverbial operators like always or sometimes, or as in (8)

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\(^4\) Following Karttunen (1969), Heim treats the variables as being mapped to discourse referents and not to directly to individuals. The link to individuals comes in defining truth conditions in Heim's model.
above, the necessity operator, which quantifies universally over free
variables in the restrictive term. The Nuclear Scope is existentially
closed in order to ensure that any remaining indefinite NPs that do
not restrict the adverbial operator receive an existential construal.5

This means that Heim's concept of Logical Form is distinct
from that employed in standard generative models in that it contains
operators that have no overt realization in the surface syntax. This is
not in and of itself an overwhelming objection, given that the scope of
quantifiers assigned at LF typically reflects matters of interpretation
that have no S-Structure manifestation anyway. I will assume that
Logical Form, being an appropriate level of representation to reflect
the scopal relations, may contain whatever adjunct-like operators
may be required for the correct semantic interpretation of the sen-
tence.

The relational dimension of Heim's proposal is obscured by her
use of syntactic tree structures like (8) for her Logical Form represen-
tations. Nevertheless, it should be observed that her analysis is a
structural homomorphism with that adopted by Lewis in his account
of Adverbs of Quantification. In each case, the operator may be

\[ \Box \text{if a cat feels hungry} \exists [p \text{ it catches a mouse}] \]

Here the existential interpretation of a mouse is provided by the operator. Kratzer
(1989) proposes that existential closure is motivated in Stage-Level Predicates by the
need to bind a 'Davidsonian' spatio-temporal locative variable. This may be
correct; however, the exact source of existential closure does not concern us here.

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5 Although the utility of existential closure is not apparent in (8), it is
obviously needed when a new indefinite NP occurs in the nuclear scope as in (i):

(i) If a cat feels hungry, it catches a mouse.

\[ \Box \text{if a cat feels hungry} \exists [p \text{ it catches a mouse}] \]
viewed as relating two arguments, one consisting of the restrictive term, and the other the nuclear scope.

(9) (a) Always + Φ + Ψ *(Lewis)*

(b) □ + Φ + Ψ *(Heim)*

<table>
<thead>
<tr>
<th>Operator</th>
<th>Restrictive Term</th>
<th>Nuclear Scope</th>
</tr>
</thead>
</table>

This allows us to interpret (8) as in (10), where the subscripted indexation on the □ operator indicates the free variables that it binds.6

(10) □_x [if x is a cat & x has been exposed to 2,4-D] ∃ [x goes blind]

### 3.1.3 An Extension to Generic Sentences

Observing the family resemblance between conditional sentences (7) (a)-(d) and generic sentences with and without adverbial quantification in (11) (a)-(c), Heim (1982) speculates that the ‘bare’ generic sentence in (11)(c) might be accounted for by an extension of her model of conditional sentences.

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6 Note that since the operator is non-selective, it may bind however many variables are in the restrictive term, not just a single one:

(i) If a cat sees a girl, it scratches her.

(ii) □_(x,y) [if x is a cat & y is a girl] ∃ [x scratches y]
(11)  (a) A cat that has been exposed to 2, 4-D often goes blind.
(b) A cat that has been exposed to 2, 4-D always goes blind.
(c) A cat that has been exposed to 2, 4-D can go blind.
(d) A cat that has been exposed to 2, 4-D goes blind.

The generic use of the indefinite NP in (11)(d), Heim proposes, can be regarded as a special case where the necessity operator is restricted by the indefinite NP. Accordingly, (11)(d) is assigned an LF tree of the form in (12), which is semantically interpreted as in (13), the necessity operator providing the generic force of the sentence.

(12)

Heim thus assimilates indefinite subjects of generic sentences to the antecedents of conditionals through the generalization that both are related to the nuclear scope by a quantificational operator. (11)(d) is accordingly assigned an interpretation corresponding to that given in the relational representation in (13), comparable to that in (10), repeated below.
This proposal by Heim, the application of which was confined to indefinites modified by a relative clause (what Heim terms ‘restrictive indefinites’), is extended by Wilkinson (1987), Diesing (1988), Gerstner and Krifka (1987), Krifka (1987, 1988), Kratzer (1988), and Schubert and Pelletier (1989),7 who generalize the hypothesis to the range of English generic sentences containing indefinite singular and bare plural NPs, using representations similar to those seen in (13).

In these accounts, the question of the nature of the operator is generally circumvented by positing a generic operator, whose properties remain to be defined.8 Nevertheless, some observations may be in order. First, the operator is modal and is likely to be some form of necessity operator. It will be recalled that generic sentences are ‘law-like,’ (Dahl, 1975; Pan and Nunberg, 1975) in that they relate not to coincidental facts of the real world, but to properties that are essential to the entity under discussion, in other words, to properties that hold in all alternative worlds that approximate some stereotype in the real world. Second, the operator has a universal-like force, which Heim derives from her necessity operator, but which can be

7 Schubert and Pelletier diverge from the other accounts in that they attempt to treat indefinite English NPs as inherently existentially quantified.

8 Krifka and Gerstner (1987) and Krifka (1987) employ a DEFAULT operator,
contextually defeated to permit a wide range of exceptions from the norm. These alone would seem make a good case that the operator is indeed Heim’s necessity operator. As in the case of conditional sentences, the best evidence that a necessity operator is involved will ultimately stem from the explanatory power gained from postulating a sentential operator that can quantify universally over a variety of variable types.

Since my primary concern in this dissertation is with the syntactic derivation of representations such as those in (13), I will follow the convention of abstracting away from the numerous semantic and pragmatic issues raised by the use of a necessity operator, and will employ the strategy of labelling an operator with the above properties Gen. I will presume it, nevertheless, to be an integral part of the modal system of language.

It is my contention that this quantificational model of generic sentences, based on Heim’s 1982 proposal, is essentially correct in its broad outlines, and moreover finds syntactic evidence from Japanese. The utility with respect to English is demonstrated by the fact that the model correctly predicts, as Diesing (1987) observes, that sentences like (14) may have the multiple interpretations shown in (15).

(Following Kratzer (1988), l is a spatio-temporal locative variable.)

(14) Firemen are available

---

9 Dahl (1975) anticipates Heim (1982) by proposing that generic sentences contain at least one necessity operator.
(15)  
(a) \( \exists_{x,1} [\text{firemen}(x) \& \text{available}(x,1)] \)  
(b) \( \text{Gen}_{x,1} [\text{firemen}(x) \& \text{here}(l)] [\text{available}(x,1)] \)  
   \textit{Firemen, here, in general, are available.}  
(c) \( \text{Gen}_{l} [\text{here}(l)] \exists_{x}[\text{firemen} \& \text{available}(x,1)] \)  
   \textit{Here, generally, there are firemen available.}  

Carson's 1977 predicational model predicts only one construal here, namely the generic construal representable in a quantifi­
cational account as in (15)(b). In (15)(a), which is unpredicted in  
Carlson's predicational model, there is no operator \text{Gen}. The bare  
plural subject is within the scope of existential closure over the Nu­
clear Predicate, and therefore is interpreted as existentially quanti­
tied. Thus the model predicts that it is possible for an indefinite  
singular NP in English not to receive a generic interpretation. In  
(15)(b), the bare plural NP restricts \text{Gen} and thereby receives a  
generic construal; in (15)(c) an implicit locative expression, intro­
duced in the discourse, restricts \text{Gen}, while the bare plural NP  
remains in the Nuclear Scope and receives an existential construal.  

3.1.4 A Note on the Relational Theory of Quantification  

In the model of generic sentences described above no single  
syntactic constituent can be identified as a quantifier. Instead, we  
find an operator with sentential scope that is construed as relating  
an indefinite or bare plural NP and the remainder of the sentence.  
Van Benthem (1986) attempts a uniform semantic analysis of deter-
miners and other quantificational structures, by generalizing all quantification to relations. Specifically, he proposes that the denotation of a sentence containing a quantifying determiner in its subject NP denotes a relation between the property denoted by the noun to which the determiner is attached, and that denoted by the predicate (in his model, a VP).

(16) \[\text{Det} \ (\text{Noun}), \text{VP}\]

Applied to a sentence like (17), this yields the relation seen in (18).

(17) Every man came

(18) \[\text{every} \ (\text{man}), \text{came}\]

i.e., the property \([\text{man}]\) stands in the \([\text{every}]\) relation to the property came.

Using this analysis, van Benthem is able to provide an account of NP quantification that retains the insights of Barwise and Cooper (1981) while unifying quantifying determiners with the Lewis/Heim quantificational adverbial operators. Thus the conditional operator denotes a 'relation between sets of antecedent and consequent occasions' (van Benthem, 1986: 72), i.e., as in (19):

(19) \[\text{Operator} \ (\text{Antecedent}), \text{Consequent}\]

Since the quantificational analysis of generic sentences assimilates generic sentences to conditionals, we can attempt to
define Gen along the same lines as denoting a relation between the meanings of the restrictive term (i.e., GRC) and the nuclear scope. In the case of Gen, the denotation of the restrictive term may vary in type: in some cases it may be some set of intensional individuals, or in the case of habitual interpretations it may be an arbitrary individual.

(20)  [[Gen]] ([[Generic Related Constituent]], [[Nuclear Scope]])

Partee (1989) distinguishing between two main types of quantification, D(eterminer)-Quantification and A(dverbial-) Quantification, suggests that the relational conception of quantification set forth by van Benthem (1986) allows us to view all forms of quantification as a tripartite relation between three components—Operator, Restrictive Term, and Nuclear Scope—as represented in the schema in (21). The difference between D-Quantification and A-Quantification is then reduced to a distinction in surface syntactic forms, the quantificational interpretation of these two types being similar at Logical Form and subsequent levels of interpretation.

(21)
3.2 Wa-Marking and the Relational Model

3.2.1 Krifka's Relational Model

We are now in a position to return to the issues discussed in Chapter Two. A significant argument in favor of the quantificational model sketched above is that it can accommodate non-NP constituents in generic and habitual sentences. It will be recalled that a sentence such as (22) has a preferred interpretation that is not predicted in a subject-predicate model such as that of Carlson (1977), while its Japanese counterparts, shown in (23) and (24), are unambiguous by virtue of *wa*-marking and sentence initial position of the GRC.

(22) Hurricanes arise in this part of the Pacific.

(23) Taiheiyoo-no kono hen-de wa, taihuu-ga hassei su-ru
Pacific Ocean-GEN this part-LOC-TP typhoon-NOM occur-IMP

‘In this part of the Pacific, (in general) typhoons occur.’

(24) Taihuu-wa, Taiheiyoo-no kono hen-de hassei suru.
Typhoon-TP Pacific Ocean-GEN this part-LOC arise-IMP

‘Typhoons occur in this part of the Pacific.’

As discussed in Chapter Two, the fact that the locative WMC is preposed on the preferred (23) suggests that the S-Structure configuration maps directly onto the LF configuration. Let us assume for the sake of argument that the WMC has undergone movement to the Specifier Position of CP at S-Structure. (Specific arguments for movement, and for Spec CP as the S-Structure landing site in Japanese
will be offered in Chapters Four and Five respectively.) The S-Structure configuration maps directly onto the LF configuration. The relation between the WMC and the nuclear predicate in (23) can then be represented on the present model by means of the LF structure in (25), where the WMC restricts the invisible operator Gen. Since quantification by an adverbial operator is distinct from quantification by a determiner, there is now no obstacle to a quantificational account that involves PPs. Note that, since the location referred to by the PP is in this case anchored in the real world, the Gen operator can only quantify over implicit occasions in (25) and not locations. In other words, a variable in the restrictive term need not be quantified by Gen; since the operator defines a relation, we can say that [[in this part of the Pacific]] stands in the [[Gen]] relation to [[hurricanes arise]].

(25)

```
      CP'
   ---
     Gen
      CP
     ---
    Spec
      Taiheiyou no kono hen de wa

      IP'
   ---
     IP
   ---
   C'

      C''
   ---
    taihuu ga t hassei suru
```

If this characterization of the LF structure of (23) is correct, the quantificational hypothesis suggests that the LF configuration of the
Japanese sentence is matched by a comparable tree for English in which the GRC moves to the Spec CP position only at Logical Form. This is shown in (26).

(26)

\[
\begin{array}{c}
\text{Gen} \\
\text{CP'} \\
\text{Spec} \\
\text{CP} \\
\text{Spec} \\
\text{CP} \\
\text{In this part of the Pacific} \\
\text{IP'} \\
\text{IP} \\
\text{hurricanes arise} \\
\end{array}
\]

Krifka and Gerstner (1987) and Krifka (1988) observe that the relational interpretation of the quantificational structure of generic sentences correlates with the bipartite information structures expressed in the functionalist literature in terms of dichotomies such as theme/rheme (Firbas, 1964; Halliday, 1967), given/new (Chafe, 1972, 1976; Kuno, 1972, 1973 a,b, 1978b), and background /focus.\(^{10}\) Krifka (1988) points out that the placement of sentence accent determines which interpretation is assigned to (22):

(27) Hurricanes \(\text{lf arise in this part of the Pacific.}\)

(28) \(\text{lf 'Hurricanes arise' in this part of the Pacific.}\)

\(^{10}\) We have already noted Milsark's (1974) observation that in (22) the existential construal of the subject is eliminated when \(\text{hurricanes}\) is the 'topic.'
(27) corresponds to the less plausible of the two readings, as­
assigning the generic construal to the subject; (28) to the more plausible
reading in which the subject is construed existentially. To account
for this conjunction of intonational facts and the interpretation of the
sentences, Krifka (1988) proposes a unification of three sets of struc­
turally analogous proposals: (i) Carlson’s proposal that generic sen­
tences be treated as a relation, (ii) Heim’s analysis of generic sen­
tences that we saw in Chapter Two, and (iii) some relational treat­
ments of focus (e.g., Cresswell and Stechow, 1982). Krifka employs a
special relational operator, GEN, which has the same modal and
quantificational properties as Gen, but is explicitly defined as a back­
ground/focus relational operator.11 GEN takes two arguments, a
restrictive term corresponding to the ‘background’ and a nuclear
scope corresponding to the focus part of the sentence.12

11 Although Krifka declines to be explicit on the matter, the GEN operator is in
effect a quantificational version of the relational FOC operator that he employs to
explicate such examples as (i):

(i)    Susan [f showed] Angela [f photos of her boyfriend]
(ii)   FOC[x,y; z] [(x=Susan ∧ y=Angela), [show(x,y,z) ∧ photos(z, x's boyfriend))]
(iii)  FOC[x,y;] ([(x=Susan ∧ y=Angela), ∃z [show(x,y,z) ∧ photos(z, x's boyfriend)])

Krivka’s identifying his GEN operator explicitly as a background/focus operator is
highly problematic in that it cannot account for the possibility that a GRC may
receive a constituent focus.

12 Kratzer (1988) independently proposes a structure similar to that posited by
Krivka (1988), suggesting that the ambiguity may be captured within a quantifi­
cational model, if one assumes Stage-Level predicates contain a ‘Davidsonian’
spatio-temporal locative variable. On the GRC reading for the PP corresponding to
the locative variable, the PP is outside the nuclear scope and under the generic
operator at Logical Form. Kratzer accordingly assigns the following two semantic
(29) \(\text{GEN}[x;] (\text{hurricanes}(x), \text{in-this-part-of-the-Pacific}(\text{arise})(x))\)

'if \(x\) are hurricanes, then usually \(x\) arises in this part of the Pacific.'

(30) \(\text{GEN}[P; x] (P = \text{in-this-part-of-the-Pacific}, \text{hurricanes}(x) \land P(\text{arise})(x))\)

'if \(P\) is the inside of this part of the Pacific, then usually there are hurricanes that arise there.'

As the paraphrases beneath (29) and (30) indicate, the structures are interpreted as meaning, \textit{if the background element is true, the focused part is usually also true.} Krifka's account is implicitly adopts a conditional model of these discourse relations, a position that finds an antecedent in Dahl (1969), who analyzes 'themes' as the antecedents of material conditionals and offers an analysis of English indefinite singular and bare plural subjects of generic sentences that anticipates in its broad outlines the model of Heim (1982).\(^{13}\) We representations to (22), corresponding to the less- and more- plausible readings respectively. (G represents her generic operator.)

(i) \(G_x [\text{hurricane}(x)] \exists I [\text{this part of the Pacific} (l) \land \text{arise}(x,l)]\)

(ii) \(G_I [\text{this part of the Pacific} (l)] \exists_x [\text{hurricane}(x)] \land \text{arise}(x,l)]\)

In (i), the subject is the restrictive term in Kratzer's semantic representation, while the locative constituent remains within the VP, so the subject receives the less-plausible generic-related reading. In (ii) the locative constituent has been raised out of the nuclear scope, while the bare plural subject remains within the nuclear scope. Kratzer adopts the proposal of Diesing (1987) that the existential construal of indefinite singular and bare plural subjects in stage-level predicates results from reconstructing the subject in the VP at LF where it. One minor mystery of this account is that the PP must be raised at LF simultaneously with the lowering of the subject.

\(^{13}\) Dahl (1969) generalizes his conditional analysis of themes to non-generic NPs and 'topics,' assigning both generic sentences like (i) and non-generic
may also note in this context Haiman’s (1978) proposal for a unified account of ‘topics’ and conditional antecedents. Haiman, observing a ‘convergence’ between Stalnaker’s account of conditionals, and an independent definition of topic proposed by Chafe (1976),\footnote{‘Typically, it would seem, the topic sets a spatial, temporal, or individual framework within which the main predication holds.’ Chafe (1976: 50).} proposes the following unified definition of conditionals and topics.

(31) Conditionals, like topics, are givens which constitute the frame of reference with respect to which the main clause is either true (if a proposition) or felicitous (if not). (1978: 564)

Yet, although the insight that one can capture the discourse functional dichotomies in terms of a relation among constituents is, I believe, fundamentally correct, I believe also that Krifka errs when he defines GEN explicitly as a focus operator that relates a background element and some focused constituent. We have already seen Japanese evidence from Chapter Two that GRCs can, albeit under limited circumstances, be the target of exhaustive listing focus (i.e., the cases where in response to constituent questions, GRCs are marked with nominative ga). The exact semantic nature of constitu-

\begin{quote}
(i) Lions growl
(ii) Mary, I don’t like her
(iii) (x3 is a lion) \( \supset \) (x3 growls)
(iv) (x3 is Mary) \( \supset \) ((x1 is the speaker) \( \supset \) (x1 doesn’t like x3))
\end{quote}
ent focus is not satisfactorily accounted for anywhere, and the matter must be left to detailed exploration on some other occasion. I will surmise, however, that the non-constituent focus observed in the examples above is an inherent manifestation of the nuclear scope, an automatic inference that derives from its not being 'backgrounded' by placement in the restrictive term. For these reasons, I will not adopt Krifka's focus operator GEN, but will continue to employ Gen, which I treat as part of the modal system of the sentence.

Second, Krifka hypothesizes that GRCs are 'collected' in the restrictive term, but is not explicit as to how this might be done. In his notation, seen in (29) and (30), elements that are related by GEN are ordered and encoded diacritically on the operator. This is partly perhaps because, in English, intonational contours provide little evidence for movement; Japanese, however, affords rather more evidence via wa-marking and sentence-initial position of the GRC.

The preposing of WMCs in Japanese with consequences for the semantic interpretation of sentences may be taken to indicate that at Logical Form, the theme/rheme, given/new, background/focus dichotomies may be captured by a tripartite structural relation expressed at Logical Form. Partee (1989) proposes that the tripartite analysis of quantificational structures into an operator, a restrictive term, and a nuclear scope as shown in (21) above might also be extended to such functional notions. It is easy to see how the GRC in a generic sen-

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15 The most successful that I am aware of is that of Szabolcsi (1981), who analyzes the salient semantic property of focus as exhaustive listing.
tence, as the restrictive term, defines a domain over which the operator ranges, and is therefore open to construal as 'theme' or background/given information. Thus rather than attempting to define the functional dichotomies in terms of a focus relation or vague discourse notions, a structural conception of Logical Form such as that illustrated above may ultimately permit us to define a much more general notion of 'theme' as an element that is outside the nuclear scope at Logical Form in both Japanese and English and restricts some (possibly the highest) sentential operator. Since Gen has modal properties, and is identified in Heim (1982) as a necessity operator, it is conceivable that the operator in non-generic sentences might be some related but non-quantificational form of epistemic necessity, with sentential scope.\textsuperscript{16} However, it is only in generic sentences that we have any substantive evidence for this hypothesis.

3.2.2 Kuno's Problems Revisited

The relational analysis of locative GRCs now permits a relatively straightforward account of the sentences, observed in Chapter Two, that were problems for Kuno's discourse functional treatment of \textit{wa}-marking. Since \textbf{Gen} is an adverbial operator that relates two

\textsuperscript{16} One suspects that this may be some sort of epistemic operator associated with belief or propositional attitudes. We may also note the occasional suggestions in the Japanese semantic literature to the effect that \textit{wa} is a necessity operator (e.g., Sakai, 1981; Shirai, 1985). The consequences of such a treatment have not been fully explored.
arguments, the possibility of quantification over non-NP elements as
temporal PPs and no ni clauses is predicted in the model. The role of
thematic wa in this conception is simply to indicate that the consti-
tuent it marks is outside the nuclear scope and in the restriction of
the operator at Logical Form (i.e., in functional terms it is the theme
of the sentence.)

3.2.2.1 Temporal Clauses

In Chapter Two, it was observed that marking a temporal
clause with the particle wa triggered a form of weak universal
quantification over the WMC.

(32) Beegeru-o kau toki-ni, Nyuu Yooku Taimuzu-o
     Bagel-ACC buy-IMP time-P PN-ACC
     kaimasu
     buy-IMP

'I buy the New York Times when I buy bagels.'

(33) Beegeru-o kau toki-ni-wa, Nyuu Yooku Taimuzu-o
     Bagel-ACC buy-IMP time--P-TP PN-ACC
     kaimasu
     buy-IMP

'When(ever) I buy bagels, I buy the New York Times.'

On the version of the quantificational model outlined in the
preceding section, the distinction in meaning between (32) and (33)
can be captured in a relatively straightforward way by the represen-
tations in (34) and (35). (For simplicity, I use English glosses in these
representations.) Both sentences being habitual, both must be presumed to contain a Gen operator, the difference between the two stemming from the fact that in (34) the PP must be within the nuclear scope, and hence existential closure, but in (35) the WMC has been raised out of the nuclear scope into a position where it is the restrictive term for the Gen operator. (The variable t is a temporal variable representing occasions.)

(34) Gen $\exists_t [I\ buy\ the\ NYT\ at\ t\ \&\ t:\ when\ I\ buy\ bagels]$ \hspace{1cm} (= 32)

(35) Gen $[t:\ when\ I\ buy\ bagels] \ \exists [I\ buy\ the\ NYT\ at\ t]$ \hspace{1cm} (= 33)

Wa-marking, it seems, has the crucial function in such sentences of indicating that a constituent is outside the nuclear scope and within the restriction on the operator. In support of this analysis, it may be observed that itumo ‘always’ may also function as overt operator.

(36) Beegeru-o kau toki-ni-wa, itumo Nyuu Yooku
Bagel-ACC buy-IMP time-p-TP always

Taimuzu-o kaimasu
PN-ACC buy-IMP

‘When(ever) I buy bagels, I always buy the New York Times.’

(37) ALWAYS$_t$ [t: when I buy bagels] $\exists [I\ buy\ the\ NYT\ at\ t]$

In matrix perfective sentences, where wa-marking of the GRC is obligatory, the temporal PP must be moved out of the nuclear scope at S-Structure in order to establish the generic relation. When the temporal PP is not a WMC, on the other hand, the sentence fails to
receive a generic construal, in which case the PP may be safely presumed to be within the scope of existential closure.

(38) \[
\text{[IP hareta hi-ni mizuumi-ni itta.]} \\
\text{fine day-P lake-P go-PRF}
\]

‘One fine day we went to the lake.’

(39) \[\exists [t: \text{fine day} \& \text{went to the lake at } t] \]

When the PP bears the particle *wa*, on the other hand, it may become the GRC by movement out of the nuclear scope into a higher position in the sentence. In this new position, it is no longer within the scope of existential closure but restricts instead the Gen operator at Logical Form, yielding the semantic interpretation shown in (41).

(40) \[
\text{[Hareta hi-ni]-wa [IP } t_i \text{ mizuumi-ni itta].} \\
\text{fine day-P-TP lake-P go-PRF}
\]

‘We went to the lake whenever it was fine.’

(41) \[\text{Gen } [t: \text{fine day}] \exists [\text{went to the lake at } t] \]

Essentially the same pattern may be observed when the temporal WMC is accompanied by an overt adverb of quantification in the form of *itumo*: the WMC is presumably moved into a position where it restricts the adverb, and conversely the adverb is able to quantify over the bare temporal variable introduced by the PP.

(42) \[
\text{[Hareta hi-ni]-wa itumo [IP } t_i \text{ mizuumi-ni itta].} \\
\text{fine day-P-TP always lake-P go-PRF}
\]

‘We always went to the lake when it was fine.’
(43) **ALWAYS \([t: \text{fine day} ] \) \(\exists \ [\text{went to the lake at } t] \)**

It by no means evident exactly why perfective sentences should require an overt WMC to licence a habitual interpretation, and I will not pursue such issues here, since this would appear to demand a full scale treatment of a semantics of tense and a theory of events in Japanese, matters beyond the scope of this investigation. It is clear, however, that the behavior of the WMCs in the above examples is inexplicable within a purely discourse-based account of *wa*-marking such as that of Kuno (1973a,b). It is also clear that a quantificational account of generic sentences, in which *wa*-marked `GRCs are restrictions on the generic operator, permits a relatively straightforward account of the semantic interpretation of *wa*-marked temporal PPs in habitual sentences.

### 3.2.2.1 *No ni* Clauses

The quantificational model also offers a solution to the puzzle posed by *no ni* clauses. In the case of ‘bare’ *no ni* clauses, the adjunct clause must be analyzed as being within the nuclear scope, including whatever operators close off that clause. In (44), there appear to be two relevant operators, existential closure and a necessity operator which I will informally represent as *must*. (*Must* can be interpreted as a form of physical necessity operator, but—although a potentially complicating factor—that possibility is irrelevant to our present concerns.)
In order to make omlettes, you are going to have to break eggs.

The existential operator in (45) is responsible for the existential interpretations for the NPs in the two clauses, and must be within the scope of *must* for the relevant interpretation to hold. Wa-marking, however, results in a significantly different interpretation for (46) below, where we may now assume that moving the *no ni* clause outside the nuclear scope triggers a generic interpretation for the sentence.

In order to make omlettes, one must break eggs.

The analysis above also allows us to account for the arbitrary reference of the EC in (48). Takezawa (1987:81), observing a problem with Kuroda's (1983) proposal that the EC in (48) below is PROarb,
owing to the apparent tensedness of the embedded clause, suggests that subject ECs in Japanese may sometimes be arbitrary reference pronouns comparable to English *one*, German *man*, or French *on*.

(48) \[ e \ taima-o \ \text{kau koto]-wa kinzirarete \ iru \]  
\[ \text{marijuana-ACC buy CMP-TP forbid-PASS-GER be-IMP} \]  

'Buying marijuana is forbidden.'

These overt arbitrary reference pronouns may only occur in tensed clauses and in subject position. Moreover, in English the use of *one* is licensed only in the context of a modal auxiliary (Chomsky, 1986b: 117), or a generic sentence, e.g.,

(49) One shouldn’t do such things.  \[ \text{[arbitrary]} \]  
\[ \text{cf. one was here yesterday.} \quad \text{[specific]} \]  
(50) One doesn’t do that around here.

This suggests the possibility that Japanese subject ECs may be arbitrary reference just in case they are in modal contexts. Kuroda’s example in (48), it will be noted, is a generic sentence, and since *Gen* must be part of the modal system of language, we may include generic sentences within the class of modal contexts. This allows us to surmise that in a sentence like (46), repeated below, the clause containing the embedded EC is raised into the highest position in the sentence at S-Structure, where it restricts *Gen* at LF and where the EC is unable to take an antecedent anywhere within the sentence. The LF of (46), repeated below, might then be assumed to be as shown in (51), with the WMC in the Specifier of CP position, so that the EC
would either have to take a sentence-external antecedent or arbitrary reference in the case of a generic sentence. Once again, the quantificational model is able to offer a solution to the analysis of WMCs in generic sentences where Kuno's model otherwise fails.

(46) 
\[
\begin{array}{llllll}
\text{omuretu-o tukuru}
\end{array}
\text{no-ni-wa,}
\begin{array}{llllll}
\text{omlette-ACC make-IMP CMP-P-TP}
\end{array}
\begin{array}{llllll}
\text{waranakereba naranai].}
\end{array}
\begin{array}{llllll}
\text{break-NEG-CND do-NEG-IMP}
\end{array}
\begin{array}{llllll}
\text{egg-ACC}
\end{array}
\]

'In order to make omlettes, one must break eggs.'

(51) 

3.3 Interpretation of Wa-Marked NPs

3.3.1 Thematic Wa and (In)definiteness

The quantificational model of generic sentences provides a unified account of conditionals, generic sentences, and discourse notions such as theme-rheme relations that amalgamates all the
above categories with quantifiers in tripartite relational structures. This model presumes a very different notion of theme from that espoused by Kuno (1972, 1973 a,b) in that the notion of theme may now be structurally defined as a constituent that restricts a sentential-scope operator at logical form, rather than in terms of the information status of some referent in a discourse. By the same token, the model allows us to treat thematic *wa*-marked NPs in a very different fashion from that presumed in Kuno's account.

It will be recalled that Heim breaks from conventional model-theoretic semantics by analyzing English indefinite NPs as having no inherent existential quantificational force. She extends this treatment to definite NPs so that *the man* receives an identical representation to that of *a man*, i.e., as predicated of the bare variable in *man(x)*. To account for the distinction between definite and indefinite NPs, Heim then postulates the existence of a post-LF interpretative component, which she terms Discourse Files, at which the status of referents in the discourse can be tracked. Heim's model can viewed as having four levels of interpretation, as shown in (i), adapted from Landman (1986: 100).

(52)

\[
\begin{array}{c}
\text{Surface Syntax} \Rightarrow \text{Logical Form} \Rightarrow \text{Discourse Files} \Rightarrow \text{The Real World}
\end{array}
\]

Logical Form can be regarded in a conventional manner as representing scopal information available at S-Structure. Heim's Discourse Files—unlike Kuno's discourse registry, which appears to
be no more than a list of referents—are structured representations that amalgamate the semantic information disambiguated at LF with any information concerning each variable in the preceding discourse. Only when the information is collected at the level of the Discourse Files can it be mapped semantically to the Real World. Definiteness and indefiniteness in this model are reduced to the status of a variable with respect to the discourse file: an English NP is marked for definiteness at S-Structure if it is an oid (familiar) variable with an established referent in the Discourse Files, and for indefiniteness if it is a new (unfamiliar) variable with no established referent in the files.17

This treatment transfers readily into Japanese, where semantic modelling within both the framework of Montague grammar and the more recent Generalized Quantifier framework of Barwise and Cooper (1981) has has made little progress, partly due to the fact that Japanese regularly fails to employ lexical or morphological markers that correspond to the determiners familiar in European languages.18 In particular, the uniqueness implicature of definite determiners, which has been central to the semantic analysis of English NPs, is regularly underdetermined by morphological

17 It is obvious that this model is too simple, even for Heim (see the extensive discussion of ‘accommodation’ in Chapter 3 of her dissertation); it is not the concern of this dissertation to debate the representation of definiteness in English.

18 The closest counterparts are various series of deictic markers, notably the *kono* (‘this’), *sono* (‘that nearby’) and *ano* (‘that yonder’) series.
features in Japanese. Consider (53), where the interpretation of *inu* ‘dog’ may be determined only by the context in which the sentence is uttered.

(53) Inu-ga hoeta.
    dog-NOM bark-PRF

(i) A dog barked.
(ii) The dog barked.

English represents the uniqueness implicature associated with (53)(ii) by means of morphological marking at S-Structure. Japanese does not, even though that interpretation is also possible. Heim’s model of (in)definiteness, on the other hand, explicitly predicts that there might be languages that lack determiners (1982: 267), and thus offers a more satisfactory alternative for our purposes. It is evident from the behavior of non-NP thematic WMCs in Chapter Two that such considerations as anaphoricity, fail to supply a unified account of thematic *wa*-marking across different constituent types. All we need claim then is that thematic *wa* has no inherent relation with any notion of definiteness, and that thematic WMCs like other Japanese NPs must be interpreted on the basis of their status at the level of the Discourse Files.

GRCs that are thematic *wa*-marked NPs, on this account, are not referentially ‘anchored’ by having an antecedent available in the

19 A lack of determiners would seem to predict typologically, that a language selects for adverbial quantification of various kinds. This, in fact, appears to be the case in Japanese, where even numeral quantification is performed by floating quantifiers.
file. In fact, they cannot be referentially anchored, since as was observed in Chapter One, generic statements are never about extensional entities, but are concerned with the properties of intensional entities, for which specific referents cannot be established. Contra Kuno (1973a), therefore, it is possible to analyze wa-marked NP subjects in generic sentences as referring to arbitrary individual members of a kind, with the Gen operator binding the variable introduced by that NP with quantificational effect. On this account the Logical Forms of (54) and (56) are presumed to be as shown in (55) and (57) respectively, with the operator Gen having scope over the sentence. Discussion of the S-Structure configurations involved will be postponed to Chapter Five, where I will argue that the WMC subjects are in the Specifier of CP position.

(54) Kuzira-wa in'-o funda uta-o utau.
Whale-TP rhyme-ACC tread-PRF song-ACC sing-IMP

'Whales sing songs that rhyme.'

(55) Geni [kuziraj-wa ß [i̲p̲t̲i̲ in' -o hunda uta-o utau]]

(56) Kuzira-wa kasikoi.
whale-TP smart-IMP

'Whales are smart.'

(57) Geni kuzira1-wa [i̲p̲e̲i karika1]

These in turn, are interpreted as in (59) and (58) respectively,

(58) Genx [whale(x)] ß [songs that rhyme(y) & sings (x,y)]

(59) Genx [whale(x)] [smart(x)]
which may be paraphrased as generally, if x is a whale it sings songs that rhyme and generally, if x is a whale, then x is smart. In other words, the thematic WMC in (55) and (56) is treated as the counterpart of an English indefinite NP, i.e., as a bare variable that may be bound by an adverbial operator that relates two parts of a sentence. A precursor to this treatment is found in Kuroda (1965) who proposes that all WMCs should be analyzed as semantically equivalent to the antecedent of a conditional.20

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20 Kuroda employs a notion that he terms 'predication,' which he defines as comprising a premise and a conclusion of the form:

(i) If x is A, then x is B (is true) (Kuroda, 1965: 36)

Kuroda's notion of predication is bound to his attempt to account for the difference between the two Japanese sentences in (ii) and (iii) by distinguishing between what he terms 'descriptions' and 'judgments.' (ii) below is a non-predicational description, while (iii), where the subject is wa-marked, is a predicational judgment about the status of John, with the semantic structure given in (iv):

(ii) John-ga hon-o kat-ta
    PN-NOM book-ACC buy-PERF
    'John bought books.'

(iii) John-wa hon-o kat-ta
    PN-WA book-ACC buy-PERF
    'John bought books.'

(iii) if x is John, that x bought the book is true.

Kuroda's account conflates of two distinct lines of thought, both of which have reputable antecedents in Japan's indigenous kokugogaku linguistic tradition. The first is the concept of predication, in which a WMC is analyzed as subject (syugo) and the remainder of the sentences is treated as predicate (zyutugo). The second is the notion that wa-marking entails some form of epistemic judgment, an idea that traces back to at least Matsushita (1928), who classified obligatorily wa-marked individual-level predicates as handan-bun 'judgmental sentences.' For an extensive, and sympathetic exposition of Matsushita's analysis, see Shibatani (1990). (Maynard (1987) cites Mio (1948) as distin-
The present model differs from Kuroda's 1965 treatment in that it does not seek to equate WMCs directly with the antecedents of conditional sentences, but regards at least thematic WMCs as members of a rather broad class of relational structures to which the antecedents of conditionals—and probably also a number of other structures—belong. (See the appendix of this chapter for a discussion of the conditional interpretation wa-marking of -te form gerunds.) In adopting the quantificational model of generic sentences, I come down on the side of Kuroda (1965) rather than Kuno (1972, 1973a,b) in allowing that thematic WMCs need not necessarily have a specific referent.

3.3.2 Wa-Marking and (Indefinite) Generics

In the face of the general acceptance of Kuno's (1973a,b) model of thematic wa among generative linguists, further argumentation is needed to show that thematic WMCs are bare variables. Evidence for this position may be adduced from a diagnostic device employed by Gerstner and Krifka (1987) and Krifka (1987) to distinguish what they

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Kuroda’s treatment has stood virtually ignored, and Kuroda himself appears to have abandoned the conditional hypothesis in his subsequent work (esp., Kuroda (1972)), retaining only the concepts of predication and judgment. This may be because his later theory extends the notion of judgement to all sentence types, rendering the conditional analysis moot. Tonoike (1989) attempts to revive Kuroda’s hypothesis by using conditional paraphrases to interpret LF representations.
dub D(efinite)- and I(ndefinite)-generics. (Although I will not adopt their analysis, it is nevertheless useful to illustrate how thematic WMCs behave in the manner of English indefinites.) In the case of D-Generics, which prototypically involve a definite NP in English, Gerstner and Krifka claim, genericity is a consequence of NP-internal properties. These occur, for example, in prototypical kind-referring predicates of the sort in (60), from which indefinite singular NPs are canonically precluded.

(60)  (a) Mammoths are extinct
     (b) The mammoth is extinct.
     (c) *A mammoth is extinct.

I-Generics, on the other hand, typically take indefinite NPs to the exclusion of definite, and participate in tripartite quantificational structures under a generic operator. The key diagnostic for this class of generic constructions is the possibility of reference to members of non-well-established kinds. When a generic sentence relates to well-established (familiar) kinds, the entire range of English determiners is possible and in Japanese both simplex WMCs and overtly generic to **iu mono** phrases may be employed:

(61)  (a) The lion is ferocious
     (b) A lion is ferocious
     (c) Lions are ferocious

(62) Raion-wa doomoo-da.
    Lion-TP ferocious-COP
'Lions are ferocious.'

(63) Raion to iu mono-wa doomoo-da
    Lion QT say thing-TP ferocious-COP

'Lions are ferocious.'

In the case of non-well-established kinds, the NPs are modified by relative clauses to create a set of entities that are ad hoc, and cannot be analyzed as either kind-referring constants (in the manner of Carlson) or in the permanent discourse registry (in the manner of Kuno). English definite NPs are fairly marginal in such cases.

(64) (a) A lion that has lost its sight dies quickly.
    (b) Lions that have lost their sight die quickly.
    (c) ??The lion that has lost its sight dies quickly.

Corresponding Japanese generic sentences, however, are well-formed with both NP-wa and an overt genericity in the form of NP to iu mono-wa. (See the appendix to Chapter Two for discussion of to iu mono.)

(65) Siryoku-o usinatta raion-wa hayazini suru.
    Eyesight-ACC lost lion-TP early-death do-IMP

'A lion that has lost its sight, dies quickly.'

(66) Siryoku-o usinatta raion to iu mono-wa hayazini
    Eyesight-ACC lose-PRF lion CMP say thing-TP early-death
    suru.
    do-IMP

'A lion that has lost its sight dies quickly.'
A salient characteristic of this class of sentences is that they readily allow paraphrases in which the restrictive relative clause is replaced by a conditional clause. Here, too, Gerstner and Krifka observe, definite NPs are less than acceptable on the generic reading. 21

(67) (a) If it loses its sight, a lion quickly dies.
(b) If they lose their sight, lions quickly die.
(c) ??If it loses its sight, the lion quickly dies.

A WMC may again be the subject of equivalent sentences in Japanese.

(68) Raion-wa, siryoku-o usinaeba, hayazini suru.
Lion-TP eyesight-ACC lose-CND early-death do-IMP

'A lion, if it loses its sight, dies quickly.'

(69) Raion to iu mono-wa, siryoku-o usina-eba,
Lion CMP say thing-TP eyesight-ACC lose-CND
hayazini suru.
early-death do-IMP

'A lion, if it loses its sight, dies quickly.'

Japanese thematic WMCs are thus possible in a range of sentences where only indefinite NPs are grammatical on the interpretation intended. This suggests that they may be indeed be

21 Krifka and Gerstner rule out the possibility of definite NPs in these examples. I do not find them altogether unacceptable, however.
analyzed in the same manner as English indefinite NPs, i.e., as restricting a generic operator.

### 3.3.3 Individual-Level Predicates

A second possible argument that the thematic WMC in a sentence like (56), repeated below, need not have a definite reference rests on the fact that the sentence contains what Carlson (1977) terms an **INDIVIDUAL-LEVEL PREDICATE**.

(56) Kuzira-wa kasikoi.  
    whale-TP smart-IMP  
    'Whales are smart.'

Individual Level Predicates may be regarded as denoting a relatively permanent property of the individual in question, and contrast with **STAGE-LEVEL PREDICATES**, which refer to relatively transient properties. In Japanese, all predicates based on adjectives are Individual-Level, there being none that are inherently Stage-Level.22 (Other syntactic VP types do not correspond systematically

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22 There are no adjectival predicates like English *available*, for example. This observation is due to Yanagida Yuko, who confirms my suspicions on this matter. It should noted that even adjectival predicates in Japanese can permit a Stage-Level reading under appropriate contextual conditions.

(i) Taiyoo ga akai!  
    sun-nom red  
    'Look, the sun is red!'

It should also be noted many *na*-nominal predicates (predicate taking the *na* form of the copula *da* when used attributively) regularly allow stage-level
with the Stage/Individual distinction.\textsuperscript{23) Diesing (1987) observes that Individual Level predicates of Japanese, when used in matrix clauses, must take a thematic \textit{wa}-marked subject (unless that subject is focused). (70) and (72), translated by (71) and (73) respectively, are ambiguous between anaphoric and generic readings for the WMC:

\begin{verbatim}
(70)   Inu-wa    kasikoi.
       Dog-TP    intelligent-IMP

(71)  (a)  The dog is intelligent.  \textit{[definite and generic]}
       (b)  Dogs are intelligent.  \textit{[generic]}
       (c)  A dog is intelligent.  \textit{[generic]}

(72)  Kuzira-wa  honyudoobutu da
       whale-TP   mammal-COP-IMP

(73)  (a)  The whale is a mammal.  \textit{[definite and generic]}
       (b)  Whales are mammals.  \textit{[generic]}
       (c)  A whale is a mammal.  \textit{[generic]}
\end{verbatim}

When the subjects of these predicates are marked with nominative \textit{ga}, as in (74) and (75), they are construed as bearing an exhaustive-listing focus reading,\textsuperscript{24} in contrast with subject of the Stage-Level Predicate in (76), which need not carry any focus.

\textsuperscript{23} In large part, the Stage/Individual-Level distinction correlates quite well with Kuno's (1973) non stative/stative dichotomy. Nevertheless, there is some overlap. Verbs like \textit{mieru} 'be visible' are stage-level, but stative. (See Tateishi (1988)).

\textsuperscript{24} It is to be noted that even with nominative subjects, these sentences do not lose the generic construal for the subject. I believe that Shirai (1981) was the first to observe this.
(74) Inu-ga kasikoi.
   Dog-NOM smart-IMP
   'It is a dog that is smart.'

(75) Kuzira-ga honyudoobutu da
   whale-NOM mammal COP-IMP
   'It is a whale that is a mammal.'

(76) Inu-ga tuki-ni hoeta
   Dog-NOM moon-DAT bark-PRF
   (i) 'Some dog howled at the moon.'
   (ii) 'The dog howled at the moon.'

Subjects of Individual-Level predicates in Japanese (unless otherwise bearing constituent focus that must ultimately be accounted for independently) are obligatory themes. The same also holds true of English Individual-Level predicates: a mandatory generic construal for indefinite subjects is a defining characteristic of this class of predicates in English. In (71)(c) and (73)(c) above, the indefinite subjects must be construed generically. We cannot interpret (77) to mean existentially that there is some dog that is intelligent or (78) to mean that there is some whale that is a mammal. These interpretations being categorically disallowed:

(77) A dog is intelligent.  ≠  ∃x dog(x) & intelligent(x)
(78) A whale is a mammal  ≠  ∃x whale(x) & mammal(x)

Thus sentences containing thematic WMCs can be interpreted as in a context where the only interpretation of an English indefinite NP is generic. Although this by no means proves that the WMCs
must be Heim-style bare variables, it is highly suggestive. Indeed, the facts in English and Japanese can be accounted for in the present model if it is assumed that subjects of these sentences, like their Japanese counterparts, are in a position at Logical Form where they form a tripartite structure restricting an operator with the properties of Gen. In particular, they cannot be within the scope of existential closure under any circumstances. In conformity with the general drift that has emerged within the account in this Chapter, I will assume that the GRC is raised into a position where it restricts Gen.

(79)  \text{Gen} \_i \ text{inuj}-wa \ [\text{IP} e_i \ text{kasikoi}]

(80)  \text{Gen} \_i \ a \ text{dog}-i \ [\text{IP} e_i \ text{is smart}]

I have indicated at various points in this chapter that I believe that the relevant landing site is the Specifier of CP; for the time being, however, I will simply indicate that the subject is in a pre-IP position. These matters will be addressed in greater detail in Chapters Four and Five.

3.4 Variable Binding in Generic Contexts

A rather more useful diagnostic, one that avoids the hazards inherent in cross-linguistic comparison of the sort seen above, is the possibility of variable binding. If the relation between the GRC and the nuclear scope is in fact quantificational, the relational model predicts that various proforms and anaphora in the sentence should
be amenable to a bound variable construal. If on the other hand, WMCs in Japanese are always kind-referring, as Kuno claims, their behavior is predicted to be consistent with proper names, i.e., pro-forms should be interpretable only as coindexed with the kind itself, and not with individual instantiations of the kind ('objects'). This latter prediction is not borne out: the behavior of zibun 'self' and, somewhat more problematically, kare 'he' in generic contexts demonstrate that, although we must allow WMCs to be kind-referring, they cannot be exclusively so, and in many instances must be quantificational in the sense of the relational model.

3.4.1 Variable Binding of Zibun

This is best illustrated by the reflexive pronoun zibun, 'self.' If the wa-marked GRCs are kind-referring, zibun should relate to the kind and not its individual instantiations in the following, which illustrate zibun in different syntactic contexts.

(81) Densyobatoj-wa, zibunj-no koya-ni modoru
Homing-pigeon-TP self-GEN coop-DAT return-IMP
'A homing pigeon returns to its own coop.'

(82) Nekoj-wa, zibunj-no ato-simatu-o suru.
Cat-TP self-GEN after-cleanup-ACC do-IMP
'A cat cleans up after itself.'

(83) Hatidorii-wa mainiti [NP [zibunj-no taizyu-no
humming-bird-TP daily self-GEN weight-GEN

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hanbun-ni ataru] esa]-o taberu
half-DAT equal food-ACC eat-IMP

'A humming bird eats half its own weight in food a day.'

I will ignore the irrelevant readings of (81) ~ (83) in which the WMC refers to some specific individual and the sentences are construed as habitual rather than generic. On the generic interpretation of these sentences, zibun 'self' (which is not singular, but is simply unmarked for plurality) allows only a distributive reading. In each of these examples the reflexive forms behave for all intents and purposes as if they are bound variables under quantification: we cannot interpret (81) as meaning that homing pigeons return to coops for homing pigeons, but only as meaning that every homing pigeon — allowing since this is a generic sentence, for some tolerable quota of wayward or cat-eaten unfortunates — returns to its own coop. This intuition can be captured by the representation in (84) where the wa-marked constituent restricts Gen, which binds the free variable introduced by the NP:

(84) $\text{Gen}_x [\text{homing pigeon}(x)] \exists y [\text{coop}(y) \land x's\text{-own}(y) \land \text{returns to}(x,y)]$

Essentially the same facts hold for the other examples. (82) means roughly that each cat (after some regurgitatory event) cleans up its own mess and not that the kind felis domestica cleans up after members of the kind felis domestica. Nor does this seem to be a matter of pragmatic plausibility: (83) does not allow an interpretation in
which the kind humming bird eats half the collective weight of members of the kind every day—despite the fact that this is a mathematically deducible consequence of the sentence. The sentence can only be interpreted as meaning that any arbitrary humming bird, in general, eats half its weight every day.

Unsurprisingly, the same facts obtain when the generic interpretation is made overt by a *to iu mono* phrase. One example will suffice to make the point. (85) is interpreted like its counterpart without *to iu mono*, except that the (irrelevant) non-generic reading is precluded.

(85) Hatidori to iu mono-wa mainiti [NP [zibuni-no hum-bird-TP CMP say thing-TP daily self-GEN taizyuu-no hanbun-ni ataru] esa]-o taberu weight-GEN half-DAT equal food-ACC eat-IMP

‘A humming bird eats half its own weight in food a day.’

The bound variable interpretation of *zibun* in the above examples constitutes a major obstacle to a reference-to-kinds model of genericity in Japanese and a major argument for a quantificational account of the kind set forth at the beginning of this chapter. Moreover, exactly the same problem arises in English, as attested by the glosses given below the Japanese examples. In fact, the bound variable reading is available for all three forms of generic marking in English:
(86) (a) The cat likes itself.
    (b) A cat likes itself.
    (c) Cats like themselves.

    Of these examples, in fact, only (86) (c), in which the reflexive exhibits number agreement with the bare plural subject, permits a non-bound-variable reading where the reflexive can be interpreted as referring to the kind itself, and even this is ambiguous. The singular forms in (86) (a) and (b) do not. This difficulty for the predication-of-kinds model did not go unobserved by Carlson (1977), who had to posit a mechanism of semantic adjustment to accommodate between object-level NPs to kinds.25

    Since zibun, when case-marked by genitive no, takes on the meaning of ‘one’s own,’ it is plausible that the bound variable interpretation in the Japanese examples might fall out of the word-level semantics. This does not seem to be the case, however. In the following, only a bound variable reading is available.

(87) Neko-wa zibun-ga suki da
    cat-TP self-NOM liking COP-IMP

    ‘A cat likes itself.’

(88) Neko to iu mono-wa zibun-ga suki da
    cat CMP say thing-TP self-NOM liking COP-IMP

    ‘A cat likes itself.’

25 See fn 2 in Chapter Two for discussion.
(89) Neko to iu mono-j-wa zibun-j-o suki na cat CMP say thing-TP self-ACC liking COP-IMP
hito-ga suki da.
person-NOM liking COP-IMP

The impossibility of kind-level coreference for *zibun* is demonstrated by the fact that we cannot salva veritate substitute *neko* ‘cat’ for *zibun* in (87) ~ (89). One example will suffice to illustrate the point: (90) categorically cannot mean the same thing as (87):

(90) Neko-wa neko-ga suki da
cat-TP cat-NOM liking COP-IMP
‘Cats like cats.’

The above examples, however, should not be construed as indicating that *zibun* can never be coindexed with a kind-referring NP. Under appropriate circumstances, coreference between *zibun* and a kind-referring NP is possible, as the following examples attest.

(91) Syakaigengogakusya-wa zibun-no happyoo-no sociolinguist-TP self-GEN publication-GEN
ba-o motte iru.
location-ACC hold-GER be-IMP
‘Sociolinguists have their own venue(s) for publication.’

(92) Ooguma-wa zibun-no hogoku-ni iru.
G.bear-TP self-GEN sanctuary-DAT be-IMP
‘Grizzly bears are in their own sanctuaries.’
Examples (91) and (92) are ambiguous between bound variable and kind coreferring readings for *zibun*, shown by the fact that on the latter reading we can substitute the relevant NP without changing the meanings of the sentences. The following have the same meaning as their counterparts above.26

(93) Syakaigengogakusya-wa syakaigengogakusya-no sociolinguist-TP sociolinguist-GEN
happyoo-no ba-o motte iru.
publication-GEN location-ACC hold-GER be-IMP

'Sociolinguists have sociolinguists' [i.e., their own] venue(s) for publication.'

(94) Ooguma-wa ooguma-no hogoku-ni iru.
G.bear-TP self-GEN sanctuary-DAT be-IMP

'Grizzly bears are in their own sanctuaries.'

How are we to reconcile these data with the non-kind referring cases seen earlier? An intuitive answer might be that kinds are incapable of performing or experiencing actions (or emotions) as entities in their own right: these activities are possible only of their discrete instantiations. Kinds apparently do not readily bear the thematic roles of Agent or Experiencer.27 On the other hand, (91) and (92)

26 The Japanese examples lack the awkwardness of the English glosses, since a condition C violation of this sort is not considered particularly ill-formed in Japanese.

27 The situation is actually even more complex: It seems that groups of humans in particular can be accorded a collective identity that has the characteristics of individual humans. In such cases, generic-like uses may be exempt from the constraints on θ-role assignment that we have just adumbrated. Consider the following:
indicate that kind-referring NPs are capable of being Themes, in the sense of Gruber (1976). If this generalization is correct, it would seem that the level of entity represented by the subject is likely to be selectionally restricted by the verb and its capacity for \( \theta \)-role assignment. It would follow then, that the WMCs in (81) ~ (83), as semantic Agents, can never be interpreted as kind-referring NPs, but must be variables that are quantified over by an operator.

The question remains as to whether it is possible to obtain a kind-related reading for reflexive \( \text{zibun} \), even when the subject is Agent or Experiencer, i.e, one comparable to \( \text{themselves} \) in cats like themselves. This is evidently possible, provided that, as in English, the plural form is employed.

(95) \( \text{Neko-wa zibun-tati-(dake)-ga suki da} \)  
\( \text{Cat-TP self-PL-only-NOM liking COP-IMP} \)

'Cats like themselves (only).'

(96) \( \text{Sukanku-wa zibun-tati-no akusyuu-o kamawanai} \)  
\( \text{Skunk-TP self-PL-GEN stink-ACC object-NEG} \)

'Skunks don’t mind their smell.'

Like their English glosses, these sentences appear to be ambiguous between bound-variable and kind-referring readings for \( \text{zibun} \). (95), for example, admits a reading in which cats like cats as a kind,

(i) \( \text{Sinrigakusya-wa zibun-no tatiba-o syutyoosuru} \)  
\( \text{Psychologist-TP self-GEN position-ACC advocate-IMP} \)

(a)  'Psychologists advocate their own [collective] viewpoint.'
(b)  'Psychologists advocate their own [individual] viewpoints'
and another in which cats like themselves. The picture here is complicated by a general property of plural morphology that -tati may attach to NPs with the meaning 'and others associated with the individual referred to.' Thus, Tanaka-san-tati may mean, not 'the Tanakas' but 'Mr. Tanaka and his colleagues,' 'Mr. Tanaka and his friends,' or Mr. Tanaka and the others.' Plural marking in Japanese thus picks out a relevant, but often quite ill-defined, set of individuals in terms of some salient member. It would seem that in the case of zibun-tati above, zibun may receive a bound-variable interpretation, with -tati then picking out a set that includes that individual. The kind-related reading is presumably a group reading.

The fact that coreference of zibun with a kind is only possible in conjunction with plural morphology must be interpreted in the context of the fact that in non-generic contexts plural marking is

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28 This set must have an established reference. The plural form cannot for example be used predicatively as in (i):

(i) *Yamada-san-to Tanaka-san-wa keikan-tati da
    PN-COM PN-TP police-officer-PL COP·IMP
    'Yamada-san and Tanaka-san are police officers.'

29 It is difficult to determine whether the plural form ever has an explicitly distributive bound variable reading. I suspect that a one-on-one distributive reading is available as an accidental consequence of plurality. The unlikelihood of a distributive reading is shown by the difficulty in obtaining a generic reading for:

(i) Densyobato-wa zibuntati-no koya-ni modoru.
    Homing-pigeon-TP self-PL-GEN coop-DAT return-IMP
    'the homing pigeons return to their own nests.'

where the sentence strongly favors a habitual reading relating to a specific set of pigeons.
generally optional when an anaphor is bound by an overtly plural subject. In (97) and (98), where the subjects are definite, \textit{zibun} is open to two construals, a distributive reading and one in which \textit{zibun} relates to the plural group as a whole.

(97) Gakusei-tati-wa zibun-no ie-ni kaetta.
\hspace{1cm} \text{Student-PL-TP self-GEN home-DAT return-PRF}
\hspace{1cm} The students returned to their home(s).

(98) Kodomo-tati-wa zibun-no tukue-de tabete ita.
\hspace{1cm} \text{child-PL-TP self-GEN desk-LOC eat-GER be-PRF}
\hspace{1cm} 'The children were eating at their own table(s)/desks.'

In short, \textit{zibun} permits a plural reading when the subject is plural and definite, but not when it is a generic NP (except under the constrained conditions that we have observed above). This I take to be confirmation that the generic WMCs that in (81) ~ (83) cannot be kind-referring, but are variables in the restriction of a quantificational operator.\footnote{A curious quirk of the \textit{to iu mono} construction supports this hypothesis. Example (i) below, which contains both \textit{to iu mono} and \textit{zibun-tati}, seems slightly marginal.}

(i) ? Sukanku \textit{to iu mono-wa, zibun-tati-no nioi-o skunk CMP say thing-TP self-PL-GEN smell-ACC kamanwai. mind-NEG-IMP}
\hspace{1cm} 'A skunk doesn't mind their smell.'

It is difficult to pinpoint the exact source of the awkwardness of this sentence. It seems possible that \textit{zibun-tati} cannot be directly dependent on the WMC for its reference, but must somehow have obtained its reference from the discourse context. (An attempt has be made to approximate this effect in the English gloss.) If this intuition is correct, it seems to show that the \textit{to iu mono} phrase is not plural.
3.4.2 Variable Binding of Kare

The rather more problematic use of *kare* 'he' in generic sentences illustrates the same point. It has been observed by Saito and Hoji (1983), that, the pronoun *kare* 'he,' unlike *zibun,* cannot be bound as a variable by a quantifier. This is illustrated by examples like (99) and (100) below, where the quantifier *daremo* 'everyone' and the Wh-phrase 'who' may be coindexed with *zibun,* but not *kare.*


'Everyone is convinced that he is disliked by Mary.'

(100) Darei-ga zibun/*karei-no haha-o aisite iru Who-NOM self/he-GEN mother-ACC love-GER be-IMP no?

CMP

Who loves his mother?

It is not known why this restriction should be imposed on the interpretation of *kare.* Tajima (1987), noting that *kare* may be bound by WMCs, suggests that lexical pronouns in Japanese can only be A'-bound when they are in open A'-chains, as defined in Contreras (1987), i.e., not bound by a [+Wh] operator.31 Pesetsky (1987:127) notes

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31 It is not clear how this accounts for the fact that *kare* cannot be bound by a quantifier such as *daremo* 'everyone,' which is not a [+Wh] operator.
an observation by Hoji that *kare* may be bound by a *wh*-phrase when that phrase is ‘discourse-linked.’

(101) Dono hitoj-ga karej-no haha-o semeta no
Which person-NOM he-GEN mother-ACC attack-PRF CMP

‘Which person criticized his mother.’

Under some circumstances, moreover, *kare* may be bound by *dareka*, ‘someone’ when the quantifier refers to some specific, potentially identifiable individual (Kuno, ms.). This can be seen in (102), where the quantifier is explicitly discourse-linked.

(102) Kono kurasu-no dareka2-ga, karej-no syukudai-o
This class-GEN someone-NOM he-GEN homework-ACC

yatte konakatta rasii.
do-GER come-NEG-PRF it-seems

‘It appears that someone in this class came without doing his homework.’

In generic sentences too, *kare* also seems to function marginally as a bound variable, even though the specificity requirement noted in (102) and (101) above is no longer met. The following, with and without *to iu mono*, are stylistically a little stilted and foreign-sounding (and have been assigned a single question mark), but are quite acceptable to many speakers.32

32 Caveats that must be observed with the use of *kare*/kanozyo for syntactic analysis. For one thing, there is a strong intuition on the part of many native speakers that sentences containing possessive *kare* read like an inept translation from English. Although the use of *kare* is gaining ground, especially among
(103) ？Kagakusya-wa (kanarazu) kare-no raibaru-o 
scientist-TP invariably he-GEN rival-ACC

isiki suru
be conscious-IMP

'A scientist is (invariably) aware of his rivals.'

(104) ？Sinbunkisyaa to iu mono-wa, kare-no 
journalist CMP say thing-TP his-GEN

zyoohoo-gen-o mamoru
information-source-ACC protect-IMP

'A journalist protects his sources.'

The acceptability of kare improves substantially with greater depth of embedding:

(105) Kagakusya to iu mono-wa, kare-no zikken-o 
Scientist CMP say thing-TP he-GEN experiment-ACC

hihan-suru hito-ga dereba, kanarazu 
criticize-IMP person-NOM appear-CND invariably

hangeki-suru 
counterattack-IMP

'A scientist, if someone comes up who criticizes his experiments, always counterattacks.'

Coindexation of kare and the subject is predicted to be semantically incongruous on a predication of kinds account, since kare, unlike zibun, lacks even the potential for coindexation with a class of entities and must take single human beings as antecedents. Once
again, we are dealing with a bound variable interpretation, and further evidence for a quantificational model of generic sentences. The hypothesis that quantification is involved is further reinforced by the occurrence of *kare* in sentences containing floating quantifier-like phrases that range over arbitrary members of a set:

(106) Seizika (to iu mono)j-wa, darej de-mo, Politician CMP say thing-TP who COP-GER-also
karej-no sizisya-no bengi-o hakaru. he-GEN supporter-GEN assistance-ACC work-for-IMP

'Politicians all do favors for their supporters.'

Although singular *kare* cannot corefer with the kind, its plural form *karera*, like *zibun-tati*, is ambiguous between a distributive reading and a collective interpretation that may be taken as kind-referring. This can be seen in (107):

(107) Gakusya-wa, karerai-o hihan-suru hito-ni Scholar-TP he-PL-ACC criticize-IMP person-DAT
kanarazu hanron-suru invariably rebut-IMP

'Scholars invariably issue rebuttals to those that criticize them.'

The facts in Japanese can be seen to be essentially the same as those in English. Where a reflexive or pronominal form is plural, that form may be interpreted as coindexed with a kind, otherwise it is interpreted as a bound variable.
3.5 Conclusions

The evidence from the interpretation of zibun ‘self’ constitutes substantive evidence for a quantificational model of generic sentences. A quantificational model, however, cannot be one in which quantification is performed by a determiner attached to an NP, but must be adverbial in order to account for the variety of non-NP constituents that can be the restrictive term of the operator. We have seen that a tripartite model of generic sentences in which a Gen operator unselectively binds any free variables within its restrictive term is capable of accounting for a general range of phenomena involving WMCs and generic sentences in Japanese. These include locative PPs, temporal phrases, and no ni clauses.

This model has several consequences. It allows us finally to dispense with Kuno’s analysis of thematic WMCs as referring only to entities whose reference is established in a discourse, and to treat them as bare variables that must be bound within the scope of an operator at LF, the operator being Gen in the case of generic sentences. The model also allows us to speculate that discourse notions such as theme can be defined in terms of the location of a constituent at Logical Form: a theme may be a constituent that is outside the nuclear scope and functions as restrictive term of an LF operator that has sentential scope.
Appendix: A Conditional-Like Construction, -te wa

The interaction of conditional clauses and WMCs has been noted by Japanese grammarians ever since Fujitani Nariakira in the late eighteenth century. In colloquial Japanese, attaching wa to the gerund of the verb in -te has the effect under some circumstances of allowing an adjunct clause to be interpreted as the antecedent of a conditional. This class of WMCs, whose existence has been largely

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33 Fujitani in his 1779 Ayuisyoo identifies wa as being in the same category as the conditional marker -ba. It is widely accepted that the conditional suffix -ba is historically derived from the particle wa. Evidence that wa (< φa < *pa) is source of -ba may be observed in the alternation of wa and -ba between the 7th century naku φa 'if there is not,' 'without' and the forms nakuba and nakunba attested in later centuries in conjunction with reading of Chinese texts (kanbun).

34 The construction here is to be regarded as completely separate from the insertion of wa into the -te iru progressive form as in (i):

(i) Ronbun-o kaite-wa ita kedo ...
thesis-ACC write-GER-TP be-PRF but
'I was writing my dissertation, but [I wasn't getting anywhere].'

This always receives a contrastive reading construal, presumably because the structure is biclausal with the-te wa clause adjoined to the VP as in (ii):

(ii)
been ignored in the modern linguistic literature, cannot be accounted for in a discourse-functional treatment, nor by one in which *wa* is treated as a determiner.

The construction is observed in the following pair of sentences, which differ only in that in (109), the gerund is marked with *wa*, while in (108) it is not. (Here, *-te wa* is regularly phonologically realized by the allegro form *-tya*).

(108) Konpyuutaa-ga nakute, sigoto-ga dekinai
   computer-NOM not-exist-GER work-NOM cannot
   ‘Not having a computer, no work can be done.’

(109) Konpyuutaa-ga nakutya, sigoto-ga dekinai
   computer-NOM not-exist-GER-WA work-NOM cannot
   ‘If we don’t have a computer, no work can be done.’

Sentence (108) comprises two clauses, each containing a discrete proposition whose truth is evaluated independently of the other: the sentence is held to be true if and only if some individual (i) does not have a computer, and (ii) cannot do any work. In (109), however, the second half of the sentence can only be evaluated in the light of the truth of the *wa*-marked adjunct, the content of which is neither asserted nor presupposed. This behavior is emblematic of a conditional sentence; indeed, (109) may be paraphrased by (110), where *-tya* is replaced by true conditional morphology:

(110) Konpyuuta-ga nakereba, sigoto-ga dekinai.
   computer-NOM not-exist-COND work-NOM cannot
   ‘If I don’t have a computer, no work can be done.’
In appropriate contexts, moreover, it is also seen that the -te wa phrase may be construed counterfactually, as in (111).

(111) Konpyuutaa-ga nakutya, sigoto-ga dekinakatta  
computer-NOM not-exist-GER-WA work-NOM can-NEG-PRF

'If we didn't have a computer, we wouldn't have been able to do the job.'

This class of WMCs seems to be IP adjoined, since they readily embed inside relative clauses.

(112) [NP [CP OPi [IP konpyuutaa-ga nakute-wa [IP ei ]
computer-NOM not-exist-GER-WA

dekinai]] sigotoi ]
can-NEG-PRF work

'work that cannot be done without a computer'

Despite the characteristically conditional-like properties, outlined above, it is a familiar fact among language teachers that the -te wa construction has a narrower distribution than the conditional suffixes ending in -tara and -(e)ba. One major constraint, the exact nature of which remains unclear, is that the consequent must (i) be formally negative, (ii) have a negative entailment, or (iii) have an outcome that is construed as being in some manner undesirable.35

35 The following sentence violates the negativity requirement on the consequent, and is therefore ill-formed. The probable pragmatic origins of this constraint are suggested by the fact that wa is replaced by mo, resulting in a concessive interpretation, the sentence becomes acceptable.

(i) Konpyuutaa-ga nakute *wa/mo, sigoto-ga dekiru  
computer-NOM not-exist-GER-WA/also work-NOM can-IMP

'We can work (even) if we don't have a computer.'
This limitation suggests that the -te wa clause has something less than full status as a conditional clause.

The gerundal nature of -te suggests an analogy with the distinction in English between strong and weak adjuncts, identified by Stump (1985). Strong adjuncts entail their adjunct element, while weak adjuncts do not necessarily do so, but permit paraphrases with conditional clauses. This is seen in (113) and (114) below.

(113) (a) Being a master of disguise, Bill would fool everyone.
(b) (No conditional paraphrase.)

(114) (a) Wearing that disguise, Bill would fool everyone
(b) If he wore that disguise, Bill would fool everyone

(113)(a) entails that Bill is a master of disguise, while (114)(a) does not entail that Bill is wearing the disguise. Viewed solely by this criterion, the bare -te clause in (108), which entails its content, resembles a strong adjunct, while the -te wa clause in (109), lacking any such entailment, seems to correspond to a weak adjunct.

However, Stump notes a systematic correlation between predicate type and adjunct type. Weak adjuncts must be Stage-Level predicates, while strong adjuncts are always Individual-Level predicates. Only

Note also that when the consequent is a stage-level predicate and violates the requirement that the consequent be negative, an iterative construal usually obtains:

(ii) Uti-e kaette-wa yoohuku-o kikaeru
    home-to return-GER-TP clothes-ACC change-IMP

(a) I always change my clothes whenever I go home.
(b) I am always going home and changing my clothes.
Stage-Level predicates, then, permit conditional paraphrases. (This is reflected in examples (113) and (114) above.) This correlation does not quite carry over into Japanese. Stage-Level predicates seem to be always possible:

(115) Anna tyoosi-de giron-site-wa, Tanaka-san-wa
like-that style-INST argue-GER-TP PN-TP
syooshin-no mikomi-ga nai daroo
promotion-GEN prospect-NOM ¬ exist-IMP COP-HYP

'If he argues like that, Tanaka probably won't have any prospect of promotion.'

But in the case of Individual-Level predicates, parallels with English weak adjuncts begin to break down. If the subject of an Individual-Level -te wa clause corefers with a rigid designator, the sentence is ungrammatical on both the readings indicated.

(116) *Amerikazin-de-wa, Biru-wa...
American-COP-GER-TP PN-TP
(i) Being an American, Bill...
(ii) If he is a American, Bill...

But when the subject of the -te wa clause is not a rigid designator, the clause may be Individual-Level predicate, as the well-formedness of (117) demonstrates.

(117) Amerikazin-zyaa, Nihonzin sutahhu-ni umaku
American-COP-GER-TP Japanese staff-DAT well
toke-kom-e-nai ka mo sirenai
melt-enter-POT-NEG CMP also know-POT-NEG
'If it's an American, he mightn't fit in with the Japanese staff.' (i.e., 'an American mightn't fit in with the Japanese staff."

A further difference between -te wa clauses and weak adjuncts is that only the former may have different subjects in the antecedent and consequent clauses.

(118) Tanaka-san-ga kitya, Yamada-san-wa
PN-NOM come-GER-TP PN-TP
komaru koto-wa nai desyoo ka.
have-trouble-IMP CMP-TP NEG-IMP COP-PROB Q

'If Tanaka-san comes, are you sure Yamada-san won't feel uncomfortable.'

(119) Nedan-ga amari takakutya, boku1-wa
Price-NOM too high-GER-TP 1sg.-TP
[ei e kau] iyoku]-o nakusu.
buy-IMP interest-acc lose-IMP

'If the price is too high, I'll lose interest in buying it.'

A third way in which the two adjunct types differ between the two languages is that English weak adjuncts generally require the overt presence of a modal element in order to be licensed.

(120) (a) Wearing that disguise, Bill would fool everyone.
(b) *Wearing that disguise, Bill is fooling everyone

Japanese -te wa clauses, on the other hand, need no overt modal in order to be licensed when the verb is imperfective.
Sonna kakkoo-de itte-wa, okor-are-ru
that-like style-INS go-GER-TP get-angry-PASS-IMP

'You will get into trouble if you go in a getup like that!'

(122) Okane-o kaesite-wa suzi-ga tooranai.
Money-ACC return-TP sinew-NOM go through-NEG-IMP

'It won't make sense if you return the money.'

The modal interpretation in (121) and (122) must presumably have some source. Since the verb is imperfective, these sentences are typically interpreted as future tense, which may be regarded as necessity over selected branching worlds into the future; this may be enough to supply the modal interpretation needed to license the conditional interpretation of the adjunct. With a perfective main clause, however, the situation is a little more perspicuous: the conditional construal obtains most readily when the nuclear predicate contains an epistemic modal element such as daroo.

(123) Anna kakkoo-de itte-wa, waraw-are-ta daroo
Like-that style-INS go-GER-TP laugh-PASS-PERF COP-PROB

'You were bound to be laughed at if you went looking like that.'

When no overt epistemic modal is available, the -te wa phrase takes on either (a possibly slightly marginal) counterfactual construal, or more plausibly, an iterative interpretation.36

36 It should be noted that this iterative interpretation is also available in imperfective sentences, whenever the sentence is interpreted as non-future.

(i) Oya-dori-wa, kawaru-gawaru soto-e dekake-te-wa
Parent-bird-TP change-change outside-DAT depart-GER-TP
(124) Anna kakkoo-de itte-wa, waraw-are-ta
Like-that style-INS go-GER-TP laugh-PASS-PRF

(a) *'If he went looking like that, he was laughed at.'
(b) 'He would have been laughed at if he had gone looking
like that.' [counterfactual]
(c) 'Whenever he went looking like that, he was laughed
at.' [iterative]

This data can be accounted for if it is assumed that, in the ab­
sence of overt morphological evidence of epistemic modality, wa­
marking of the -te form gerund is itself sufficient to place its clause in
the restriction of an invisible operator with the property of universal
quantification over possible worlds and times. There would seem to
be little objection to identifying this operator with Heim's necessity
operator.

On the counterfactual interpretation, then, (124) will presum­
ably have a semantic representation like that in (125), where the
operator quantifies only over worlds that are different from the real
world.

(125) □ w [if he went looking like that] ∃ [he was laughed at]

(Syoogaku Kokugo (Japanese for Elementary Schools) 2: I. Kyooiku
Syuupan 1988: 47))

'the parent birds come and go in turns bringing back small flies,
blowflies and other insects.'
On the iterative construal, on the other hand, we may hypothesize that the world variable is somehow anchored in the 'real world,' and that the operator quantifies over a temporal variable as in (126) below. I will assume that both predicates contain an event variable e after the fashion of Davidson (1966) and Parsons (1990) variables are related by an existential predicate AT.

\[(126) \quad \Box_{w,t} [t : \text{time s.t. } \exists e_1 [\text{went looking like that}(e_1) \& \text{AT}(e_2,t)]] \]
\[\exists e_2 [\text{he was laughed at}(e_2) \& \text{AT}(e_2,t)]\]

The exact mechanism by which the operator can sometimes quantify over one variable and not others need not concern us here. What does concern us is that the behavior of -te wa clauses is explicable when we assume that they restrict a necessity operator that, when not interpreted as epistemic, is able to supply universal quantification over different kinds of variable. Moreover, it is apparent that wa-marking alone suffices to place the clause within the restriction of such an operator. In short, -te wa clauses appear to constitute a transitional state somewhere intermediate between weak-adjuncts and a full-fledged conditional clauses.

The significance of the -te wa examples, lies in the fact that no treatment of wa-marking rooted in a discourse-functional dichotomy

37 Something similar must be going on in the case of the 'whenever' reading of English when clauses.
of old and new information can explain this conditional-like behavior. A model in which *wa* is employed to mark a constituent as standing as the restrictive term of a non-selective operator, however, may in the long run be able to provide an account of these phenomena.
Chapter Four

Direct Object GRCs and the LF Movement Hypothesis

In the quantificational model described in Chapter Three, generic sentences denote a relation between some constituent and the remainder of the sentence. This relation is defined by the modal operator Gen, which may quantificationally bind bare variables that are arguments of bare NPs in Japanese, and indefinite singular and bare plural NPs in English that happen to be within the restrictive term (i.e., the GRC). The restrictive term is not categorically limited to NPs, but may also be a locative PP or some other non-NP constituent. Thus far, though, I have had little to say about the syntactic dimensions of this model. In this chapter, I will consider some syntactic evidence that GRCs are raised into a position outside of the nuclear scope where they can then restrict the operator Gen. The principal data here comes from the apparent scopal behavior of direct object GRCs and weak crossover effects in generic sentences. The level of representation at which this movement takes place, more-
over, seems to be determined by a parameter of Universal Grammar, set for S-Structure and Logical Form in Japanese, and in English for Logical Form only.

4.1 The GRC Raising Hypothesis

4.1.1 Raising versus In-Situ Interpretation

In her original proposal for the treatment of generic sentences, Heim (1982) left it an open question as to how an indefinite NP might come to restrict her invisible necessity operator. Nonetheless, there can be little doubt that she assumed that the NP is raised out of the nuclear scope, as attested by her use of Logical Form trees like (1), adapted from Heim (1982: 191), where the GRC is represented as relating to a gap within the nuclear scope, which in Heim’s account is S (=IP):

(1)

The gap is derived in Heim’s account by a rule of NP-Prefixing (Heim, 1982: 132), an LF-construal rule comparable to GB quantifier
raising (e.g., May, 1977, 1985), by which an NP is raised out of the nuclear scope and adjoined to a higher position in the sentence. This rule applies to both quantified NPs and to bare-variable indefinite NPs. It is my contention that Heim's assumption of LF raising is essentially correct, and should be extended to the analysis of generic sentences of Japanese where LF movement is matched by movement at S-Structure. In the case of generic sentences, it is not, I believe, adjunction that is involved. I will postpone discussion of the landing site for GRC movement until Chapter Five, treating it agnostically for the time being as a Pre-IP position.

On the raising account, the GRCs in (2) ~ (4) below are all to be analyzed as having been extracted from a position in the nuclear scope (=IP) at S-Structure. These S-Structure representations map directly to LF structures in which the WMC is outside the domain of existential closure and restricts the operator Gen:

(2) (a) Taiheiyoo-no kono hen-de wa, Pacific Ocean-GEN this part-LOC-TP
       [IP taihuu-ga t hassei su-ru]
       typhoon-NOM arise-IMP
       'In this part of the Pacific, (in general) typhoons occur.'

(b) Gen [Taiheiyoo no kono hen dej-wa] [IP taihuu-ga t; hassei suru]

(3) (a) e omuretu-o tukuru no-ni-wa,
       omlette-ACC make-IMP CMP-P-TP
       [IP t e tamago-o waranakereba naranai]
       egg-ACC break-NEG-CND do-NEG-IMP
       'In order to make omlettes, one must break eggs.'
(b) Gen [omuretu-o tukuru no ni-wa] [Ip ti tamago-o waranakereba naranai]

(4) (a) Hareta hi-ni-wa [Ip e t mizuumi-ni itta]

fine day-p-TP lake-P go-PRF

'We went to the lake whenever it was fine.'

(b) Gen [hareta hi ni-wa] [Ip e t mizuumi ni itta]

The generalized raising hypothesis adopted here stands in direct contrast to a recent proposal put forward by Diesing (1988, 1989), and extended by Kratzer (1988), to the effect that subjects of generic sentences are interpreted in their S-structure positions in English (and German) while existentially-interpreted bare plural and indefinite subjects undergo lowering into D-Structure positions inside VP.

Diesing (1988, 1989) suggests that all subjects of Stage-Level predicates and unaccusative level predicates originate in VP. The existential interpretation of bare plural and indefinite subjects is then attributed to their being replaced in their D-Structure positions in the VP at Logical Form, which constitutes the nuclear scope in the her model, and hence is within the scope of existential closure. This hypothesis apparently involves no rule governing the well-formedness of LF representations comparable to Heim's NP-Prefixing or the GB rule of Quantifier Raising QR, in which the VP contains a variable trace of the quantified expression: existentially quantified constituents are construed at LF in their D-structure positions.

On the 'lowering' account, the ambiguity of the bare plural NP in (5) below is attributed to availability of at least two LF structures: in
(6), the subject has remained in its S-Structure position in Spec IP, outside the domain of existential closure, and in (7) it has been 'reconstructed' in its D-Structure position.¹

(5) Firemen are available.

(6) LF₁: \(\text{Gen} [\text{IP firemen} \exists [\text{VP} \ t \ \text{are available}]]\)

(7) LF₂: \(\exists [\text{VP firemen are available}]\)

The Diesing/Kratzer hypothesis hinges crucially on the assumption that subjects of all Stage-Level predicates have a source in VP.² Yet despite numerous suggestions that subjects of Japanese may be within VP at S-Structure (Kuroda, 1986; Fukui, 1986; Tateishi, 1988; Whitman, 1989, 1990), it is not obvious that this is the case

¹ Diesing (1988) identifies a third interpretation of (5), (i) below, which is irrelevant to the present discussion, since the subject is lowered in the same fashion as in (6).

(i) \(\text{Gen} \ [\text{here}] \ \exists [\text{VP firemen are available}]\)

² According to Diesing (1989), the Spec VP position of Individual-Level Predicates is occupied by PRO rather than a trace, hence the subject can never be replaced in that position at LF. One serious difficulty encountered by a syntactic treatment of these predicate types is that whether or not a predicate is Individual- or Stage-Level must frequently be contextually determined. Thus (i) is a typical Individual-Level predicate, while (ii) is interpreted as Stage-Level.

(i) \(\text{Mary} [\text{PRO has brown hair}]\)

(ii) \(\text{Mary} [t \ \text{has brown hair} \ when \ she \ is \ in \ Paris}].\)

If the basic sentence (i) is inherently Individual-Level, it must have a different structure from that in (ii) where the subject of the Stage-Level predicate is presumed (in the Diesing/Kratzer account) to have a source within VP. It seems difficult to motivate such an distinction in any coherent manner, since virtually every predicate must then have two possible derivations.
in Japanese. Miyagawa (1989) offers substantive evidence from quantifier float that nominative subjects of unaccusative and passive verbs originate as objects in VP; but conversely his data may be interpreted to mean that there can be no VP source for subjects of other transitive and ergative intransitive verbs. In the examples below, adapted from Miyagawa (1989, ch.2), a constituent is assumed to have undergone movement at S-Structure: (8) contains a scrambled object, (9) is unaccusative, and (10) is passive.

(8) Doa-o kodomo-ga kono kagi-de hutatu t aketa
door-ACC child-NOM this key-INST two open-PRF
'The children opened two doors with this key.'

(9) Doa-ga kono kagi-de hutatu t aita
door-NOM this key-INST two open-PRF
'Two doors opened with this key.'

(10) Doa-ga kono kagi-de hutatu t akerareta
door-NOM this key-INST two open-PASS-PRF
'Two doors were opened with this key.'

I assume with Miyagawa that the numeral quantifier is a base-generated adjunct. Miyagawa proposes that the relationship between a numeral quantifier and the NP which it quantifies is constrained by a requirement that the two elements mutually c-com-

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3 Diesing (1988) bases her proposal substantively on proposals by Kuroda (1986) and Fukui (1986), who suggest that all subjects in Japanese are in VP. If these accounts are taken at face value, subjects of unaccusative verbs must either be in situ at all times in the complement of V position (Tateishi (1988) proposes that this is the case), or must move out of the complement position into a higher position in the VP. This latter cannot be motivated under standard assumptions in which unaccusative subjects move to receive nominative case under IP.
mand each other. In the above examples, the mutual c-command\textsuperscript{4} condition is met at S-Structure because the numeral quantifier is able to c-command the trace of movement, even though it cannot c-command the relevant NP. This is illustrated in (11).

(11) = (9)

\[
\begin{array}{c}
\text{IP} \\
\text{Spec} \\
\text{doa-ga} \\
\text{VP} \\
\text{NQ} \\
\text{kono kagi-de} \\
\text{hutatu} \\
\text{v'} \\
\text{NP} \\
\text{t} \\
\text{V} \\
\text{aita}
\end{array}
\]

In the following examples, on the other hand, the mutual c-command relation cannot be made to hold between the subject NP and the quantifier.

(12) *Kodomo-ga [vp kono kagi-de [vp hutari t doa-o child-NOM this key-INST two door-ACC

\textsuperscript{4} Miyagawa employs the first branching node definition of c-command. It will be observed also that he assumes ternary branching. In a binary branching model, m-command (i.e., the first maximal projection definition) of Aoun and Sportiche (1983) would have to be used.
Two children opened the door with this key.

(13) *Kodomo-ga [VP geragera to [VP hutari t waratta]]
    child-NOM loudly two laugh-PRF

'Two children roared with laughter.'

In the context of the contrast with (12) and (13), Miyagawa's data provides a powerful argument for analyses in which the subjects of unaccusative and passive verbs are D-Structure objects. If the unaccusative hypothesis is correct, subjects of transitive and ergative intransitive sentences should not be expected to exhibit the same behavior as that of D-Structure objects in (8) – (9). By the same token, the ungrammaticality of (12) and (13) seems inexplicable if it is assumed that there is a trace position from which the subject NP can have been derived.5 Since the trace would be properly governed by a local antecedent (antecedent governed), there would be no violation of the Empty Category Principle.6 Both sentences should be well-formed; that they are not well formed constitutes evidence that their subjects are not raised out of VP. It then follows that there is no VP internal position into which the subjects of transitive and ergative intransitive sentences (i.e., external arguments) can be reconstructed at Logical Form. As the lowering-to-VP hypothesis put forward by

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5 Unless, as John Whitman (personal communication) notes, the Spec VP position is external to the innermost VP (outside kagi de).

6 Under Rizzi's (1990) Relativized Minimality, one possible counterargument might be that the PP may stand as intervening potential governor of the trace of movement into a subject position. It is not clear to me, however, how the PP, which cannot relate to a floating quantifier, can be an appropriate proper governor.
Diesing and Kratzer cannot be supported by independent syntactic evidence in Japanese, I will not pursue it further here. In the remainder of this chapter, it will become clear that a raising account is better equipped to account for a number of phenomena in which object GRCs show evidence of movement.

4.1.2 GRC Raising and Quantifier Raising

Before I discuss the evidence for raising, some observations are in order on the nature of GRC raising, since these affect and constrain the relevant data in a number of ways that distinguish generic sentences from other quantified structures created by Quantifier Raising (QR). On the raising analysis, the GRC moves to a non-argument position, with the consequence that under Chomsky's (1986) functional determination of empty categories, the trace of the GRC is a syntactic variable. The movement of GRCs thus resembles Quantifier Raising in GB theory in that it extracts a constituent to a position where it may be said to have scope over another constituent leaving behind a variable trace at Logical Form. However, GRC movement differs from QR in one crucial respect: the constituent that undergoes raising is not a unitary quantifier consisting of a Determiner-NP complex, but an NP or other GRC, sans operator. Moreover, although the GRC is raised to a position where it restricts the Gen operator at Logical Form, this movement does not yield a single constituent containing a operator and GRC at LF. (This would violate
the Projection Principle.) Movement in short creates a tripartite quantificational structure at LF, whose form we may generalize as in (14):

(14) Gen [XP Restrictive Term] [ ...tj... Nuclear Scope ]

In (14), Gen is an adverb-like sentential operator that contributes to the modal interpretation of the sentence, and is restricted by a constituent (or constituents) that are outside its nuclear scope. The LF structure is homomorphic with the informal representations, familiar in the GB literature (e.g., Chomsky 1977, 1982), in which quantifiers are decomposed into tripartite structures consisting of an operator, a restriction, and a (nuclear) predicate:

(15) Every man bought a book.
    For every x, x a man, x bought a book
(16) Which man bought a book?
    For which x, x a man, x bought a book

The LF configuration derived from GRC movement does not require the decomposition necessary for further Post-LF semantic interpretation, since the operator and restriction already exist as

7 As discussed in Chapter Three, the unifying generalization is provided in post-LF semantics, where the denotation of the structure in (14) is the relation in (i), following van Bentham's (1986) proposal for the relational treatment of determiners shown in (ii).

(i) [[Gen]] [[Restrictive Term]], [[Nuclear Scope]]
(ii) [[Det]] [[Noun]], [[VP]]
separate constituents at S-Structure. Thus although the LF configurations generated by GRC raising are analogous to those required for interpretation of unitary quantifiers, they are derived by an independent mechanism in which the operator exists as a separate entity from the restrictive term at D-Structure. This imposes some non-trivial constraints on the nature of GRC movement.

4.1.2 Locality and Operator Scope

One important consequence is that GRC movement is highly local, being confined to the clause in which Gen occurs at D-Structure. As a general fact, it would appear that the scope is determined by the S- or D-Structure position of operators when external to the NP. This is illustrated in (17) below, which permits only the interpretation given in (18) (a) and not (18) (b) where Gen and the GRC have matrix sentence scope.

(17) Jill believes professors are insane.

(18) (a) Jill believes (Gen [professor(x)] [insane(x)])
(b) *Gen [professor(x)] [Jill believes (insane(x)]

The impossibility of the interpretation in (18) (b), which would require that Gen and the GRC be raised at LF to a position adjoining the matrix sentence, was taken by Carlson (1977) as evidence that bare plural NPs are scopally inert and therefore like proper names. (See §2.1.1.) On the present model, the semblance of inertness in (18) (b) is a function of the modal character of Gen, which precludes
extra-clausal extraction. Gen must be regarded as one of a class of sentential operators that are intrinsic to the interpretation of the clause in which they occur and whose number includes modal adverbs and the interrogative operators of yes/no questions. In (19), probably, a modal adverb, cannot be interpreted as having matrix scope as in (20).

(19) Mary believes professors probably are insane.
(20) *probably [Mary believes [ professors t are insane]]

In a similar vein, it is impossible to extract the tensed auxiliary in (21) from its clause at S-Structure, even with do-support.³

(21) *Didi John say [Bill t see Harry]?

Since a GRC must move into a position where it restricts Gen, its scopal interpretation is pre-determined by Gen, which appears to be a widest scope operator in its clause.⁹ The clauseboundedness of

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³ A syntactic account of these phenomena might run along the following lines. In (21), movement of did to the matrix CP is ruled out by Chomsky’s (1986a) proscription against Head-to-Spec movement: tense cannot move from the 1° position though the Spec of CP to escape from its clause. Let us assume that adjuncts such as probably are, following a proposal by Travis (1989), selected by, the head of the relevant functional category. Then the generalization appears to be that no head-selected element can be outside the domain of its head at Logical Form.

⁹ Gen would seem to have wide scope over negation, for example. Below, (i) and its Japanese counterpart (ii) are not interpreted in a way in which negation has scope over Gen as in (iii).

(i) Cats don’t swim.
   Gen [cat (x)] ¬ [swim(x)]
Gen thus has the important consequence of limiting LF movement of a GRC to the clause in which Gen occurs.\(^{10}\) In this manner, the fact that we are not dealing with a unitary syntactic quantifier, together with the inherent sentential scope of Gen, creates the effect of scopal inertness on the part of the GRC.

The picture is further complicated by the fact that as the GRCs discussed so far have primarily been subjects and adjuncts, movement is apt to be string vacuous. For visible evidence of movement, we must look to the behavior of constituents for which such evidence is likely to be a little more forthcoming, and it is here that direct object GRCs—the second category of problematic sentences noted by Carlson (1989)—offer crucial evidence in the form of two phenom-

\begin{itemize}
  \item[(ii)] Neko-wa oyoganai.
  \hspace*{1em}Cat-TP \hspace*{1em}swim-NEG-IMP
  \item[(iii)] *Gen [cat(x)] [swim(x)]
\end{itemize}

In some contexts, however, it is less clear that Gen has widest scope. Does (iv) have the interpretation shown in (v)? My intuitions become very weak at this point.

\begin{itemize}
  \item[(iv)] Goats eat everything.
  \item[(v)] \(\forall x\ \text{thing}(x) \rightarrow [\text{Gen} [\text{goat}(y)] [\text{eat}(x,y)]]\)
\end{itemize}

\(^{10}\) Note that Japanese also allows long distance S-Structure movement of wa-marked GRCs, as evidenced by (i) below. This problem will be addressed in §4.2.2 in the discussion of scrambling.

\begin{itemize}
  \item[(i)] Kuzira wa [Morio-kun-ga \(t\) in'-o hunda uta-o
  \hspace*{1em}whale-TP \hspace*{1em}PN-NOM \hspace*{1em}rhyme-ACC \hspace*{1em}tread-PRF \hspace*{1em}song-ACC
  \hspace*{1em}uta-o \hspace*{1em}to \hspace*{1em}ita]
  \hspace*{1em}sing-IMP \hspace*{1em}CMP \hspace*{1em}say-PRF

  'Whales, Morio said, sing songs that rhyme.'
\end{itemize}
ena: (i) the scopal interpretations of definite object GRCs vis-à-vis indefinite subjects, and (ii) weak crossover effects.

4.2 The Interpretation of Definite Object GRCs

4.2.1 Carlson (1989) Revisited

To recapitulate the basic facts concerning definite objects in generic sentences, it will be recalled that the English sentences observed by Carlson (1989), and shown in (22) and (23) below, are ambiguous between two readings, which can now represented within the present framework in the accompanying semantic representations. On the preferred (i) interpretation, the indefinite subject NP is assigned an existential construal, and the definite object is the GRC. On the less preferred (ii) interpretation, the indefinite subject receives a generic construal.

(22) A computer computes the daily weather forecast.
   (i) \( \text{Gen}_x [\text{the daily weather report}(x)], \exists_y [\text{computer}(y) & \text{print out}(x,y)] \)
   (ii) \( \text{Gen}_y [\text{computer}(y)], \exists_x [\text{the daily weather report}(x) & \text{print out}(x,y)] \)

(23) Robots assemble the new cars.
   (i) \( \text{Gen}_x [\text{the new cars}(x)], \exists_y [\text{robot}(y) & \text{assemble}(x,y)] \)
   (ii) \( \text{Gen}_y [\text{robot}(y)], \exists_x [\text{the new cars}(x) & \text{assemble}(x,y)] \)

The availability of the two construals for these sentences supports a hypothesis in which GRCs do in fact show scopal ambiguity,
contingent on which constituent is construed as restricting the operator Gen at Logical Form. (It will also be noted that definite NPs are required to undergo movement at LF on this account, a matter that we will return to shortly.)

It will be recalled that corresponding sentences of Japanese were found to be unambiguous, as shown by the contrast in meaning between (24) and (26) and between (25) and (27) below. Each must be regarded as a distinct sentence, sharing the same D-Structure, but differing in meaning according to which element is overtly selected as GRC by virtue of wa-marking and sentence initial position. (25) and (24) correspond to the dispreferred readings of the English sentences.

(24) Konpyuuta-wa mainiti-no tenki-o uti-dasu  
Computer-TP daily-GEN weather print-out-IMP

\[\text{Gen}_y [\text{computer}(y)], \exists_x [\text{the daily weather report}(x) \& \text{print out}(x,y)]\]

(25) Robotto-wa atarasii zidoosya-o kumi-tateru  
robot-TP new auto-ACC assemble-build-IMP

\[\text{Gen}_y [\text{robot}(y)], \exists_x [\text{the new cars}(x) \& \text{assemble}(x,y)]\]

Conversely, (26) and (27), where the object WMCs are located sentence-initially, apparently due to extraction from their D-Structure position, correspond to preferred interpretations.

(26) Mainiti-no tenki yohoo-wa, konpyuuta-ga t  
Daily-GEN weather forecast-TP computer-NOM
Higginbotham (1983) proposes that languages differ minimally at Logical Form. The above data provide a powerful argument for the existence of Logical Form as a level of representation at which cross-linguistic generalizations about semantic structure can be captured: The fact that wa-marking and preposing an object at S-Structure impose different truth-conditions on the sentences is readily accounted for if we assume that genericity is a quantificational relation between two components of a sentence that can be captured at Logical Form. And since we observe in the English sentences ambiguity, and in the Japanese sentences unambiguity reflected in morphosyntactic relations at S-structure, the null hypothesis is that the ambiguity of the English sentences is manifested at LF by two different structures, corresponding to those found in S-Structure in Japanese. Moreover, in Japanese matrix sentences, it seems that a GRC object must be raised at S-Structure into a position where it is interpreted as restricting the operator.\(^{11}\) In short, Japanese appears to represent

\(^{11}\) When neither subject nor object is wa-marked and in sentence initial position, the resulting sentences, though grammatical, are difficult to contextualize and hard to interpret sensibly. In isolation, the 'best' interpretation of (i) and
overtly at S-structure level, an operation that in English must be assumed to take place only at Logical Form.

The obligatory S-Structure raising of GRC objects in Japanese matrix generic sentences militates against an account along the lines of Diesing (1988, 1989) and Kratzer (1988), in which subject NPs restrict a generic operator in situ in Spec IP. The Diesing/Kratzer model has the odd consequence that it requires the subject to be lowered at LF in (22) and (23) in order to be existentially construed just when the GRC object is raised. This requires that two separate mechanisms, raising (of the GRC) and lowering (of the non-GRC subject), be invoked to account for the multiple interpretations of the English sentences. It also requires us to assume either (i) that the subject of the Japanese sentence is in Spec VP at S-Structure, or (ii) that LF lowering from a Spec IP position is triggered by S-Structure raising of the object. In the absence of convincing evidence that subjects of Japanese transitive verbs are in Spec VP at S-Structure (see §4.1.1), the former option remains unattractive. The latter alternative, meanwhile, in which S-Structure raising of one constituent triggers lowering of another is unmotivated by any known principles of syntax or semantics.

(i) Konpyuuta-ga mainiti-no tenki-o uti-dasu
Computer-NOM daily-GEN weather print-out-IMP
'It is a computer that prints out the daily weather forecast.'

(ii) Robotto-ga atarasii zidoosya-o kumi-tateru
robot-NOM new auto-ACC assemble-build-IMP
'It is a robot that assembles the new cars.'
A more straightforward account—and one that is consistent with standard GB theoretical assumptions concerning the nature of LF—requires all quantified constituents (howsoever quantified) to undergo raising to an A'-position at LF, leaving a variable trace, in order to meet general well-formedness requirements at Logical Form. On such an account, the subjects of the sentences above are also raised at LF, but remain within existential closure on the preferred construal. A configurational LF representation of (27), which corresponds to the preferred reading of (23), will thus be of the form in (28) on the following page, in which both subject and object undergo LF raising.

(27) Atarasii zidoosya-wa, robotto-ga t kumitateru
New car-TP robot-NOM assemble-IMP

Gen_x [the new cars(x)] ∃y [robot(y) & assemble(x,y)]

The A'-position to which the GRC is raised (represented in (28) by XP) in (28) is unlikely to be an adjunction site on IP: Hoji (1985, 1986) has argued that only contrastive wa is adjoined to IP. This view, if correct, indicates that thematic WMCs and the operator Gen must be construed as being in a configurational position higher than IP. I will return to this issue in Chapter Five, where I present syntactic arguments that thematic WMCs in Japanese, including GRCs, are Specifiers of CP.
4.2.2 Against Scrambling

The semantic unambiguity of the Japanese examples suggests that GRC movement is semantically significant. It cannot be an adjunction operation such as scrambling\textsuperscript{12} or some other stylistic operation, since it is known that such S-Structure operations on constituent order can create ambiguity in Japanese (Kuno, 1973 a,b; Hoji, 1985), and may be semantically vacuous (Saito, 1989, 1990). The possibility of scrambling is suggested by Kratzer (1988), who proposes, a

\textsuperscript{12} I follow Saito (1985) in treating scrambling as an instance of Move $\alpha$ in which a constituent undergoes adjunction at S-structure to IP.
propos of examples like English (29) and German (30) and (31) below,
that indefinite objects in English may be 'scrambled' at LF into a
position where they can restrict the quantificational adverb always:

(29) since we always sponsor a good project

(30) weil wir immer ein gutes Projekt fördern
     since we always a good project sponsor
     'since there is always a good project that we sponsor.'

(31) weil wir ein gutes Projekt immer t fördern
     since we a good project always sponsor
     'since we sponsor any good project.'

English (29) is ambiguous between existential and universal
construals for the indefinite NP a good project, whereas German (30)
and (31)—in which the indefinite object has been moved at S-Struct-
ture—are unambiguous.13 Kratzer interprets these data as indi-
cating that preposing can remove an indefinite object from the scope
of existential closure in German embedded clauses and place it
within the scope of the adverb immer 'always.' The ambiguity of
English (29), the argument then goes, is to be ascribed to LF 'scram-

13 Whitman (personal communication) points out that English topicalizations
are also ambiguous:
(i) A good project , we always adopt t.
    has only a universal interpretation.
bling' of the indefinite object to a VP-external position, where it is free from existential closure and able to restrict *always*.\(^{14}\)

Similar effects may be observed in Japanese, yet are only partly replicated. Below, (32) is unambiguously interpreted with an existential reading for *ii kikaku* 'good plan.' In (33), however, scrambling of the object NP induces an additional construal, so that the sentence is interpreted ambiguously between existential and universal readings:

(32) Sony-ga itumo ii kikaku-o toriageru kara
PN-NOM always good project-ACC adopt-IMP
because
‘because Sony always adopts some good project.’

(33) Sony-ga ii kikaku-o itumo t toriageru kara
PN-NOM good project-ACC always adopt-IMP because
(a) ‘because Sony adopts any good project.’
(b) ‘because Sony always adopts some good project.’

The ambiguity of (33) is consistent with that noted by Kuno (1973a,b) and Hoji (1985, 1986) in connection with scrambling of quantified constituents. Hoji observes that the scopal interpretation of quantified expressions in Japanese can be read off S-Structure when a sentence preserves the SOV constituent order of D-Structure. This is seen in (34), due to Hoji (1986), where ‘canonical’ SOV word order is retained.

\(^{14}\) It will be recalled that in Kratzer’s account, the VP is the nuclear scope. It is arguably the case that in the German examples, *immer* is also quantifying over the VP. If so VP maximal projection is not an inherent locus of existential closure, but merely a potential one.
(34) Dareka-ga daremo-o semeta
    Someone-NOM everyone-ACC criticize-PRF

\[ \exists x \text{ person}(x) \land [\forall y \text{ person}(y) \rightarrow \text{criticized}(x,y)] \]

Scrambling, however, results in an ambiguous sentence, as shown in (35), where both quantified expressions may have wide scope at Logical Form

(35) Dareka-o daremo-ga t semeta
    Someone-ACC everyone-NOM criticize-PRF

(i) \[ \exists x \text{ person}(x) \land [\forall y \text{ person}(y) \rightarrow \text{criticized}(x,y)] \]

(ii) \[ \forall y \text{ person}(y) \rightarrow [\exists x \text{ person}(x) \land \text{criticized}(x,y)] \]

It not altogether clear why scrambling should create ambiguity in sentences like (35). Huang (1982) attempts to account for similar facts in Chinese by proposing the following condition on quantifier interpretation:

(36) **General Condition on Scope Interpretation**

\[ \text{Suppose } A \text{ and } B \text{ are both QPs or Q-NPs or Q-Expressions. Then if } A \text{ c-commands } B \text{ at } S-S, \text{ then also } c-commands \text{ at } LF. \]

(Huang, 1982: 220)

For the purposes this condition, the trace of movement also counts as a QP, hence the two quantifiers *dareka* and *daremo* c-command each other in (35). If this interpretation is correct, a possible explanation for the unambiguity of Japanese generic sentences might then be sought in the difference between the two types of quantification. The account might run as follows. In NP quantification, as seen in (35), the operator moves with the NP as part of a unitary
quantifier out of the object position. The trace therefore contains the trace of operator, and in consequence, the operator c-commanding the trace effectively c-commands the moved operator. The Gen operator, being adverbial, does not have a source in the object position, and is presumably base-generated in its Pre-IP position. Gen therefore does not cross existential closure of the nuclear predicate and is not c-commanded by that operator at any level of representation. Unfortunately such a treatment fails to explain the ambiguity of (33), repeated below, where itumo does not form a unitary constituent with its restrictive term ii kikaku.

(33) Sony ga ii kikaku-o itumo t toriageru kara
PN-NOM good project-ACC always adopt-IMP because

(a) 'because Sony adopts any good project.'
(b) 'because Sony always adopts some good project.'

An alternative, and for present purposes more promising, account of the ambiguity of (33) is suggested by the work of Saito (1989, 1990) and Saito and Lasnik (ms.), who propose that scrambling in Japanese may be semantically vacuous at Logical Form. This hypothesis is motivated by examples such as (37) below, where interpretation at Logical Form demands that the preposed Wh-phrase, which has undergone long-range extraction from the embedded clause, whose scope is marked by the complementizer ka, be reconstructed inside that clause at LF.
Example (37) demonstrates that in at least some instances a scrambled constituent must have narrower scope than that predicted by its S-Structure position. In this case, the second of the two possible construals of (35) may result from LF reconstruction of the scrambled constituent in its D-Structure object position. It is clear that some such account must be made for some generic sentences, where the WMC is in a position outside its presumed scope in the embedded clause. In (38), the WMC appears to have undergone long-range extraction from the generic clause, without affecting the relation between the GRC and the nuclear scope.

(38) Kyoozyu to iu mono-wa [Yosida-ga Professor CMP say thing-TP PN-NOM
[ t atama-ga okasii] to sinzi-konde iru] head-NOM odd-IMP CMP believe-complete-GER be-IMP

‘Professors, Yosida believes t are strange in the head.’

(38) contrasts with (17), repeated below as (39), which, as we saw, demonstrates that the GRC of an embedded sentence cannot have LF scope over the matrix clause, since the operator Gen is completely clausebounded, and cannot move out of the domain of its local clause at LF.

(37) ?dono honi-o [Mary ga [CP [John-ga t; tosyokan-kara which book-ACC PN-NOM PN-NOM library-ABL
karidasita] ka] siritagatte iru] koto borrow-prf Q know-DESID-GER be-IMP

‘the fact that which book Mary wants to know John borrowed t from the library

(38) contrasts with (17), repeated below as (39), which, as we saw, demonstrates that the GRC of an embedded sentence cannot have LF scope over the matrix clause, since the operator Gen is completely clausebounded, and cannot move out of the domain of its local clause at LF.
(39) Jill believes professors are insane.

  (a) Jill believes (Gen [professor(x)] [(insane(x))])
  (b) *Gen [professor(x)] [Jill believes ((insane(x)))]

Sentences such as (38) are problematic for a movement analysis of GRCs, but no more so than (37) is for a theory of LF wh-movement in Japanese. It is evident from the gloss in (38) that English topicalization (which I will take to be a form of scrambling) does not affect the interpretation of the sentence, i.e., it does not establish a construal corresponding to the (b) reading in (39) in which the GRC has matrix scope. In both Japanese and English, therefore, long-range S-Structure extraction of a GRC from an embedded clause does not result in an LF configuration in which the GRC is interpreted as having matrix scope. Such movement, it would appear, is semantically vacuous, with no consequences for Logical Form.\(^{15}\) In the case of GRCs — and arguably also in the case of Japanese wh-phrases\(^{16}\) — this scope is predetermined by a sentential operator.\(^{17}\)

\(^{15}\) One might speculate that movement in (38) is not completely vacuous at LF. Conceivably the scrambled constituent might restrict a different kind of operator from Gen. This might be some sort of 'topic' operator, whose nature and relationship with Gen is beyond the scope of the current inquiry.

\(^{16}\) Given that an independent interrogative marker ka must be in the C° position to indicate the scope of a Wh-question, it is conceivable that Wh-phrases in Japanese are also bare variables, and that the Wh-operator does not form a single unit with these at S-Structure. Such an analysis seems to be implicit in Nishigauchi's (1985) treatment of Japanese Wh forms that are unselectively bound by adverbial and other operators.

\(^{17}\) It is not completely clear by what derivation a scrambled wh-phrase or the GRC is reconstructed correctly at LF. Presumably this is a two-step operation in
To conclude this section, local movement of the object GRC in a generic sentence such as (27), repeated below, fails to trigger semantic ambiguity.

(27) Atarasii zidoosya-wa, robotto-ga t kumitateru
New car-TP robot-NOM assemble-IMP

\[ \text{Gen}_x [\text{the new cars}(x)] \quad \exists y [\text{robot}(y) \& \text{assemble}(x, y)] \]

Scrambling is ruled out as the mechanism by which the GRC is placed in sentence-initial position, since movement is semantically significant in that it establishes an unambiguous relation among the Gen operator, the restrictive term, and the nuclear scope. Although GRC movement must be regarded as an instance of Move \( \alpha \), it is non-vacuous at LF, and must be distinguished from potentially vacuous scrambling at S-Structure.\(^{18}\) The ambiguity of English (29), cited by Kratzer, might then be attributed, not to scrambling, but to optional LF movement of an indefinite NP to restrict the higher operator Gen.

### 4.2.3 Definite NPs and Obligatory LF Movement

If movement of indefinite NPs appears to be optional, i.e., the can be construed both universally and existentially, the same is not which the relevant constituent is reconstructed in its D-Structure position LF and then is re-raised into the position in which it is interpreted.

\(^{18}\) Note that the German examples are unambiguous, and so cannot have undergone scrambling. This is a problem the present account, for since the German facts remain unexplained.
true of definite direct objects, movement of which appears to be obligatory in generic sentences. The direct objects cited in Carlson (1989) are symptomatic of a general problem in English that it is difficult, if not impossible, to interpret an indefinite singular subject of a transitive sentence as generic, i.e., as having wide scope, in the presence of a morphologically definite object NP elsewhere in the sentence.¹⁹

Consider the following set of sentences.

(40) A student owns a car.
(41) A student owns that beautiful red Porsche
(42) A student owns the beautiful red Porsche parked in the dean’s space.

The subject of (40) may be construed either existentially or generically. But in (41) and (42) the generic construal for the subject is all but eliminated. Conceivably, in (41), the existential construal of the subject might derive from the extreme pragmatic unlikelihood of students in general owning a unique vehicle indicated by the deictic marker that. But pragmatic plausibility fails to account for (42); although it allows both generic and non-generic construals, this sentence strongly favors a reading in which the subject is interpreted existentially on both interpretations. This interpretation is high-

¹⁹ An indefinite subject is quite readily construed as generic in the presence of a definite object, when a functional relationship exists between the referents of the two constituents. This can be seen in the contrast between (i) and (ii):

(i) A dog eats the meat. [existential only]
(ii) A dog eats the meat that his master throws him. [ambiguous]
lighted when an overt adverb of quantification like *always* is inserted into the sentence:

(43) A student always owns the beautiful red Porsche parked in the dean's space.

(44) \(\text{always}_x \ [\text{beautiful red Porsche}... (x)] \ \exists y \ [\text{student}(y) \land \text{owns}(x,y)]\)

(43) is normally interpreted with the definite NP restricting the adverb of quantification as represented in (44), where *always* quantifies universally over beautiful red Porsches.\(^{20}\) While a theory of English definite NPs is beyond the scope of this dissertation, one important consequence of these data is that we must apparently add definite NPs to the class of NPs that are subject to adverbial quantification. This is unpredicted by Russellian theories that treat definite NPs as referential expressions that designate unique individuals. (Nor is it predicted in a Carlsonian reference-to-kinds model of generic sentences.) The possibility that definite NPs might restrict adverbial operators is implicit in Heim's (1982) reduction of English definite and indefinite NPs to the distinction between old (familiar) and

\(^{20}\) There is also an alternative interpretation in which the indefinite subject also restricts the adverb of quantification.

(i) \(\text{always}_x \ [\text{beautiful red Porsche}... (x)] \ \exists y \ [\text{student}(y) \land \text{owns}(x,y)]\)

(ii) \(??\text{always}_y \ [\text{student}(y) \land \text{beautiful red Porsche}(x)] \ \exists x \ [\text{owns}(x,y)]\)

This interpretation is highly marginal and seems to require a great deal of contextualization.

(iii) What are the defining characteristics of a student?
A: Well, a student drinks a lot. A student always owns the beautiful red Porsche parked in the dean's space.
and new variables with respect to a Discourse File. And indeed, the present model of generic sentences requires proper names to be able to restrict Gen when a sentence is construed habitually (see Krifka (1988) for discussion), even though no quantificational effects are observed owing to the referential nature of the NPs. In (43) above, the definite NP is intensional, with the consequence that always quantifies over different vehicles in different states of affairs. Likewise, in (42) Gen is presumed to quantify generically over different possible instances of illegally parked vehicles. Moreover, on the assumption that Gen is behaving in the same manner as the overt adverbial operator, the NP must be regarded as moving into a position where it restricts that operator.

Neither the idea that definite NPs may have variable-like properties nor the notion that they may move at Logical Form is particularly new in generative theory. Chomsky (1981), in his account of Strong Crossover, subsumes variables under R(eferential) Expressions (names), an analysis that suggests that R-Expressions may have absolute widest scope at Logical Form. As for movement, Huang (1982) suggests that definite NPs are widest-scope quantifiers, undergoing movement at a post-LF level. If, as seems to be the case, Gen has obligatory sentential scope, then movement of the


21 Similar notions are also found in a generative semantics framework by McCawley (1970) and Gundel (1974), both of whom posit mechanisms by which at least definite NPs are 'lowered' into their S-structure positions from a D-Structure that contains some of the attributes of LF.
definite NP into a position where it can restrict that operator is wholly consistent with such conjectures.

The hypothesis of movement in contexts such as (43) is supported crosslinguistically by the fact that in Japanese the object must undergo overt S-Structure movement in order to restrict an adverb of quantification such as itumo. This has already been observed in embedded contexts in connection with the discussion of scrambling. The same also appears to be true of matrix sentences, except that wa-marking also plays a central role in the interpretation. When the subject is wa-marked, as shown in (45), the sentence has either (i) the rather implausible interpretation in which gakusei restricts itumo and so is construed generically, or a more plausible definite reading as in (ii). In each case, the object NP is construed existentially.


(i) 'Students always own illegally parked magnificent Porsches.'

(ii) 'The students always own illegally-parked magnificent Porsches.'

In (46), on the other hand, itumo ranges over illegally-parked expensive cars, and the sentence assigns an existential reading to the subject NP.

(46) [ihoo tyuusya-sareta subarasii ] Porusye]-wa illegal park-PASS-PRF magnificent Porsche-TP
itumo  gakusei-ga  motte  iru.
always  student-nom  hold-GER  be-IMP

'A student always owns the illegally-parked magnificent Porsche.'

always_x  [illegally parked Porsche(x)]  \exists_y  [student(y) \land
owns(x,y)]

To obtain the requisite reading, it appears that the object must
move at S-Structure in Japanese in order restrict the overt operator at
LF, just as we have had to assume LF movement of the definite
object in the English (43). In short, the adverbial quantification
model demands that certain constituents—definite NPs in English
and thematic WMCs in Japanese—move at Logical Form into a posi-
tion where they restrict the adverb.

Since the WMC in (46) is not necessarily to be construed as
'anaphoric' in Kuno's terms, we must ask what generalization can
be made about the relationship between wa-marking and definiteness

\[22\] When neither element is a WMC, the nominative subject receives an
obligatory exhaustive listing focus, in which case the sentence is ambiguous in at
least three ways. The sentence is, however,

(i) Gakusei-ga  itumo  [[iihoo  tuuysya-sareta  subarasii ]
student-NOM  always  illegal  park-PASS-PRF  magnificent
Porusye]-o  motte  iru.
Porsche-ACC  hold-GER  be-IMP

(a)  'It is students who always own magnificent illegally parked
Porsches.'
(b)  'It is always students who own magnificent illegally parked
Porsches.'
(c)  'It is always students who own the magnificent illegally parked
Porsches.'
marking in the two languages, i.e., what the two morphological types have in common. We have already seen in Chapter Three that thematic WMCs seem to be outside the scope of existential closure at Logical Form. The answer would then seem to be that both thematic WMCs in Japanese and definite NPs in English must share this property.\textsuperscript{23} We may formulate this in terms of two constraints on the well-formedness of LF representations containing definite NPs and 'thematic' elements.

(47) \textit{Constraint on LF Representation of Definite NPs}

\begin{quote}
An NP that is morphologically marked for definiteness does not occur within the scope of existential closure at Logical Form.
\end{quote}

(48) \textit{Constraint on the LF Representation of Themes}

\begin{quote}
A thematic constituent does not occur within the scope of existential closure at Logical Form.
\end{quote}

Since, on Heim's treatment, definite NPs are not inherently quantified expressions, but are predicated of variables that are familiar with respect to the Discourse Files, the constraint in (47) effectively states that only a new variable can be existentially bound. (48), in tandem with (47), then allows us to account for the fundamental correlation of GRCs and anaphoric \textit{wa} that characterizes Kuno's (1973a, b) account of thematic \textit{wa}: a thematic WMC can never be construed existentially. Movement, at LF and S-Structure, is thus

\textsuperscript{23} A similar notion is developed within a different framework by Gundel (1974).
motivated by the need for the constituent in question to be outside existential closure. It should be emphasized however, that the above descriptive constraints do not equate definiteness with thematicity, but allow us to define both notions in terms of a constituent's position vis-à-vis its position at Logical Form.

Not only does the above hypothesis explain the obligatory movement of the direct objects in the above examples, both with Gen and with overt adverbial operators, it also predicts that both definite NPs and thematic WMCs may restrict only those adverbial operators that do not have existential implications. This hypothesis is most readily tested in Japanese, where it seem that whether in conjunction with GRCs or otherwise, thematic wa licenses only those quantifiers that are broadly compatible with universal quantification. Kuno (1973a) observes that numerical floating quantifiers may not be employed in Individual-Level predicates.24

(49) *Gakusei-wa sannin kasikoi.
Student-TP three intelligent-IMP
'The) three students are intelligent.'

24 Tateishi (1988) employs the impossibility of sentences such as (49) as an argument that the subject of the I-Level predicate must have been base-generated in IP. This assumes that the quantifier must bind a trace of movement. However the fact that other kinds of quantifiers are possible suggests that this argument is inadequate and that reference must be made to other factors. It is likely that numeral quantifiers such as sannin express the cardinality of the referents involved in some event.
(49) *Gakusei-wa sannin kasikoi.
Student-TP three intelligent-IMP
'(The) three students are intelligent.'

However, when the numeral quantifier is modified to incorporate some form of universal quantification, such sentences become well-formed:

(50) Gakusei wa sannin-tomo kasikoi.
Student-TP three-together intelligent-IMP
(i) 'All three students are intelligent.'
(ii) 'The three students are all intelligent.'

The constraint on the type of numeral classifiers occurring in conjunction with definite WMCs is also found in conjunction with thematic WMCs of Stage-Level predicates, as illustrated by (30).25

(51) *Kodomo wa sannin khoen-de asonda
child-TP 3-CL park-LOC play-PRF
'The three children played at the park.'

IP. This assumes that the quantifier must bind a trace of movement. However the fact that other kinds of quantifiers are possible suggests that this argument is inadequate and that reference must be made to other factors. It is likely that numeral quantifiers such as sannin express the cardinality of the referents involved in some event.

25 (30) is acceptable on a contrastive reading for wa, where kodomo can be construed existentially, i.e., one corresponding to 'three children [but no dogs or adults] played in the park.' Obviously one must be able to say in Japanese, 'the three children played in the park,' but in this case the gerund of the copula must be used: sannin de 'as a threesome.'
A thematic WMC, it appears, may restrict only those adverbial quantifiers that are either inherently universal, or are concerned with some degree of proportion that either closely approximates or is in some manner broadly consistent with universal quantification.\textsuperscript{26,27} The following all conform with this generalization.

(52) Gakusei wa minna kasikoi

\begin{quote}
all
\end{quote}

'The students are all smart.'

\textsuperscript{26} Partee (1989) observes that there appear to be two kinds of adverbial quantification, those having to do with proportion, and those having to do with number.

\textsuperscript{27} One serious problem with this characterization is the interpretation of adverbs such as \textit{rarely}, which are compatible with both definite and indefinite subjects in English:

(i) A lion rarely misses a meal.
(ii) The lion rarely misses a meal.

In (i), \textit{rarely} is able to quantify a \textit{lion}. In (ii), however, I think it is not. Here \textit{rarely} can only quantify over occasions, the interpretation apparently being as in (iii):

(iii) The lion, in general, rarely misses a meal.

The same is true of Japanese, where we find the following.

(iv) Raion-wa metta ni emono-o nogasanai
    lion-TP rarely prey-ACC let-escape-NEG-IMP
    'The lion rarely misses his prey.'

Here, however, the data is obscured by the negative polarity of \textit{metta-ni}. It may be noted that non-negative-polarity \textit{mare ni} appears to be unacceptable with thematic \textit{wa}.

(v) *Raion-wa mare ni emono-o nogasu
    lion-TP rarely prey-ACC let-escape-IMP
    'The lion rarely misses his prey.'
(53) Gakusei wa dare de-mo kasikoi
who COP-GER-also
'Any of the students you chose is smart.'

(54) Gakusei wa hitori-nokorazu kasikoi
1-cl-remain-NEG-GER
'The students are, without exception, smart.

(55) Gakusei wa daitai kasikoi
mostly
'The students are for the most part smart.

(56) Gakusei wa taitei kasikoi
generally
'The students are generally smart.'

In (53) and (54), the gerundal floating quantifiers are probably to be analyzed as forms of conditional, a fact that suggests the presence of an invisible operator in the manner of Heim (1982).28 Others, such as daitai and taitei in (55) and (56), can be characterized as adverbs of quantification (Nishigauchi (1986) discusses these at length). Floating quantifiers that violate the general requirement of consistency with universal quantification, on the other hand, are, like numeral quantifiers, impermissible. The following are ill-formed; not even partitive readings are possible under adverbial quantification.

(57) *Gakusei wa sukosi kasikoi
few
'The students are a few of them smart.'

28 Nishigauchi (1986) treats forms such as dare demo as being cases of non-selective binding by a Heimian operator.
4.3 Weak Crossover Effects

The hypothesis that GRCs are raised at LF to restrict the Gen operator in both Japanese and English predicts that GRCs should exhibit certain effects associated with other forms of quantification. While many scopal effects are not forthcoming owing to the clause-bounded nature of Gen, the behavior of definite GRCs suggests that these are obligatorily moved outside the scope of existential closure. The quantificational model also predicts that object GRCs will show Weak Crossover effects, a standard diagnostic in Government and Binding theory for LF syntactic movement of quantifiers. Examples (59)(a)–(d) below illustrate WCO effects for the standard contexts identified by Chomsky (1981).

(59) (a) ?*His; mother loves everyone; \[Quantifier raising\]
(b) ?*His; mother loves someone; \[Quantifier raising\]
(c) ?*Who does his; mother love t; \[Wh-movement\]
(d) ?*His; mother loves JOHN; \[Focus movement\]
    (with strong focus stress on JOHN)

The weak ungrammaticality on the interpretations indicated by the coindexed subscripts is taken by Chomsky (1977) to be an argument for the existence of Logical Form as an independent level at which apparently disparate quantificational phenomena can be uni-
formly represented. On an LF account, examples (101)(a) – (d) all have LF representations in which the pronoun *his* stands to the left of the variable left by movement of the quantified constituent.

(60) (a) for every x: man x [ his mother loves x ]
(b) for some x: man x [ his\_x mother loves x ]
(c) for which x: person x [ his\_x mother loves x ]
(d) OP\_Focus John\_x [ his\_x mother loves x ]

As a descriptive generalization to account for this phenomenon, Chomsky (1976) proposes a Leftness Condition, a stipulation on the well-formedness of Logical Form that applies to the configurations that obtain after the raising of the quantificational element:

(61) A variable cannot be the antecedent of a pronoun to its left.

Within the framework of the tripartite model of quantification, the basic descriptive generalization is that WCO effects in (60)(a)–(d) arise whenever a sentence conforms to the LF template in (62), where the pronoun embedded in an NP in the nuclear scope appears to the left of the variable trace of movement of a quantified phrase.29

(62) Op\_x [NP \_Restrictive Term\_x [ ... [NP... pron\_x ...]...t\_x... Nuclear Scope ]

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29 Koopman and Sportiche (1982) offer an alternative account in which they attempt to subsume WCO under the Bijection Principle, a condition on LF well-formedness that prescribes an operator from directly binding more than one variable, or a variable from being bound by more than one operator. However, the Bijection Principle, if it exists as a rule of grammar, can only be a condition on the well-formedness of NP-quantification; adverbial operators must be able to range simultaneously over several variables at Logical Form as a consequence of non-selectivity. I therefore ignore the Bijection Principle as an explanation of WCO, and assume instead that some version of the Leftness Condition is the correct generalization.
4.3.1 WCO Effects in Japanese

4.3.1.1 Matrix Sentences

S-Structure scrambling and topicalization in Japanese are standardly held not to exhibit WCO effects. Saito (1985), for example, suggests that constituents that are A'-adjoined by scrambling are exempt from WCO. Consider (63) and its English counterpart (64):

(63) [Johni-o [karei-no hahaoya-ga t s ai-site iru] (koto) pn-acc he-gen mother-nom loving be-imp (fact) ‘(the fact that) Johni, his mother loves.’
(64) Johni, his mother loves t s.

The grammaticality of the two sentences is surprising, since the LF trace of an A'-bar adjoined constituent is assumed to be a syntactic variable under Chomsky’s functional determination of empty categories. The LF representations of (63) and (64), shown below, fit the WCO template in (62), and should be ruled out as ungrammatical by the Leftness Condition.

(65) [Johni-o [karei-no hahaoya-ga x i ai-site iru]
(66) Johni [his mother loves x i]
(62) Op x [NP Restrictive Term] x [ ... [NP... pron x ...]... t x... Nuclear Scope ]

Saito circumvents this difficulty by proposing that a referential NP in a non-argument position at S-Structure may be the antecedent of a pronoun, thus allowing kare in (63) to take its reference from
John. Saito's discussion, however, is confined to referential NPs; he does not address the question of what happens when other NPs, such as syoo setuka 'novelist' or kagakusya 'scientist,' are employed as GRCs. These display significant subject-object asymmetries with respect to the possibility of coreference with kare.

For independent syntactic reasons, I am constrained to employ kare 'he' in the discussion that follows, rather than the reflexive zibun 'self' whose credentials as a candidate for a bound-variable construal are unimpeachable. Accordingly the data must be treated with some circumspection, for many speakers regard the use of kare as something less than idiomatic. In general, kare always favors an obviative construal with respect to a possible antecedent within the same clause. Nevertheless, kare does, albeit somewhat marginally, allow coreference with a generic-related NP on the bound-variable reading. The judgments given below are subtle and must be interpreted as representing relative degrees of acceptability, rather than clearcut ungrammaticality.

For some speakers, it seems, preposing an object GRC by thematization over an NP containing kare results in a significantly

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30 The use of zibun, whose credentials as a candidate for variable binding have otherwise been established by Saito and Hoji (1983), is ruled out by the fact that any sentence-internal antecedent of zibun must be a subject; it can never be an object. This is illustrated by (i), observed by Kuno (1973):

(i) John-ga Bill-ni zibunj-ni koto-o hansita
   PN-NOM PN-DAT self-GEN matter-ACC speak-PRF

'John talked to Bill about himself.'
worse sentence than when the WMC is a definite NP.\textsuperscript{31} This is illustrated in the contrast between the (a) sentences of (67) and (68) and the structurally similar (b) examples, where perfective verb morphology and the deictic demonstratives *sono* ‘that’ or *ano* ‘that over there’ force a definite construal for the WMC.

\begin{align*}
(67) \text{(a)} & \quad *? \text{Kagakusya}_i \text{(to iu mono)-wa} \text{ kare}_i \text{-no} \\
& \quad \text{say thing-TP he-GEN} \\
& \quad \text{raibaru ga } t_i \text{ kononde koogeki suru.} \\
& \quad \text{rival-GEN delightedly attack-IMP} \\
& \quad \text{‘A scientist, his rivals attack with glee.’} \\
& \quad \text{(b)} & \quad ? \text{Sono kagakusya}_i \text{-wa} \text{ kare}_i \text{-no raibaru-ga} \\
& \quad \text{that scientist-TP he-GEN rival-NOM} \\
& \quad t_i \text{ kononde koogeki sita} \\
& \quad \text{delightedly attack-PRF} \\
& \quad \text{‘That scientist, his rivals attacked.’}
\end{align*}

\begin{align*}
(68) \text{(a)} & \quad *? \text{Isya (to iu mono)-i-wa, nanika-ga} \\
& \quad \text{say thing-TP something-NOM} \\
& \quad \text{atta toki, kare}_i \text{-no kanzya-ga } t_i \text{ uttaeru} \\
& \quad \text{exist-PRF time he-GEN patient-NOM sue-PRF} \\
& \quad \text{‘A doctor, his patients sue whenever something goes wrong.’} \\
& \quad \text{(b)} & \quad ? \text{Ano isyai-wa, kare}_i \text{-no kanzya-ga } t_i \text{ uttaeta} \\
& \quad \text{That doctor-TP he-GEN patient-NOM sue-PRF}
\end{align*}

Not all speakers observe these effects, a fact that is consistent with the ‘weak’ status of WCO effects. Nevertheless, the (a) examples

\textsuperscript{31} This observation was originally made to me by Tashiro Yuri. The deviance of the examples has subsequently been verified in discussions with other native speakers of Japanese.
do seem to be relatively degraded in comparison with their (b) counterparts. That the degrading is due to quantificational movement of an object GRC across the subject-internal pronoun can be seen by comparing (67)(a) with (69), where NP-movement of the GRC in a passive sentences does not affect the acceptability of the sentence.

(69) ?Kagakusyai (to iu mono)-wa karej-no raibaru-ni
scientist CMP say thing-TP he-GEN rival-DAT
koogeki-sareru
attack-PASS-IMP

'A scientist is attacked by his rivals.'

The generalization is that the sentences may be moderately acceptable when kare is A'-bound by at S-Structure by a definite object WMC as in (67)(b) and (68)(b), or when movement of a wa-marked GRC does not prepose the constituent across a pronoun. Preposing a GRC object across the pronoun in (67)(a) and (68)(a), on the other hand, sets up an LF structural configuration that conforms precisely with our WCO template in (62).32

32 One minor complication of the data is that a plural pronoun can rescue a sentence from WCO effects.

(i) Kagakusyai-wa kare-rai-no raibaru ga kononde t"
scientist-TP he-PL-GEN rival-GEN delightedly
koogeki suru.
attack-IMP

'Scientists, their rivals attack with glee.'

This sentence is ambiguous between a distributive reading in which karera relates to plural individual scientists and, and (in the modern world) a slightly less plausible collective reading that refers to scientists as a whole. (On the latter
If GRCs were to constitute kind-referring constants, as presumed by Kučo (1973) and Carlson (1977), their behavior in WCO contexts is predicted to be consistent with that of referential expressions. The bifurcation in the behavior of GRCs and referential NPs (including proper names, as in (63)) in WCO contexts confirms the quantificational nature of generic sentences.

4.3.1.2 Embedded Clauses

The judgments are sharper in embedded sentences, where we must apparently assume that the GRC remains in situ at S-Structure and movement must take place at LF as in English. (72) shows sentences embedded under the factive complementizer koto. On a generic construal of (72)(a), coreference with kare is difficult, if not altogether impossible, while on a definite reading, forced by the introduction of sono ‘that’ as in (72)(b), the sentence is grammatical.

(72) (a) *?Karei-no bengosi-ga yoogisyaj-o tyanto
       he-GEN laywer-NOM suspect-ACC properly

(rereading, raibaru might refer to astrologers or flat earthers.) I will surmise that since overt plural forms in Japanese must denote a specific set of entities, the WMC in the above sentences allows a construal that refers to the set of scientists, equivalent to the English definite the scientists.
mamoru koto-wa toozen da.  
defend-PRF CMP-TP natural COP-IMP

‘*?It is appropriate that his lawyer defends a suspect.’

(b) Karei-no bengosi-ga ano yoogisya-o tyanto  
he-GEN lawyer-NOM that suspect-ACC properly

mamotta koto-wa husigi de-wa nai.  
defend-PRF CMP-TP strange COP-GER-TP exist-NEG

‘There is nothing strange about the fact that his lawyer defended that suspect.

Examples of this kind suggest that the presence of the complementizer may block S-Structure movement of the GRC into Spec CP, since these are incapable of head-selecting the Gen operator at S-structure. Movement of the object GRC must therefore be entirely at LF, again resulting in an LF configuration that matches the template given in (62).

(73)(a) and (b) illustrate the same facts in another type of complement clause. Again, without the assumption of LF movement of a quantified constituent, the difference in the acceptability between the (a) and (b) examples goes unaccounted for:

(73) (a) *?Karei-no raibaru-ga kagakusya-i-o kononde  
he-GEN rival-NOM scientist-ACC delightedly

koogeki-suru zizitu-o Noberu-syoo-no  
attack-IMP fact-ACC Nobel Prize-GEN

Buraun-hakase-wa wasurete ita.  
PN-Ph.D.-TP forget-GER be-PRF

‘The Nobel Prize winning Dr. Brown forgot the fact that his rivals delight in attacking the scientist.’
(b) ?Karei-no raibaru-ga sono kagakusya-o kononde
he-GEN rival-NOM that scientist-ACC delightedly

koogeki-suru zizitu-o Noberu-syoo-no
attack-IMP fact-ACC Nobel Prize-GEN

Buraun-hakase-wa wasurete ita.
PN-Ph.D.-TP forget-GER be-PRF

'The Nobel Prize winning Dr. Brown forgot the fact that
his rivals delight in attacking that (particular)
scientist.'

4.3.2. WCO in English Generic Sentences

4.3.2.1 Bare Plural and Indefinite NPs

In Japanese, movement of an NP to restrict Gen may take
place both at S-Structure and at Logical Form. In English, I have
hypothesized that GRCs may undergo the same movement at Logical
Form in order to account for some of Carlson’s problematic data.
This hypothesis predicts that we will find also WCO effects in English
generic sentences when an object constituent is the related element.
It turns out that the facts in English, not being complicated by
independent considerations of the acceptability of the pronoun, are
quite clear. Consider the following examples.

(74) *Theiri mothers love childreni.
(75) *Theiri teachers traditionally hate studentsi.
(76) *Theiri doctors always neglect patientsi.
Coreference between *their* and the bare plural NP is completely inadmissible. Yet when the subject and object roles are reversed so that the bare plural c-commands the NP containing the offending pronoun, comparable sentences are quite acceptable.

(77) Children* love their mothers*.
(78) Students* hate their teachers*.
(79) Patients* abuse their doctors*.

This behavior is quite unpredicted on the account of Carlson (1977), in which bare plurals are analyzed solely as kind-referring NPs. Quite the contrary, (74) ~ (76) are predicted to be grammatical, as demonstrated by the simple expedient of substituting proper names for the bare plural NPs:

(80) Their children love Mr. and Mrs. Brown.
(81) Their dogs ingratiated themselves to John and Mary.

The ungrammaticality of (74) ~ (76) is explicable in a manner consistent with known phenomena only if it is assumed that the bare plural form is (i) quantificational, and (ii) undergoes movement at Logical Form. These examples may thus be considered to constitute the single most important syntactic argument that GRCs must be analyzed as quantificational in the Government and Binding theoretic sense that they take part in operator variable relations. I take this data as vindication of the hypothesis presented earlier in this chapter that all GRCs move at LF to restrict Gen, the movement
resulting in a configuration that matches the now familiar WCO template in (62).

(82) \[ \text{Gen}_x \text{ children}_x \text{ their}_x \text{ mothers love } t_x \]
(62) \[ \text{Op}_x [\text{NP} \text{ Restrictive Term}]_x [\ldots [\text{NP} \ldots \text{pron}_x \ldots] \ldots t_x \ldots \text{ Nuclear Scope}] \]

It is thus possible to demonstrate the correctness of generalizing generic movement, Wh-movement and LF quantification as tripartite structures at Logical Form. This enables us to admit a fourth category to Chomsky's (1982) canon of WCO effects: the LF rule of Generic Raising.

(83) i. The rule of quantifier movement
    ii. The LF rule of WH movement
    iii. The LF rule of focus
    iv. The rule of Generic movement \[

WCO effects in English generic sentences are not confined to the bare plural examples above, but extend to indefinite singular and—more surprisingly in view of conventional assumptions that definite NPs are quantificationally inert—definite singular NPs. The following sentences with indefinite singular objects are difficult to construe generically.\[33\]

(84) \text{*?Her}_i \text{ child loves a mother}_i.

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\[33\] These examples violate WCO independently under the standard analysis of indefinite singular NPs as existentially quantified. For some reason, these sentences are more unacceptable on the existential construal for the object NPs, than they are on a generic interpretation.
4.3.2.2 WCO and Definite NP Objects

Of particular interest is the fact that definite NPs exhibit the same effects, though apparently in somewhat weaker form than the other two cases. In the following, the (a) sentences are of low acceptability on a reading when construed generically with the definite NPs coindexed with a pronoun on their left.

(87) (a) ??His cabinet meets the president on a regular basis.
(b) A cabinet officer meets the president on a regular basis.
(88) (a) ??His rivals attack the scientist at every opportunity.
(b) Rivals attack the scientist at every opportunity.
(89) (a) ??Her roommate looks after the student when she is ill.
(b) A roommate looks after the student when she is ill.

In (87)(a), the generic-related interpretation, in which the president is construed as referring to different individuals in different states of affairs, seems to be unavailable on a reading where his is coreferential with the president. The same holds of (88)(a) and

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34 For reasons that I am presently unable to explain, there appears to be a hierarchy of relative acceptability in WCO contexts, in which singular indefinite objects may be marginally more acceptable than bare plurals, and definite objects yet more acceptable still. One possibility is that with the definites a degree of discourse linking is possible.
(89)(a): the definite NP cannot easily corefer with the pronoun on a generic reading of the sentence. In contrast, the (b) examples show that the sentences are acceptable on a reading where the subject NP is construed existentially and the definite NP is interpreted as the related element of the generic and is presumed to have undergone movement at logical form according to the principles delineated in the earlier sections of this Chapter.

On the referential construal of the definite NP, coindexation with the pronoun presents no difficulty, as evidenced by the obvious acceptability of (90) – (92) below, where the definite NPs objects are replaced by proper names, and the sentences are construed as referring to a habitual activity of the subject NPs.35

(90)  (a)    ?*His i cabinet meets the president i on a regular basis.
       (b)    His i cabinet meets President Bush i on a regular basis

(91)  (a)    ??His i rivals attack the scientist i at every opportunity.
       (b)    His i rivals attack Dr. Snarf i at every opportunity.

(92)  (a)    ??His i roommate looks after the student i when he is ill.
       (b)    His i roommate looks after Bill, whenever he is sick.

35 The possibility of an interpretation in which both elements are moved into the restriction may explain why some sentences seem quite acceptable, but only on a reading where the subject is also a GRC, as in when the subject NP relates to inalienable properties that are entailed by the entity concerned:

(i)    His thick fur protects the/?a sea otter from the cold.
The contrast is also observed between generic and non-generic readings for the definite object NP. Below, the (a) sentences are marginal on a generic construal for the definite NP objects, but the (b) sentences, where past tense favors a preferred referential reading for the definite NP, are unexceptionable on that preferred reading. (On the dispreferred generic construal, these sentences remain just as deviant as in the (a) examples.)

(93) (a) ??His\textsubscript{i} cell houses the prisoner\textsubscript{i} until his\textsubscript{i} release.
(b) His\textsubscript{i} cell housed the prisoner\textsubscript{i} until his\textsubscript{i} release.

(94) (a) ??Her\textsubscript{i} father gives the bride\textsubscript{i} away at her\textsubscript{i} wedding.
(b) Her\textsubscript{i} mother gave the bride\textsubscript{i} away.

The judgments shown are for the generic readings of the (a) sentences and the preferred referential readings of the (b) sentences. The generality of the phenomenon is indicated by the fact that it is not restricted to direct objects, but is also operative in conjunction with indirect objects.\textsuperscript{36}

(95) (a) ??His commander grants the soldier compassionate leave.
(b) His commander granted the soldier compassionate leave.

\textsuperscript{36} It will be observed that sentences such as (76) (a) are considerably improved if there is strong focus on the subject NP. An account of such facts, however, must await a satisfactory treatment of focus.
The contrast between the referential definite and generic construals is quite systematic and inexplicable under standard generative accounts of pronominal coreference. Chomsky's 1981 Binding Theory cannot rule out coreference on the readings intended, since the structures fall foul of no binding principle. Of the three binding principles, only Condition C, which requires that an R-expression be free from binding, is potentially relevant here. But because the pronoun is embedded within the NP, it does not qualify as a potential binder of the definite NP; the sentence therefore does not violate Condition C, a fact that is readily confirmed by the well-formedness of any of the above sentences on a non-generic reading for the definite NP. Short of invoking some totally new principle to account for the behavior of definite GRCs, their behavior can be accounted for if they are analyzed as undergoing raising at LF to restrict Gen.

It has been proposed in GB theory that all NPs are variables at logical form. Chomsky (1981), suggests, a propos of Strong Cross-over, that variables be assimilated to R-expressions in order to bring SCO phenomena within the purview of Condition C of his binding theory. Moreover, there has been a strong and persistent intuition that the scopal inertness of definite NPs is attributable to their having widest scope over the sentence. It will be recalled that Huang (1982) proposes that definite NPs are moved at a post-LF level of representation, at which WCO does not apply. However, the WCO effects in conjunction with definite GRCs, indicate that WCO is applicable to at least one subclass of definite NPs. The presence of WCO effects in
generic contexts indicates that least one class of R-expressions must undergo LF movement in English. Inasmuch as the distinction between English definite and indefinite NPs is reduced in Heim (1982) to a question of whether they introduce an old or a new variable at the post-LF level of Discourse Files, the possibility that definite constituents might display the behavior depicted above is implicitly predicted by her model. The WCO data bear out the hypothesis that we can analyze the NP objects seen in Section 5.1.2 as undergoing LF movement into the restrictive term of the Gen operator, and thus account for the interpretation of the sentences that proved so problematic for Carlson's account.

4.4 Generic Sentences and the LF Hypothesis

The hypothesis that there is a syntactic component called Logical Form at which scopal relations among quantificational elements can be represented, though still controversial, has provided generative linguists with an important means of making unifying generalizations across different types of quantificational elements.

Equally importantly for the theory of universal grammar, it has yielded a means of representing related phenomena across languages in a way that we can begin to compare their properties in a theoretically illuminating fashion. It is assumed in generative theory (e.g., Higginbotham (1983)) that representations at LF will be the same across languages. In the past, this assumption has led
linguists to postulate that S-Structure phenomena in English that have consequences for logical form will be matched by LF counterparts in other languages, even though such phenomena may not directly be manifested at S-Structure in those languages. This has led to important discoveries. A case in point is the development of the LF movement hypothesis for Wh-phrases-in-situ in Chinese (Huang, 1982) and Japanese (Saito and Hoji, 1983; Saito, 1985; Hoji, 1985; Nisigauchi, 1986), where the existence of WCO effects has been taken as evidence for the LF movement of Wh-elements. Here the LF hypothesis has provided an abstract level of representation for making unifying crosslinguistic generalizations concerning a class of quantificational elements whose behavior cannot otherwise be related in models that lack this level of representation.

The LF movement hypothesis for Wh in Japanese and Chinese would not have been possible if there were no Wh- movement at S-Structure in English. By the same token, S-Structure movement of wa-marked GRCs in Japanese provides the crucial data that GRCs may undergo movement into a position where they stand as the restrictive term of a quantificational operator that has wide scope over any existential operator. This hypothesis is partly supported by certain apparent scopal facts in English and Japanese as we have seen. The existence of Weak Crossover effects in generic sentences in both languages demonstrates conclusively that genericity must classed with other more familiar forms of quantification.
Chapter Five

Movement to Spec, CP

The main features of the hypothesis as developed so far are the following:

(1) (i) Generic sentences denote a relation between a GRC and the nuclear scope defined by an invisible Gen operator.

(ii) In English, the Generic Related Constituent undergoes raising at LF to restrict Gen, which may quantify generically over any free variables within the restriction.

(iii) As a parameter of Universal Grammar, LF movement is matched by S-Structure movement of a WMC in Japanese. No such S-Structure movement takes place in English.

In this chapter, I will explore a further position, to wit:

(iv) The S-Structure landing site for GRC movement is the Specifier of CP position.

The implication is that the Spec, CP position will also be the landing site for movement at Logical Form. Much of the discussion
in this chapter will center on WMCs that are not GRCs. The picture with respect to the landing site is greatly clouded by the fact that wa-marking is the unifying characteristic of a syntactically diverse collection of operations and constructions, including Left-Dislocation, Topicalization, and association with constituent focus, in addition to its use in generic sentences. These structures will need to be identified and set aside as irrelevant. I will review the arguments of Saito and Hoji concerning the structural correlates of thematic and contrastive wa, which I will interpret as meaning that thematic WMCs, and, by extension, GRCs, are Specifiers of CP, while contrastive wa is IP adjoined at S-Structure and LF. It will also be necessary to show, contra Hoji (1985), that thematic WMCs need not necessarily be base generated in the Spec, CP position, but may also undergo local movement into that position.

It will also important to reject the hypothesis that wa is part of a determiner phrase, as has been suggested by Tateishi (1988, 1990) and Tonoike (1989). I will argue that wa is not the operator in WMCs and is not to be analyzed as the analogue of determiner operators like every and Wh. This in turn has significant consequences for the properties of CP in Japanese.
5.1 Thematic WMCs as Specifiers of CP

5.1.1 On the Status of Non-Lexical Projections

It is by no means universally accepted that non-lexical categories have any relevance to Japanese. Kuroda (1986) and especially Fukui (1986) have argued, chiefly on the basis of the apparent iterativity of nominative subjects in Japanese, that functional categories are either lacking or highly defective in Japanese, and that all subjects are VP-internal.\(^1\) On Fukui’s and Kuroda’s accounts, nominative case in Japanese is not abstract case assigned under government by I\(^o\) as in English, but a structural case in which INFL plays no role.

First let us briefly consider the matter of the CP projection. Fukui (1986) argues that the various particles that might otherwise seem plausible candidates for C\(^o\) heads are either nouns (e.g., no, and the interrogative particle ka) or post-positions (e.g., the particle to). In evidence for this position, Fukui cites the fact that a sentence headed by ka can bear nominative and accusative case and be embedded under to. Thus:

\[(2) \text{Iku ka-ga mondai da go-IMP Q-NOM problem COP-IMP} \]

'It is whether he goes that is at stake.'

\(^1\) Fukui (1986) claims that there is no CP in Japanese, and that IP is marginal and highly defective. On Fukui’s account WMC subjects are presumed to be in IP.
(3) Iku ka-o mondai-ni sita go-IMP Q-ACC problem-DAT do-PRF

'He made an issue of whether he is going.'

(4) Iku ka to kiita go-IMP Q QT ask-PRF

'He asked if I am going.'

If *ka* is analyzed as a complementizer, the above examples should violate Stowell's (1981) Case Resistance Principle, which prohibits a potential case assigner (e.g., a clause) from appearing in a position where it receives case. However, the claim that *ka* is a noun is readily refuted. For one thing, apart from the ability to bear case and show up at the head of a clause, *ka* shows none of the other distributional characteristics of nouns. It cannot, for example, be preceded by a deictic marker such as *sono* 'that':

(5) *sono ka-o kiita that Q-ACC ask-PRF

'He asked why.'

Nor does *ka* exhibit the standard forms of prenominal modification observed when a copula clause modifies a noun.

(6) Sensei-ga Amerikazin da 
teacher-NOM American COP-IMP

'It is the teacher who is an American.'

(7) [Sensei-ga Amerikazin Ø no] kurasu 
teacher-NOM American COP CMP class

'the class in which the teacher is an American.'
(8) Sensei-ga Amerikazin  Ø  ka
teacher-NOM American COP Q

ʹis the teacher an American.ʹ

(9) *Sensei-ga Amerikazin no] ka
teacher-NOM American CMP Q

ʹIs the teacher an American?ʹ

(10) Sensei-ga Amerikazin na no] Ø  ka
teacher-NOM American COP-IMP CMP COP Q

ʹIs that the teacher is an American?ʹ

In relative clauses, an imperfective copula apparently undergoes deletion and the complementizer no appears. This does not happen before ka, however, as the contrast between (8) and (9) shows. (No does occur, irrelevantly, on the linear string before ka in the extended predicate construction in (10).) These distributional facts are best accounted for if ka (and no) are treated as complementizers rather than as N° heads in their own right, and it would appear that we must reject the argument based on Stowell’s Case Resistance Principle.2

The assumption of a non-lexical projection CP carries with it the corollary assumption that there is also an inner lexical projection IP. In English, IP is presumed to assign case to the subject in a tensed clause. This seems to be the case in Japanese as well. The verb wakaru ‘to understand’ is a stative verb that takes two nominative arguments as part of its subcategorization.

2 Plann (1986) also cites case marking of clauses in Spanish as evidence against the Case Resistance Principle.
(11) Tanaka-san-ga kanozyo-no koto-ga yoku wakaru
PN-NOM her-GEN fact-NOM well understand-IMP
'Tanaka-san understands her well.'

In one construction, however, the object of wakaru must be marked with accusative case:

(12) Mita-san-i-ga [PROi kanozyo-no koto-o wakaru]oo
PN-NOM her-GEN fact-ACC understand-TNT
to sita
CMP do-IMP
'Tanaka-san tried to understand her.'

Although the exact mechanisms by which nominative case is assigned in (11) and accusative case in (12) are unclear, it appears to be no coincidence that accusative marking is obligatory in this infinitival context in which the subject must be PRO. Takezawa (1987) offers extensive arguments that nominative case may assigned by tensed INFL in a fashion comparable to English. I will repeat only one of his arguments here, one that relates to the impossibility of nominative marking in certain Exceptional Case Marking environments.

(13) John-wa [gMary-no yokogao-o/ga totemo
PN-TP PN-GEN profile-ACC/NOM very
utukusi-i] to omotta [Finite]
beautiful-IMP CMP think-PRF (Takezawa, 1987: 74)

'John thought that Mary's profile was very beautiful.'
(14)  John-wa [Mary-no yokogao-o/*ga totemo
PN-TP PN-GEN profile-ACC/NOM very
utusi-ku] omotta [Infinitival]
beautiful-INF think-PRF

'John thought Mary's profile to be very beautiful.'

When the embedded clause is tensed as in (13), the subject
may receive either nominative case from INFL, or accusative case
from the matrix verb.³ When the embedded clause is infinitival, on
the other hand, it may receive only accusative case, nominative case-
assignment being apparently ruled out by the [-tense] INFL. Facts of
this nature, Takezawa maintains, indicate that INFL (=IP) plays a
role in the assignment of nominative case in Japanese. Morikawa
(1989) marshalls a number of arguments in support of Takezawa,
showing that nominative case-marking may be assigned by AGR,
which for the purposes of this analysis I will treat as a component of
IP.⁴

I will therefore maintain the position that Japanese, like
English, allows nominative subjects marked with ga, to appear in
the Specifier of IP position. I will also assume the existence of a
higher functional projection, namely CP, whose head is the head of

³ It is not completely clear why case marking should be possible into the
tensed clause. For arguments relating this to the obligatory topicalization of such
predicates, see Whitman (1989a).

⁴ For the sake of simplicity I will not adopt the more elaborated model of
functional projections that is emerging out of the work of Pollock (1989) and others,
in which AGR, TENSE and negation are assigned discrete functional projections.
the matrix sentence in Japanese, and into the specifier of which, I will argue, thematic WMCs are moved.

5.1.2 Leftmost Position (Kuno, 1973)

Kuno (1973:48) observes that when two or more wa-marked NPs cooccur in a sentence, only the leftmost WMC in the linear string may be construed as thematic. This constraint also holds in generic sentences, as illustrated in (15) and (16) below: (15) is a simple transitive sentence, while (16) illustrates the case of a multiple subject sentence in which both subjects are WMCs.5

(15) Inu wa neko-wa okkakeru
dog-TW cat-CW chase-IMP

'Dogs chase cats [but not, say, skunks]' (16) Zyosei-wa seiseki-wa ii kedo...
women-TW grade-CW good-IMP but

'Women get good grades [but they don't get good jobs]' Although Kuno's generalization does not entail that the leftmost WMC is obligatorily thematic, it does imply the possibility of a syntactic account of the position of thematic wa. Given that only one constituent may be thematic, and that that constituent must always be on the leftmost periphery of the sentence, the data points to the existence of a single position in the sentence in which thematic

5 Only the first WMCs in these sentences are S-Structure GRCs.
WMCs, and by implication S-Structure GRCs, may occur. A first formulation of this position might run along the lines of (17):

(17) A thematic wa-marked NP is associated with a unique syntactic slot.⁶

I assume, contra Fukui (1986) and Fukui and Speas (1986), that Japanese does possess non-lexical categories. Chomsky (1986b) proposes that non-lexical projections have a only a single Specifier position. Given the rigid right-headedness of Japanese lexical projections, in which the head is always on the rightmost periphery of the linear string, non-lexical projections will presumably share the same X-bar-theoretic head direction. The specifier position must then be located in the leftmost position, as in (18):

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⁶ Strictly speaking, Kuno’s generalization applies only to sequences of NP arguments in canonical SOV constituent order: the generalization is readily counterexemplified by sentences containing non-argument locative or temporal WMCs, which are not NPs (Kuno (1978: 313)). In (i) for example, the subject NP, which is to the right of the locative WMC, need not be construed as contrastive in a narrative text.

(i) Tosyokan-de-wa, Taroo-wa syukudai-ni torikakatta.
Library-LOC-TP PN-TP homework-DAT start work-PRF
‘At the library, Taroo began to do his homework.’

Some further counterexamples will be introduced later in this chapter.
The canonical leftness of the thematic WMCs vis-à-vis other WMCs makes it plausible that these might be in the specifier position in a non-lexical projection. Assuming that there are only two such non-lexical projections, IP and CP, the question arises as to which is to be identified as the landing site for GRCs and other thematic WMCs. This is less than obvious, since Japanese lacks the overt movement of Wh into CP that would otherwise afford distributional evidence for WMCs being in CP at S-Structure. As a consequence, it is difficult to determine the exact location of thematic WMCs using standard syntactic tests such as those employed for English topicalizations and left dislocations.  

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7 English Topicalization, for example, can be be an IP-adjunction, as indicated by to its ability to occur inside Wh-operators in relative clauses.

(i) This is a man to whom liberty we will not give t.

In matrix sentences, however, distributional evidence from cooccurrence with from indicates that topicalization moves a constituent into Spec CP. The following are from Radford (1988:530)

(ii) *That kind of pen, for what can you use.
(iii) *For what, that kind of pen can you use.
On the other hand, a hypothesis that thematic WMCs are analyzed as Specifiers of IP (e.g., Fukui, 1986; Tateishi, 1988, 1990b) entails a particular view of the structure of Japanese. Among other things, it requires that all case-marked Japanese subjects be in VP-internal positions. The Specifier of IP hypothesis would also have the interesting consequence that it places sentence initial thematic WMC objects in that position.

5.1.3 Empty 'Topic' Contexts

Positive evidence for the Spec, CP hypothesis may be gleaned from the interpretation of WMC subjects in the environment of Empty Category objects. Huang (1984) proposes that object ECs in Chinese and Japanese are syntactic variables that must be A'-bound by an antecedent 'topic.' In the absence of an overt antecedent, these must be bound by an invisible 'topic operator.' Although Huang's analysis is controversial—it is supported by Hasegawa (1985) and challenged by Whitman (1986)—the assumption that object ECs are bound by a null topic holds considerable explanatory power with respect to the following phenomena.

Consider the following sentence containing an EC object (19).

(19)  \[[e]\text{TOP} [\text{Taroo-wa e}\text{ kaita}]\]
      \text{PN-CW write-PRF}

'Taroo [at least] wrote it.'
The subject WMC, which is to the left of the empty 'topic,' must be construed as contrastive. This obligatory contrastive reading of (19) does not allow a syntactic explanation unless a null topic is posited as binding the EC object. In other words, Kuno's generalization that the second and subsequent WMCs in a sequence must be contrastive continues to hold when a 'topic' is non-overt. Although Huang (1984) does not identify a syntactic position for his empty 'topic,' it must be assumed to have either been base-generated in situ, or raised into an 'operator' position. In the first instance, base-generating an EC in operator position is problematic: it does not clarify how a relation is established between the operator and the EC it binds in the clause. In the second instance, obligatory movement of an empty operator to an adjunction site would have to be motivated independently. In either case, we may hypothesize that this position is the Specifier of CP, which is the canonical 'operator' position in GB theory, being the landing site for Wh-movement, and relative clause operators in English. It may be noted, in this context, that the fact that this is a syntactic 'operator' position predicts that embedded generic-related WMCs are 'hard to get' when other operators are in Spec, CP; in relative clauses only the head noun can function as GRC.

The structure of (19) is taken to be as shown in (20). The null topic is in Spec, CP, while — following Hoji's (1985) arguments (presented in §5.2)—the IP-adjoined position being reserved for the contrastive WMC, which undergoes string vacuous movement into that slot.
5.1.4 Non-Matrix Contexts

5.1.4.1 Conditional Clauses

The identification Spec, CP as the landing site for GRCs and other thematic WMCs is supported by the standard observation that thematic *wa* is a root sentence phenomenon. A WMC embedded in a conditional clause is ill-formed on the thematic reading:

(21) [CP [IP inu ga/*wa (mosi) neko-o okkake]-reba]
      dog-NOM/TP if cat-ACC chase-CND

      'if a dog chases a cat'

In (21) the subject is typically marked with nominative *ga*; any *wa*-marking must be construed contrastively. Since the nominative subject is presumed to be in the Specifier of IP position, the impossibility of thematic *wa*-marking may be taken to indicate that thematic WMCs must be in some higher position that is unavailable in conditional clauses. Although the syntactic structure of Japanese condi-
tional clauses remains poorly understood, owing to the manner in which conditional morphology is cliticized onto the verb, it may be hypothesized that the Spec, CP position is filled at S-Structure by a null operator comparable to the syntactic operator co-occurring with English if. It is blocking by an operator that seems to rule out S-structure movement to CP in German conditionals, which show verb final effects typical of embedded clauses (Platzarch, 1983):

(22) [CP falls [IP ein Kleid einer Kundin nicht passt]]

if a dress to a customer not fits

'if a dress does not fit a customer.'

The failure of movement and consequent absence of matrix sentence V2 effects in (22) may be ascribed to the presence of the operator falls. In English too, we may note the complementarity of (23) and (24). In the former, the presence of if in the C° position apparently blocks movement of the AUX.

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8 In that inflectional morphology is attached directly to the verb, the structure of conditional clauses in Japanese suffers the same difficulties of analysis that are encountered by attempts to distinguish IP and VP. The simplest account under with standard generative assumptions is that in conditional clauses the verb undergoes string vacuous raising from V° to I° to C°, accreting layers of inflectional morphology as it moves up. For arguments for the applicability of this analysis in matrix contexts, see Whitman (1989b).

9 Note that if itself is not the operator, it is a C°.

10 These facts were pointed out to me by John Whitman (personal communication).
(23) If he were to come, I would leave.

(24) Were he to come, I would leave.

We may thus hypothesize that the syntactic operators that occur overtly in the CP of other languages have an invisible counterpart in Japanese (possibly with an overt reflex in the form of the adverb *mosi* ‘if’ that is optionally employed in hypothetical conditionals.\(^{11}\)) This would give (21) the structure depicted in (25), where the presence of the operator is thought to inhibit movement into Spec, CP.

\(^{11}\) Whitman (personal communication) suggests that *mosi* is grammatical only when licensed by the conditional $C^\circ$ head. The following show that *mosi* may only occur in conjunction with conditional verb morphology:

(i) *mosi* ikeba
if go-COND
‘if I go...’

(ii) *mosi* ittara
if go-PRF-COND
‘if I go...’

(iii) *mosi* itta
if go-PRF
‘if I went...’
5.1.4.2 Embedded Clauses

The prototypical cases of embedded structures are Complex Noun Phrases. Yet although these might be expected to provide a diagnostic for the S-Structure position of the GRC, the situation is complicated by extraneous factors, namely that in non-appositive embedded generic sentences, i.e., generic relative clauses, (i) the head of the CNP must be a GRC, and (ii) the clause must be non-restrictive. In (26), in which the CNP head is robotto 'robot,' it is difficult to obtain a generic interpretation for the embedded clause, in view of our real world knowledge of robots. On the other hand, in (27), a generic reading is possible.

(26)  [ OPi [ ei atarasii kuruma-o kumitateru] robotto_i]  
   new car-ACC assemble-IMP robot
   (i)  ??'robots, which build the new cars.'
   (ii) 'robots that build the new cars.'

(27)  [ OPi [ robotto-ga ei kumitateru] atarasii kuruma_i]  
   (i)  '(the) new cars, which robots build.'
   (ii) '(the) new cars that robots build'

Kuno (1973 a,b) proposes that heads of relative clauses are the 'themes' of their clauses. The behavior of GRCs in (26) and (27) supports this notion in that it replicates the behavior of matrix generic sentences in which a GRC construal for a nominative subject is impossible. It also has the ancillary consequence that relative clauses fail to afford a diagnostic for CRC movement into Spec, CP: since the head itself must be the GRC, it follows that there will never be S-
Structure GRC movement of a WMC in non-restrictive relative clauses.

In Complementizer Clauses, where the head is not identifiable with any gap in the embedded clause, the data is unconstrained by such considerations. Below (29) embeds (28) under the complementizer koto.

(28) Inu wa neko-o okkakeru
dog-TW cat-ACC chase-IMP

'Dogs chase cats.'

(29) [NP [CP OP [IP inu ga/*wa neko-o okkakeru]] koto]
dog-NOM/TP cat-ACC chase-IMP fact

'the fact that dogs chase cats'

In (29), it must be assumed that the Spec, CP position is occupied by a null operator that blocks movement of other constituents into that position. (For most speakers, wa-marking in example (29) is acceptable only on a strongly contrastive construal for wa.\textsuperscript{12} ) In Chapter Four, it was observed that in embedded clauses, although no wa-marking was possible, WCO effects were encountered as in (30) below. While S-Structure Movement of the GRC is blocked in these constructions, LF movement is apparently not. In such cases, it will be noted, we must also assume that the Specifier of CP position is multiply filled at LF.

\textsuperscript{12} Clauses headed by koto are unlike relative clauses in that many speakers (including Kuroda (1972)) allow them to contain thematic WMCs. For these speakers it may be that the complementizer koto can take a CP as its complement in addition to IP.
5.1.5 Some Counterarguments

5.1.5.1 ‘Conditional Topics’

The above arguments in support of an analysis of thematic WMCs as Specifiers of CP are fairly conventional. However, Tateishi (1989, 1990) introduces data that he claims show only one class of WMC to occur in CP, concluding that other thematic WMCs are typically in Spec IP. Since these data, if valid, would counterexemplify the hypothesis presented in the preceding pages, and poses problems that are not readily resolved, his arguments merit some consideration. Tateishi’s first body of evidence concerns a class of WMC originally observed by Mikami (1963), which Tateishi terms ‘conditional topics.’ These exhibit a number of theoretically interesting

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13 So-called after Mikami’s (1963) original observation that they allow paraphrases with conditionals. This can be seen in (i) and (iii) below.

(i) Shinbun-o yomitai hito-wa koko-ni aru
Newspaper-ACC read-DESID person-TW here-DAT exist-IMP
‘Anybody who wants to read the newspaper, its over here.’
features: (i) the WMC is a complex NP with an indefinite head—thereby demonstrating that there is no inherent relation between thematic WMCs and definiteness—and (ii) the embedded clause contains an object NP that relates to a gap in the main clause.

(31) [Sinbun-o yomitai] hito]-wa [e koko ni newspaper-ACC read-DESID persons-TW where-DAT aru yo] exist-IMP CMP

'Anyone who wants to read the newspaper, it's over here.'

Particularly striking is (iii) the fact that this class of WMCs cannot coocur with Wh-questions:

(32) *[Sinbun-o yomitai] hito]-wa doko-ni newspaper-ACC read-DESID persons-TW where-DAT aru no exist-IMP CMP

*Anyone who wants to read the newspaper, where is it?

(33) *[onaka-ga suita hito-wa] reezooko-ni stomach-NOM empty-PRF person-TW refrigerator-DAT

(ii) Sinbun-o yomitai hito-ga ireba, koko-ni aru Newspaper-ACC read-DESID person-TW exist-CND here-DAT exist-IMP

'If anyone wants to read the newspaper, its over here.'

(iii) Sinbun-o yomitakeréba, koko-ni aru. Newspaper-ACC read-DESID-CND here-DAT exist-IMP

'If you want to read the newspaper, its over here.'

For a detailed discussion of the properties and problems posed by these sentences, the reader is referred to Tateishi (1989).
nani-ga aru no.
what-NOM exist-IMP CMP

*Anyone who is hungry, what is in the fridge?

Ungrammaticality judgments concerning these examples are robust. Tateishi attributes the impossibility of Wh-questions to these WMCs being in Spec, CP, thereby inhibiting movement of the Wh-phrase into that position at Logical Form. Since other WMCs typically do allow LFWh-movement, it follows that these WMCs cannot be in Spec, CP, but must occur in some alternative—Tateishi argues, hierarchically lower—position in the sentence.

It is unclear that LF movement of Wh-phrases should necessarily be blocked by the presence of an S-Structure constituent in this fashion. It is not blocked in English, for example. We have already seen with respect to example (30) above that LF movement of GRCs takes place in embedded contexts where we must presume that S-structure movement is blocked. Moreover, LF movement is not blocked in English multiple Wh-questions, where an in-situ Wh-phrase undergoes LF movement into the Specifier of CP position.

(34) [CP Who [IP t bought what]
(35) [CP Whati whoj [IP tj bought ti]]

In Japanese, where all Wh-movement must take place at LF (Saito and Hoji, 1983; Hoji, 1985), multiple Wh-movement, is also allowed, as evidenced by the grammaticality of (36):
In the above examples, both elements share the same syntactic operator, and in English, the Wh-phrase in CP at S-Structure arguably acts as an 'attractor' for LF movement of the in-situ Wh-phrase. Chomsky (1986a: 52-53), discussing multiple Wh in English, suggests that there is a parametric variation between English and Japanese, namely that at LF Wh-phrases move non-vacuously only to a position occupied by Wh at S-Structure. This property holds of English. In Japanese, where Wh movement takes place at LF, movement is permitted 'whether or not the target position is occupied by a Wh-phrase' (1986a: 53). One implication of parametric LF Wh-movement in Japanese then is that the possibility that Wh-movement may take place at LF cannot be ruled out, even though the Spec, CP position is occupied by some other element at S-Structure.

Another problem for Tateishi's claim, as Whitman (personal communication) points out, is that (32) and (33) are ungrammatical in English too. This is inexplicable if the clauses headed by anyone were in Spec, CP in English, because movement to Spec, CP in English root clauses always requires Subject/Aux inversion.

Regretably, though we may dismiss Tateishi's account on the above grounds, no alternative syntactic solution presents itself to the questions raised by his examples. A non-syntactic answer might be sought, nonetheless, in the vocative nature of the WMCs concerned.
Let us note that the sentences that occur under this class of WMCs generally take the form of instructions or invitations. Example (31), for instance, is interpreted as inviting any relevant hearers to obtain the newspaper, and permits a paraphrase along the lines of (37).

(37) \[ [[\text{Sinbuni-o yomitai}] \text{hito]-wa e i koko ni} \]
\[
\begin{array}{llllllll}
\text{newspaper-ACC} & \text{read-DESID persons-TW} & \text{where-DAT} \\
\text{aru} & \text{kara, doozo e o-tori kudasai} & \text{exist-IMP} & \text{because} & \text{please} & \text{HON-taking} & \text{give-IMPER}
\end{array}
\]

‘Anyone who wants to read the newspaper, it’s over here, so please take one.’

It is possible that sentences such as (31) constitute an elliptical counterpart of (37), in which an explicit instruction or invitation is omitted in favor of pragmatic inference. This would allow us to treat Tateishi’s examples as equivalent to imperative sentences containing a deontic modal operator, under which we may broadly subsume a variety of mands and requests. Imperative sentences are demonstrably incompatible with Wh.

(38) *\[ \text{Nani-o tabero!} \] \[ \text{What-acc eat} \]

(39) *\[ \text{What eat!} \]

\(Wh\) is inhibited in both English and Japanese at both S-structure and LF, even though there is no overt element in CP that might potentially block \(Wh\)-movement. From the perspective of discourse function it is not difficult to see that deontic necessity and interroga-
tive operators might be fundamentally incompatible in a semantic representation; a principled account will require further work.\(^\text{14}\)

### 5.1.5.2 Base-Generated WMCs

Tateishi (1990) also discusses a second WMC type, identified by Ueyama (1989). These WMCs bear no relationship to any \(\theta\)-role bearing element in the sentence, and never allow nominative \textit{ga}-marking.

\begin{align*}
(40) & \text{Hannin-wa/*ga Ziroo-ga ayasii} \\
& \text{perpetrator-TW/NOM PN-NOM fishy-IMP} \\
& \text{`As for the perpetrator, Jiro is suspect.'}
\end{align*}

\begin{align*}
(41) & \text{Kore wa/*ga Taroo-tati-ga miti-o matigaeta.} \\
& \text{This-TW/NOM PN-PL-NOM road-ACC mistake-PRF} \\
& \text{`This, [it means that] Taro and co. took a wrong turning.'}
\end{align*}

Since nominative marking is impossible, these WMCs must presumably be base-generated in a position outside IP. Ueyama suggests that this position is the specifier of a non-lexical category MP (Modal Phrase) that dominates CP, a projection which in Ueyama’s account plays no role, except, apparently, as a landing site for Wh-movement at Logical Form.

\(^{14}\) Note that deontic necessity is not in and of itself incompatible with \textit{Wh}, as the following illustrates.

\begin{align*}
(i) & \text{What must I do?}
\end{align*}
This conception of Japanese syntactic structure, with its attendant proliferation of non-lexical categories, assumes that CP is instantiated only at LF. It presents problems for a theory of complementation, since it may be observed that Ueyama's base-generated WMCs may be embedded under the complementizer to. The complementizer to must be able to take recursive CPs as complements, as (43) below shows.

(43) Boku-ga [CP [CP [IP dare-ga ayasii] ka]
I-NOM who-NOM suspect-IMP CMP

  to] kiita] (koto)
CMP ask-PRF CMP

'(that) I asked who was suspect.'

But (44), on Ueyama's account, implausibly requires us to sandwich an MP between two CPs, one of which may be empty at S-Structure.

(44) Boku-ga [CP [MP hannin-wa [CP [IP Ziroo-ga ayasii]]]
I-NOM perpetrator-TW PN-NOM suspect-IMP
Tateishi (1990) offers an alternative account of Ueyama's data, observing that this class of WMCs has the property that it blocks \textit{naze} 'why' in (45) and (46), but not, as (47) illustrates, LF movement of argument \textit{Wh}-phrases.

(45) \textasteriskcentered*Hannin-wa Ziroo-ga naze ayasii ka ne perpetrator-TW PN-NOM why fishy-IMP Q PT

'As for the perpetrator, Ziroo is why suspect.'

(46) \textasteriskcentered*Kore wa Taroo-tati-ga naze miti-o matigaeta ka ne This-TW PN-PL-NOM why road-ACC mistake-PRF Q PT

'This, [it means that] Taro and co. why took a wrong turning.'

(47) Hannin-wa dare-ga ayasii ka ne perpetrator-TW PN-NOM fishy-IMP Q PT

'As for the perpetrator, who is suspect?'

Examples (45) and (46) are deviant, while (47) is not. The base-generated WMC, Tateishi proposes, occupies a specifier position in non-lexical projection YP that is intermediate between CP and IP, which acts as a barrier in the sense of Chomsky (1986a) to block movement of the adjunct \textit{naze} — and only \textit{naze} as (47) indicates — into the Spec, CP at LF.
Tateishi fails to note, however, that the position of naze in these sentences is a crucial component of their acceptability: when naze occurs to the left of the subject, the sentences improve significantly. (49) and (50) are grammatical.

(49) Hannin-wa naze_i [jp Ziroo-ga ti ayasii] ka ne perpetrator-TW why PN-NOM fishy-IMP Q PT 'The perpetrator: why would Ziroo be a suspect for it.'

(50) Kore wa naze_i [jp Taro-tati-ga ti miti-o This-TW why PN-PL-NOM road-ACC matigaeta] ka ne mistake-PRF Q PT 'This, now why would Taro and co. have taken a wrong turning?'

It appears that the well-formedness of the sentences hinges on the ability of naze to attain an S-Structure position that corresponds to its required scope at Logical Form. This may either be an inner CP—a plausible hypothesis given the acknowledged possibility of recursive CP structures in Japanese—or an IP adjoined position where scopal
requirements are met at LF. This latter hypothesis is somewhat more problematic. Chomsky (1986a) takes the position that all Wh-phrases must be in CP at LF. However, since Wh-movement in Japanese takes place only at LF, no overt Wh-attractor in Spec, CP is necessarily required at S-Structure (though the particle ka can clearly have this function). It is conceivable, therefore, that some Japanese Wh might be interpretable in in-situ, if they can obtain sentential scope at S-structure. Be that as it may, under neither analysis would naze need to cross the WMC at LF, thus obviating the need to posit an intermediate projection between IP and CP.

Rather than positing a separate maximal projection solely in order to accommodate this peripheral class of WMCs, let us suppose that these are genuine sentential adjuncts, comparable to perhaps English as for phrases, which may freely adjoin to either IP or CP.

(51) Mary said [cp that as for the perpetrator, John is under suspicion.]

(52) As for the perpetrator, [who are the police investigating?]  

A sentential adjunct analysis, moreover, suggests that a solution to the behavior of naze may be possible under Rizzi’s (1990) Relativized Minimality. A core idea in Rizzi’s proposals is that elements with similar syntactic properties may act as potential antecedent governors that can intervene to block antecedent government. Suppose that the WMCs in question, as sentential adjuncts, can be analyzed as [-Wh] counterparts of naze. Then the WMC might
count as a potential antecedent governor for the LF trace of \textit{naze} in (53):

(53) *naze hanni-n-\textit{wa} Zi\textit{roo}-\textit{ga} t ayasii \textit{ka ne} why perpetrator-TW PN-NOM fishy-IMP Q PT

Treating this class of WMCs as pure adjuncts allows us to account for why certain other WMCs should allow \textit{naze} to occur to the left of a subject NP, as can be seen in the context of Kuno's famous example:

(54) Sakana-\textit{wa} tai-\textit{ga} oisii
Fish-\textit{TP} snapper-NOM taste-good-IMP

'As for fish, snapper taste best.'

As (55) indicates, these may bear nominative case-marking in embedded contexts. This suggests that \textit{sakana} has a D-structure source in an IP-adjoined quasi-argument position where it can receive nominative case, and may subsequently move into Spec, CP. Arguments for the existence of an IP-adjoined quasi-argument position have been put forward by Webelhuth (1989) for German, and Saito (1990) for Japanese in order to account for multiple subjects.

(55) Sakana-\textit{ga} tai-\textit{ga} oisii \textit{(koto)}
Fish-NOM snapper-NOM taste-good-IMP CMP

'(that) among fish, snapper taste best'
(56) Sakana-wa [IP t [IP tai-ga naze oisii]] ka ne
Fish-TP snapper-NOM why good-IMP Q PT

'As for fish, why do snapper taste best?'

This yields an LF representation that is well-formed in that each trace is bound by its closest potential antecedent, and the Wh-phrase has sentential scope.

(57) [naze; [sakana] [tj [tai-ga t_i ii] ka]] ne

An account along such lines permits us to apply Occam’s razor to the additional projections of Japanese S-Structure that are characteristic of both Ueyama and Tateishi’s models, and to treat the WMCs in examples such as (40) and (41) as true base-generated WMC adjuncts, which have little impact on our analysis of thematic wa and GRCs as specifiers of CP.

5.1.6 Summary

Although Tateishi’s data pose problems for a Spec, CP analysis of thematic WMCs, it can also be shown that the data themselves are inherently problematic in ways that suggest the possibility of alternative solutions. The theoretical preferability of some of the alternatives leads me to reject his proposal that thematic WMCs are in the Spec IP position. Meanwhile, there is substantial—and relatively straightforwardly interpretable—evidence, both from the behavior of WMCs in sentences containing empty objects, and
from the impossibility of thematic WMCs in non-root contexts, that these constituents are in an ‘operator’ position in Spec, CP. Such a treatment is consistent with the standard analysis of ‘topics,’ in Germanic languages, which are also analyzed as Specifiers of CP in order to account for matrix sentence V2 effects in those languages. In these languages, which manifest verb-second effects, the Spec, CP position must apparently be licenced by an overt lexical head. Whitman (1989b, 1991) has suggested that all root sentences in Japanese are CPs, the V+Infl complex moving string-vacuously into the C° position in order to licence a ‘topic.’ Accordingly the structure of a root generic sentence such as (28) may be supposed to be as in (58) below, where the WMC has undergone movement into the Specifier position in CP.

(28) Inu wa neko-o okkakeru
dog-TW cat-ACC chase-IMP
‘Dogs chase cats.’

(58)
5.2 Base Generation Versus Movement

The task of formulating a syntactic model in which thematic WMCs are Specifiers of CP is substantially facilitated by the dissertations of Saito (1985) and Hoji (1985), which offer substantive evidence that Kuno's thematic/contrastive distinction reflects a difference in the structural positions of the two WMC types. Hoji (1985) explicitly argues that the functional distinction between contrastive and thematic WMCs has a syntactic basis: contrastive WMCs, being subject to the rule of Move α, undergo scrambling at S-structure to a site adjoined to S, while thematic WMCs are base generated under S'.

Since Hoji's hypothesis implies that all Japanese generic sentences containing thematic WMCs must be Left Dislocations,15 his arguments warrant serious consideration before we can reject them.

5.2.1 Saito's Analysis (1985)

The initial data hinting at a syntactic distinction between the two wa-marking types derives from an observation by Saito (1985) that wa-marked NPs need not observe subjacency in long-range dependencies, while wa-marked PPs must do so. This argument/adjunct asymmetry is illustrated in the contrast between (59) and (60), where the WMC relates to a gap in a complex noun phrase. As the exam-

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15 Note that since S' is the former COMP position, S'' places a WMC in some node higher than CP.
ples indicate, Saito’s account is not explicit about the exact position of
the WMC in the sentence.\(^{16}\)

\[(59)\]  Pekin\textsubscript{i}-wa [John-ga [[e \ e\textsubscript{i} yoku sitte iru]]
PN-WA PN-NOM well know-GER be-IMP
hito]-o sagasite iru.
person-ACC look-GER be-IMP

‘Beijing, John is looking for someone who knows it well.’

\[(60)\]  *Pekin-ni\textsubscript{j}-wa [John-ga [[e \ e\textsubscript{i} nando-mo itta]]
PN-DAT-WA PN-NOM many- times go-PRF
hito]-o sagasite iru.
person-ACC look-GER be-IMP

‘To Beijing, John is looking for someone who went there several times.’

Saito notes that under such conditions, \textit{wa}-marked NPs, but
not PPs, permit resumptive pronouns, as demonstrated by the
contrast between (61) and (62).

\[(61)\]  Pekin\textsubscript{i}-wa [John-ga [[e sokoj\textsubscript{-ni} nando-mo itta]]
PN-WA PN-NOM there-DAT many- times go-PRF
hito]-o sagasite iru.
person-ACC look-GER be-IMP

‘Beijing, John is looking for someone who went there many
times.’

\[(62)\]  *Pekin-ni\textsubscript{j}-wa [John-ga [[e sokoj\textsubscript{-ni} nando-mo itta]]
PN-DAT-WA PN-NOM there-DAT many- times go-PRF
hito]-o sagasite iru.
person-ACC look-GER be-IMP

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\(^{16}\) These examples have been taken from Hoji’s (1985) discussion of Saito’s
data. I use Hoji’s examples as simpler and more idiomatic than those of Saito.
To Beijing, John is looking for someone who went there several times.’

The behavior of wa-marked PPs parallels that of scrambled case-marked objects. This is observable in the ungrammaticality of (60), repeated below, and the structurally analogous (63), where the preposed constituents cannot relate to empty categories within the complex noun phrases.

(60) *Pekin-ni-wa [John-ga [[e e] nando-mo itta]  
PN-DAT-WA PN-NOM many-times go-PRF  
hito]-o sagasite iru.  
person-ACC look-GER be-IMP  

‘To Beijing, John is looking for someone who went there several times.’

(63) *Pekini-o [John-ga [[e e] yoku sitte iru]  
PN-WA PN-NOM well know-GER be-IMP  
hito]-o sagasite iru.  
person-ACC look-GER be-IMP  

‘Beijing, John is looking for someone who knows it well.’

On the other hand, both constituent types may undergo long-range extraction where the structure apparently affords an escape hatch through a complementizer, as in (64) and (65).17

17 It is presumably the case that to, as head of CP, licences an open specifier position that acts as an escape hatch through which movement may take place. The extraction facts cited here constitute further evidence against the position of Fukui (1986) that to is a postposition.
Saito concludes that some WMCs may be base-generated in sentence-initial position as long as their presence can be licensed by pragmatic 'aboutness,' as proposed by Kuno (1973a). Conversely, the fact that wa-marked PPs, being constrained by subjacency, must always undergo movement, he argues, may be taken to demonstrate that not all WMCs need be base-generated in a sentence initial position, but that they can be moved into that position whenever movement is not constrained by other principles of grammar.

5.2.2 Hoji (1985) on Thematic and Contrastive Wa

Noting that wa-marked PPs are typically construed as contrastive, Hoji (1985) extends Saito's analysis to the thematic/contrastive distinction with a proposal that contrastive WMCs may be raised by scrambling to a position adjoined to S, while thematic WMCs are obligatorily base-generated in the S" position. Hoji offers two Bind-
ing-Theoretic arguments in support of his position: the bound variable interpretation of ECs and the referential possibilities of the reflexive form zibun ‘self.’

The first of his arguments, the bound variable interpretation of ECs, is illustrated by the examples below. In (66), but not (67), an EC that is embedded inside the WMC may be referentially dependent on a quantificationed element. The two sentences differ only in whether the WMC bears a contrastive intonation or not.

**Contrastive wa:**

(66) [IP' [ e ei butta] hito]-wa [IP darej-ga t j uttaeta] no hit-PRF person-CW who-NOM sue-PRF CMP

‘Someonej who hit himi, whoi sued?’

**Thematic wa:**

(67) *[CP [ e ei butta] hito]-wa [IP darej-g e j uttaeta] no hit-PRF person-TW who-NOM sue-PRF CMP

‘The personj whoj hit himi, whoi sued himj?’

With respect to (66), Hoji argues that coreference is possible because the entire WMC has been moved out of the trace position, and therefore may be reconstructed in that position at LF, where the Wh-phrase is able to bind the embedded EC. The ungrammaticality of (67) is then ascribed to base-generation of the thematic WMC. In this configuration, the Wh-phrase cannot bind the embedded EC because there is no trace position in which the WMC can be reconstructed in order for coreference to be possible.
Hoji’s second argument, concerning the bound variable interpretation of *zibun* proceeds in a similar vein. He notes that sentences like (68) and (69) are grammatical on a contrastive reading. The WMC is assumed to have moved into an adjunction site on $S (= IP)$.

**Contrastive wa:**

(68) $[s' \ zibun_i \ -ni\ -tuite\ -no \ \text{hon}_k\ -wa \ [s \ dare-ga \ t_k \\
\ \text{self\-about\-GEN} \ \text{book\-CW} \ \text{who\-NOM} \\
\ \text{suteta}] \ \text{no} \ \text{CMP} \\
\ \text{throw out\-PRF} \\
\ \text{The book about himself, who threw it out?}]

(69) $[s' \ zibun_i \ -ni\ -tuite\ -no \ \text{hon}_k\ -wa \ [s \ \text{Yamada\-san\-ga} \ t_k \\
\ \text{self\-about\-GEN} \ \text{book\-CW} \ \text{PN\-NOM} \\
\ \text{suteta}] \\
\ \text{throw out\-PRF} \\
\ \text{The book about himself, Yamada threw out.}]

Again, Hoji proposes that the moved constituent can be reconstructed at LF in the position of its trace, allowing the reflexive *zibun* to be properly bound by its quantificational antecedent. When the WMC does not carry contrastive intonation, but is construed as thematic, the corresponding sentences are ungrammatical.

**Thematic wa:**

(70) $*[s'' \ zibun_i \ -ni\ -tuite\ -no \ \text{hon}_k\ -wa \ [s \ dare-ga \ e_k \\
\ \text{self\-about\-GEN} \ \text{book\-TW} \ \text{who\-NOM} \\
\ \text{suteta}] \ \text{no} \ \text{CMP} \\
\ \text{throw out\-PRF} \\
\ \text{The book about himself, who threw it out?}$
(71) *[S" zibun]-ni-tuite-no honk-wa [s Yamada-san-ga ek self-about-GEN book-TW PN-NOM

suteta]
throw out-PRF

'The book about himself, Yamada threw out.'

As with ECs, Hoji ascribes the difference between the two sets of sentences to their different derivations. In (68) and (69), the contrastive WMC can be reconstructed in its D-Structure position at LF, thereby permitting zibun to be bound by the subject NP. In (70) and (71), the thematic WMC has been base-generated in its S-Structure position, and can never be replaced in the position of the downstair EC, so a configuration never arises at any level of representation in which the subject NP is able to bind zibun. This is verified, Hoji argues, by the fact that a WMC that relates to a gap inside a complex noun phrase never permits variable binding of zibun:

(72) *[NP [s zibun]-ga [vp Ginza-de ej katta]]
self-NOM PN-LOC buy-PRF

yubiwa]-k-wa/wa [s daremo-ga [vp [NP [s ei [vp e/k/tk ring-TW/CW everyone-nom

nusunda]] otoko]-o sagasite iru]] (koto)
steal-PRF man-ACC look-GER be-IMP (fact)

*The ring that self bought at Ginza, everyone is looking for the man that stole it.
(72) constitutes a powerful argument for the possibility of base-generating thematic WMCs. The subjacency violation means that the WMC must have been base-generated outside the matrix sentence. Yet both thematic and contrastive wa are ruled out, since neither WMC can be reconstructed into a trace position that would license the binding of zibun. Because anaphor binding fails in (72), where the WMC is base-generated, Hoji concludes that the other cases where binding fails are also base-generated.

On the basis of this data, Hoji applies Baltin's (1978, 1982) proposals concerning Topicalizations and Left Dislocations in English to the case of Japanese wa-marking. Contrastive WMCs are treated in a manner analogous to English topicalization: they are generated under S (=IP) and may be moved at S-Structure to an S-adjoined position under Move α. Thematic WMCs are treated as left-dislocations, base-generated under S", which, it will be noted, corresponds to a pre-CP position in current treatments.

With respect to his analysis of contrastive WMCs as IP adjoined, Hoji seems to be essentially correct. The IP-adjoined position is assumed to be the landing-site for LF Focus movement (Chomsky (1977)) (cf. also the LF treatment of Culicover and Rochement (1983)), and in view of the intonational stress frequently associated with contrastive wa, we may properly characterize contrastive WMCs, which also move into this position, as being the target of constituent focus. Diesing (1987) and Ueyama (1989) also analyze contrastive WMCs as constituents targeted for focus. This analysis is supported
by evidence of LF movement of in-situ WMC objects, which are obligatorily contrastive. Hoji (1985: 191) cites the following Weak Crossover example as evidence of LF quantificational movement:

(73) *[NP [S ej [VP hitome ei mita] hitoj]-ga
Johni-WA suki-ni natta]]
PN-CW liking-COP-GER become-PRF

'The person who took a glance at him fell in love with John (as opposed to...')

Hoji is not explicit as to the nature of the quantificational operation that is presumably involved in (73). However, the WCO effect can be readily accounted for if the WMC is assumed to undergo LF focus movement to the S- (=IP) adjoined position. (73) is thus comparable to (74), where LF focus movement is also assumed (Chomsky (1977)).

(74) *Hisi mother loves JOHNi. [Strong stress on John]

On the basis of both the intonational contour associated with contrastive wa and the WCO effects, it seems reasonable to conclude that contrastive WMCs are a focus-related phenomenon and restrict a constituent focus operator, the nature of which falls beyond the scope of this investigation. I will follow Hoji in supposing that both
preposed and in-situ contrastive WMCs are in an IP-joined position at LF.  

5.2.3 Against Obligatory Base-Generation

Hoji's arguments for base-generation of thematic WMCs are naturally problematic for any position that says that they may be the result of movement, and that GRCs undergo strictly local movement into the Specifier of CP position. Although Saito (1985) permits thematic WMCs to be derived by both base-generation and by movement out of a D-Structure position whenever such movement does not fall foul of some syntactic principle, Hoji's claim, as sketched above, is a much stronger one that precludes any such a possibility: all thematic WMCs must be base generated in an extra-sentential S'' position.

It is clear that some instances in which generic-related WMCs are base-generated in the Spec, CP position must be countenanced, even though the relationship between the NP and a gap is very local. Base-generation appears to be mandatory in legal Japanese, for example, where a resumptive pronoun strategy is employed whenever an object NP is WMC. This is illustrated in (75).  

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18 Note that this entails that preposing of a WMC, unlike scrambling of a case-marked constituent, is not vacuous at LF.
19 Legal sentences may legitimately be considered to constitute a distinct subclass of generic sentence in Japanese. It will be noted that the sentence contains no overt modal element.
(75) Rizityooij-wa, rizi-no gosen-ni yori
President-TP director-GEN mutual.elect.-DAT depending
korei-o sensyutu suru
this-ACC elect-IMP

'The president, they shall elect this by mutual election of the directors.' (i.e., 'The president shall be elected by the directors from among their number."

However, Hoji’s treatment has the consequence that all Japanese simplex sentences of the form in (76), in which the WMC is interpreted thematically, are structurally equivalent to to the English Left Dislocations as in (77).

(76) Inuj-wa [ei neko-o okkakeru]
dog-TW cat-ACC chase-IMP

'Dogs chase cats.'

(77) The dog, it chases cats.

It seems intuitively false to assume that the widespread phenomenon of thematic wa-marking should correspond to the rather peripheral phenomenon of Left Dislocation in English. In addition, Hoji’s characterization of S" as the site of generation, being equivalent to some projection outside CP, seems too high. A position similar to Hoji’s was also observed in Chapter Two to be implicit in the work of Kuno (1973 a,b), and, as we noted on that occasion, there are good reasons for thinking that this particular analogy cannot be
correct. Unlike the English (77), the WMC of (76) never permits a resumptive pronoun in the subject position.20

(78) *Inu\textsubscript{j}-wa sore\textsubscript{j}-ga neko-o okkakeru
dog-TW that-NOM cat-ACC chase-IMP

'Dogs chase cats.'

The impossibility of a resumptive pronoun in (78) may be viewed as evidence that the subject has been base-generated in the sentence external position, but derives from string-vacuous movement.

If Hoji’s analysis is incorrect, what then are we to make of his binding data? Although Hoji’s account is based on the hypothesis that there are LF Reconstruction Effects, this hypothesis encounters a number of serious difficulties. It wrongly predicts, for example, that the English (79) below should be unacceptable, which is problematic in that the anaphor each other is not bound by a c-commanding antecedent in conformity with Principle A of the Binding Theory. The resumptive pronoun should prevent LF reconstruction of the dislocated NP in the object position, and should therefore rule out the possibility of coreference between the anaphor and its antecedent.21 The

---

20 It is legitimate to ask what the Japanese counterpart of an English left dislocation such as that in (77) might be. The short answer seems to be that it is a bare NP with a WMC resumptive:

(i) Inu to iu mono, sore-wa neko-o okkakeru
dog CMP say thing that-TP cat-ACC chase-IMP

'A dog, it chases cats.'

21 This example is due to John Whitman.
fact that (79) is acceptable poses a substantive difficulty for Hoji's claims, since the NP cannot be reconstructed in the position of the resumptive pronoun. A solution to this problem will be suggested later.

(79) [Each other's books]k [John and Mary threw themk out]

The assumption of Reconstruction Effects runs into difficulties on other, theoretical grounds. Barss (1986) argues persuasively that LF scopal requirements for the interpretation of Wh cannot be maintained under a reconstruction account of the sort proposed by Hoji. Essentially, the argument goes, a Wh-phrase cannot undergo reconstruction in its D-Structure position at LF, because it is required at that level of representation to have sentential scope. Thus neither (81) nor (82) can constitute well-formed representations of (80).

(80) Which pictures of himselfi does everyonei like tj
(81) LF1: everyonei [ti likes which pictures of himselfi]
(82) LF2: which picturesj of himselfi [everyonei [ti likes tj]]

In (81), where reconstruction has taken place, the Wh-phrase does not have proper LF scope over the sentence. In (82), where it does have sentential scope, the anaphor himself is not properly bound by everyone. Thus LF reconstruction yields a contradiction at LF.

Exactly the same contradiction may be observed within Hoji's own formulation of contrastive wa. Hoji assumes that all contrastive
WMCs are moved to an S-Adjoined position at Logical Form, as evidence for which he cites Weak Crossover examples such as (73), repeated below.

(73) *[NP [S e_j [VP hitome e_i mita] hito_j]-ga one glance see-PRF person-nom

John_i-WA suki-ni natta]]
PN-CW liking-COP-GER become-PRF

'The person who took a glance at him fell in love with John (as opposed to...)'

If John-wa must be in an IP-adjoined position at LF, then this requirement conflicts with the need to reconstruct preposed WMCs in their D-Structure position in order for variable and anaphor binding to be possible in other sentences.

5.2.4 An LF Solution Without Reconstruction Effects

Having dispensed with Reconstruction Effects, some alternative explanation must now be sought for the phenomena that Hoji cites as evidence for the obligatory base-generation of thematic WMCs. Let us reconsider Hoji's binding theoretic evidence for this position with a slightly different set of examples, this time involving generic sentences. Below (83) and (84), in which the GRCs are thematic WMCs, are ungrammatical on the coindexations indicated.

(83) *[CP [NP [CP e_i sakusya-kara moratta] hono_j]-wa

author-ABL receive-PRF book-TP
[IP dokusya-i-ga [SC ej taisetu-ni] suru]]
reader-NOM important-COP do-IMP

'A book that he received from the author, a reader treats carefully.'

(84) *[CP zibun-i-no koto-ga kaite-aru kiz{i}]k{-wa} [IP hito{-i-ga}
self-GEN thing-NOM written-be article-TP person-NOM

kyoomi-o motte e{k} yonde miru.
interest-ACC hold-GER read-GER see-IMP

'Articles written about themselves, people read with interest.'

Since coreference of the EC and zibun with the ga-marked subject is in each case impossible, the thematic WMCs in these examples, must, if we accept Hoji's analysis, have been base-generated in some extra-sentential position. To assume this is to abandon the notion that GRCs undergo S-Structure movement in Japanese. But observe that when the subject NP is also marked with thematic wa, as in (85) and (86), instead of nominative ga, the sentences are acceptable.

(85) [CP' [NP [CP ei sakusya-kara moratta] honj{-i}-wa
author-ABL receive-PRF book-TP

[CP dokusya-i-wa [IP t{i} [SC t{j} taisetu-ni] suru]]]
reader-TP important-COP do-IMP

'A book that he received from the author, a reader treats carefully.'

(86) [CP' zibun-i-no koto-ga kaite-aru kiz{i}]k{-wa} [CP hito{-i-wa}
self-GEN thing-NOM written-be article-TP person-TP
These examples simultaneously contradict Kuno's assertion that only a single WMC can be thematic, and the assumption in this chapter that GRCs move exclusively to a Spec, CP position. I will speculatively regard the 'outer' WMC as CP-adjoined, although it is also conceivable that we may be looking at recursive CP projections. What principally concerns us in these examples is that when both object and subject are thematic WMCs, the embedded zibun and EC may be bound in a quantificational manner, even though they are not c-commanded by the subject. This is not predicted at all by Hoji's reconstruction account: if the object WMC is thematic, it cannot have been generated as a D-structure complement of V, and therefore cannot be reconstructed in that position at Logical Form. Nevertheless the bound interpretation of the EC and zibun is

\[ \text{IP } t_1 \text{ kyoomi-o motte } t_k \text{ yonde miru.}] \]

interest-ACC hold-GER read-GER see-IMP

'Articles written about themselves, people read with interest.'

22 Chomsky (1986a) rules out adjunction to CP. However, some (base-generated) adjunctions must be tolerated, even in English, as the following example suggests:

(i) As for Bill, what has he done lately?

23 The need for recursive CP projections, it will be recalled, is attested elsewhere in Japanese in the form of multiple complementation, e.g.,

(i) Iku ka to kiita

\[ \text{go-IMP CMP CMP ask-PRF} \]

'He asked if I was going.'
possible. We can accordingly rule out base-generation of a thematic WMC outside IP as the source of ungrammaticality in (83) and (84) and the other examples cited by Hoji (1985). Nor, it should be added, does a binding-theoretic account of immediately present itself as to why the sentences (85) and (86) are acceptable.

The solution, I propose, is to be sought in the semantic well-formedness of the sentence at LF. Since both WMCs are thematic, they are by definition, within the framework being developed in this dissertation, outside the scope of existential closure or other existential operators at Logical Form. Suppose that zibun is an LF variable to which a value must be assigned by an appropriate antecedent in the sentence. The generalization is that zibun can be bound by a non-c-commanding antecedent only if it is within the scope of the sentential operator binding its antecedent. Thus the LF of (86) is interpreted as in (87), where both WMCs restrict the operator Gen.

(87) Gen [article about self\(_x\)(y)] [person(x)] \(\exists\) [read with interest(x,y)]

Since (87) is logically equivalent to (88), this representation is well-formed, the variable of zibun being assigned a value at within the scope of the operator binding its antecedent.

(88) Gen [person(x) & article about self\(_x\)(y)] \(\exists\) [read with interest(x,y)]
On the other hand, (84), repeated below, is ungrammatical, because on the present account, *hito* must be within existential closure over the non-clear scope, which is IP. This is illustrated in (89).

(84) *[CP zibun\_no koto-ga kaite-aru kizi\_wa [IP hito\_ga self-GEN thing-NOM written-be article-TP person-NOM kyoomi-o motte e_k yonde miru. interest-ACC hold-GER read-GER see-IMP

'Articles written about themselves; people; read with interest.'

(89) \textit{Gen} [article about self\(_x\)(y)] \textit{\exists} [[person(x) & read with interest(x,y)]

Here the variable introduced by \textit{zibun} is bound by \textit{Gen} but no value is assigned to it within the scope of \textit{Gen}. The representation, mapped directly from S-Structure, violates the general principle that all variables must be assigned a value in order to be bound by an operator. Note that this is consistent with Chomsky's (1986b) notion of strong binding:\footnote{Chomsky (1986b: 85) proposes the following condition:}

\begin{quote}
\textit{A variable must be strongly bound.}
\end{quote}

This means that

\begin{quote}
\textit{either its range must be determined by its operator or its value must be determined by an antecedent that binds it.}
\end{quote}

It is the second of these requirements that is relevant in this context.
'self;' the two \( x \) variables cannot have the same reference. The variable \( zibun \) must therefore seek its referent from some higher antecedent. (In this case, since no referent is available locally, the antecedent must be extra-sentential.) (87) is thus ungrammatical on a reading where \( zibun \) is bound by \( hito \). This analysis may be extended readily to non-generic sentences involving proper names and also presumably to English examples like (79), where the resumptive pronoun rules out the possibility of a solution involving reconstruction. In the latter case it must be assumed that the subject (as theme) raises at LF.

The question then arises of how to account for the grammaticality of sentences like (68), repeated below:

\[
(68) \quad [IP \quad zibun\text{-ni-tuite-no} \quad honk\text{-wa} \quad [IP \quad dare-ga \quad tk \\
\quad self\text{-about-GEN} \quad book\text{-CW} \quad who\text{-NOM} \\
\quad suteta] \quad no \quad ? \\
\quad throw \text{ out-PRF} \quad CMP
\]

"The book about himself, who threw it out?"

Here certain assumptions must be made about the interaction of WMCs and LF \( Wh \) movement. In (68), \( dare \) 'who' must move at LF across the anaphor \( zibun \) 'self' and into the CP position, where it has scope over the sentence.\(^{25}\) (This is a Weak Crossover configuration, \( Wh \) movement)

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\(^{25}\) Whitman (personal communication) notes the following example as further evidence against reconstruction as an explanation. (i) is ungrammatical, since \( dare \) moves only to the embedded CP. On a reconstruction account of WMCs, however, the sentence is predicted to be grammatical.

\[
(i) \quad *[zibun\text{-ni-tuite-no} \quad hon\text{-wa}] \quad dare\text{-ga} \quad t \quad suteta \quad ka]
\]
but the variable properties of non-pronominal *zibun* guarantees no WCO effects in this instance.) It can be assumed following Hoji that contrastive WMCs are adjoined to IP. I also assume for the sake of simplicity that contrastive WMCs are within the scope of some form of constituent focus operator, the exact nature of which must be set aside for future investigation. The standard LF after *Wh* movement is shown in (90), together with the interpretation after quantifier decomposition, represented informally in (91). The grammaticality of (69) then arises out of *zibun* ‘self’ being within the scope of an operator that is itself within the scope of the interrogative operator. The sentence is well-formed since all variables are properly bound.

(90) \[\text{[dare} i [\text{IP} \text{zibuni-tuite-no honj} [\text{IP} t j \text{suteta}]] \text{no}^{26}\]

(91) which(x) person(x) Foc [book about selfx(y)] $\exists$ [threw out(x,y)]

Finally, we are left with the task of accounting for the ungrammaticality of thematic WMCs containing *zibun* in similar interrogative sentences such as (70), repeated below.

```
self-about-GEN book-TP who-nom throw out-PRF Q
siranai
know-NEG
'The book about self, I don't know who threw out.'
```

26 Note that there is no ECP violation here because the Spec CP position into which *dare* ‘who’ is moved is indexed only for *dare*. In this instance, therefore, the trace of LF movement of *dare* is properly antecedent governed.
In order to account for this sentence, it must be assumed that a thematic WMC that occupies Spec, CP at S-Structure has obligatory wide scope over Wh at LF. This, I think, is intuitively correct. (I will also assume, without discussion, the existence of a theme operator that may be regarded as a non-quantificational analogue of Gen.) This yields a semantic interpretation along the lines of the informal representation in (92).

(92) \[OP_{\text{Theme}} [\text{book about self}_x(y)] [\text{which}(x) \text{person}(x) \exists [\text{threw out}(x,y)]]\]

In (92), the same general explanation for the ill-formedness of the sentence holds as in (84): the variable represented by zibun is bound by an operator, but has no value defined for it within the immediate scope of that operator or some higher operator.\(^{27}\)

\(^{27}\) It is apparent that discourse factors play an important role. It can be seen, for example, that minor modifications of sentences such as (71) result in acceptability, e.g., (i) and (ii) below, which suggest that removing focus from Yamada-san is sufficient to license coreference.

(i) \[\text{CP zibun}_i-ni-tuite-no \text{honk}-wa [IP Yamada-san-ga self-about-GEN book-TW PN-NOM sugu ek suteta]}\]

immediately throw out-PRF

'The book about himself, Yamada threw out immediately.'
Although Hoji's use of Reconstruction Effects must be ruled out as an explanation of his data, an accounting remains possible within the framework being developed for generic sentences in this dissertation and extended (albeit crudely) to other thematic WMCs. I will therefore set aside Hoji's base-generation hypothesis as too strong, and allow movement of thematic WMCs into Spec, CP whenever this is not prohibited by Subjacency (e.g., as in (72)) or other constraints on movement. In this context, we may note the proposal of Lasnik and Saito (1990) that in matrix clauses, English Topicalization may move a constituent either into an S-adjoined position, or into a Comp position; that is, movement into CP is also possible. In the case of GRC raising, inasmuch as the movement is extremely local for reasons outlined in Chapter Four, nothing in principle inhibits such movement. If movement may take place, it can be assumed under Move α that it does take place.

Accordingly I will assume that in (86), repeated below, both subject and object WMC have moved into the CP projection, with the subject undergoing string-vacuous Spec-to-Spec movement, and the other WMCs, in this case the object, being adjoined to CP. (86) thus has the S-Structure representation given in (93).

\[
\begin{align*}
&\text{(ii)} \quad \text{[CP zibunj-ni-tuite-no honk-wa [IP Yamada-san-ga ek]}
\\& \quad \text{self-about-GEN book-TW PN-NOM [e yomazu]-ni ek suteta]}
\\& \quad \text{read-NEG-GER-DAT throw.out-PRF}
\\& \quad \text{The book about himself, Yamada threw out without reading.'}
\end{align*}
\]
5.2.5 A Note on Some Base-Generated GRCs

Although the argument can be made that GRCs move into the Spec, CP position, care must be taken to distinguish, between cases such as (86) above, where the relationship between the GRCs and the clause is extremely local and a movement account is possible, and more complex cases where a base-generated WMC relates into a gap
within a syntactic island. In (94) a generic WMC relates to an EC that is embedded within an object NP.\(^{28}\)

(94) \[\text{[CP Bentooj-wa [IP' hutuu [IP [NP \[ e_j e_i nokusita]] leave-PRF}}
\]
\[\text{koj]-o [IP okaasan-ga t}_j \text{ sikaru ]}}
\]
child-ACC mother-NOM scold-IMP

'A packed lunch; it is usually the mother who scolds a child who leaves any of it.'

In general, however, a generic WMC is not a good candidate for a base-generation in a CP position when it relates to an EC inside a subject noun phrase. This can be seen in (95) and (96), where the WMCs coreference with the gap is awkward and the sentences are highly marginal. (95) illustrates a sentence with a single subject, (96) one in which there are two nominative subjects.

(95) \[*?[\text{daigakuj-wa [IP' hutuu [IP [NP [ e}_j \text{ e}_i \text{ sotugyoosita]}}
\]
\[\text{hitoj-ga ii kyuuryoo-o morau]]]}
\]
person-NOM good salary-ACC receive-IMP

'Universities: usually students who have graduated from one receive high salaries.'

(96) \[*?[\text{tosyokar-no honj-wa [IP' hutuu [IP [NP [ e}_j \text{ e}_i \text{ kariru]}}
\]
\[\text{library-GEN book-TH usually borrow-IMP}}
\]

\(^{28}\) It will be observed that this sentence is well formed, although it violates Hasegawa's (1981) generalization that only the subject of a subject relative clause can be topicalized.
It seems that one should be able to construct true generic sentences of this kind. Yet the low acceptability of these sentences indicate that other factors than genericity are at stake. The sentences fail to meet minimal requirements of pragmatic relevance (in the terms of Kuno (1976), 'aboutness') This can be seen from the fact that with slight modification, as shown in (97), the plausibility of (95) can be significantly enhanced, even though the two sentences are otherwise equivalent in every relevant syntactic respect.

(97) [daigaku]-wa [IP' hutuu [IP [NP [ej ii seiseki-de ei
tuniversity-TH usually good grade-INS
sotugyoosita] hitoj]-ga ii kyuuryoo-o morau]]]

'Universities: people who graduate from them with good grades receive high salaries.'

Evidently the availability of the EC in the embedded clause is not itself sufficient to license the relationship between the WMC and the rest of the sentence. Rather it is the introduction of the phrase *ii seiseki de* 'with good grades' that creates the necessary relevance relation. No consistent syntactic account of these base-generated cases appears to be possible, and I will not attempt to do so.
In view of the general marginality of these base-generated WMCs unless properly pragmatically licensed, I will set aside examples such as (94) and (97) as illustrating cases of GRCs that incidentally happen to be 'topics,' equivalent to English S-Structure Left Dislocations. They therefore constitute a special subcase of thematic WMCs and one that is beyond the purview of the present investigation.

5.3 Against the Determiner Analysis of Wa

The hypothesis that GRCs, as a subclass of thematic WMCs, may move into Spec, CP carries with it certain theoretical consequences. In GB theory, the Specifier of CP position, as the canonical landing site for overt Wh-Movement, is standardly considered to be an 'operator' position (e.g., Chomsky, 1986a,b; Rizzi, 1990). Since thematic WMCs are evidently in this position at S-Structure, one possibility that might be seriously entertained is the idea that wa itself is a Wh-like operator. Thus would highlight the syntactic parallel between the Wh questions and generic sentences, but it would also, by the same token, entail that the Gen operator has rather different syntactic properties from that assumed so far.

A proposal for a Wh-like status is especially obvious if wa is assumed to be a determiner. In this instance, we might adopt a proposal, originally due to Brame (1982), and subsequently developed
in Fukui (1986), Abney (1987) and Stowell (1989) that determiners head a non-lexical projection DP (Determiner Phrase). Readers are referred to these works for the theoretical arguments in support of such an analysis. Within the X-bar theoretic framework of the DP hypothesis, the possibility that \( \text{wa} \) has the status of a \( D^0 \) head has a prima facie plausibility, since Japanese X-bar structure is canonically right-headed as in the schema shown below. This structure is consonant with the rigid requirement that the head of XP in Japanese takes its complement to left.

(98)

\[
\begin{array}{c}
\text{XP} \\
\bigcup \\
\text{YP} \quad \text{X'} \\
\bigcup \\
\text{ZP} \quad \text{X}^0
\end{array}
\]

Accordingly we might conjecture that \( \text{wa} \), which occurs on the rightmost periphery of its constituent, is the \( D^0 \) head of a DP. Treatments along these lines have been proposed by Tateishi (1989, 1990) and Tonoike (1987).\(^{29}\) Tateishi (1990) proposes, largely on the basis of Kuno’s assumed definiteness of thematic WMCs that thematic \( \text{wa} \) is a \( D^0 \). However, he also analyzes contrastive \( \text{wa} \) as a

\(^{29}\) Tonoike (1987) posits a structure in which both the specifier and head of XP are to the right, and in which \( \text{wa} \) is a specifier of DP. Such structures seem unmotivated, however, in light of the canonical requirement that subjects and possessives always occur to left of VP and NP respectively.
P°. Such a treatment is unsatisfactory: not only does it postulate two separate forms, but it misses the fact that the 'definiteness' effects associated with thematic WMCs are arguably a function of their structural position in the sentence (namely outside existential closure at Logical Form) and are in no way inherent to wa.

(99)

Superficially, the structure in (99) would seem to offer a plausible account of wa, given the paucity of determiner-like entities in other positions in Japanese. The items that resemble English determiners most, a class of deictic forms kono 'this', sono 'that near you', might then be presumed to function as specifiers of DP. Fukui (1986) and Fukui and Speas (1986), however, argue extensively against this treatment on several grounds. First, these forms do not close off a projection as in English, but permit a potentially infinite concatenation of modifiers to the left:

(100) kono hon  ‘this book’

this book
Pronominals and anaphora may be freely modified by adjectives, relative clauses (and for that matter genitives and *sono*, etc.). Since in English these proforms behave as inherent DPs and resist modification, the possibility of such modification suggests that they cannot be DPs in Japanese.

Third, there is no evident distinction between relative and appositive clauses, the latter presumably attaching to an NP node or higher. Fukui cites the stackability of clauses modifying proper nouns (1985: 235).
John, who is supposed to attend the international conference in Osaka, who has just returned from America.

These data are entirely consistent with Fukui and Speas' (1986) larger theoretical claim that only lexical categories are iterable, while functional categories are non-iterable and must be closed off by a single specifier. Ergo, they claim, Japanese does not have a DP and all Japanese NPs are projections of the lexical category N.

Nevertheless, arguments of this kind do not eliminate the possibility that *wa* might be a Wh-like determiner; to do this we must consider some specific properties of WMCs themselves. In the following I will set aside the thematic-contrastive distinction to show that *wa* exhibits a number of syntactic and semantic characteristics that are inconsistent with the properties of hypothesized DPs in English: (i) sensitivity of interpretation to syntactic position, (ii) attachment to any XP, (iii) and rigid outermost position on XP.

### 5.3.1 Sensitivity to Syntactic Position

The first argument against the D° analysis stems from the fact that WMCs are open to different interpretations in different syntactic positions. Thematic *wa* is evidently in a position on the left periphery of the sentence that has been identified as Specifier of CP, while con-
trastive *wa* can be analyzed as within IP, or moved to an IP-adjoined position, and appears to be associated there with a form of constituent focus. Moreover, it has already been shown that the definiteness effect exhibited by a thematic WMC is not inherent to the WMC itself, but are a function of its position at Logical Form, as reflected by its S-Structure Scope. Thematic WMCs thus cannot be construed existentially, while contrastive WMCs, which may under some circumstances be within the scope of existential closure at Logical Form, may receive such a construal. Thus the NP meanings compatible with the two types of *wa*-marking are constrained by their respective positions in the sentence: This behavior is quite atypical of determiners, which should contribute to the sentence a meaning that is insensitive to structural position (e.g., Barwise and Cooper, 1981). It also suggests that the correct analysis is one in which the WMC can restrict a variety of operators with predetermined scopes with respect to the sentence.

30 For example, in the following, the WMC has an existential construal:

(i) Hon-*wa* katta kedo...
Book-*cw* bought but
'I bought a book, [implication: I didn't buy anything else]

31 Except for the ever problematic indefinite article *a*. Heim's (1982) proposals concerning this particle turn out to be extremely relevant to our understanding of generic *wa*. 
5.3.2 Attachment to XP

Determiners are inherently associated with NPs in linguistic theory. In the semantic model of Barwise and Cooper (1981), extended by van Benthem (1986) a determiner defines a relation between a common noun and a predicate. In the DP hypothesis of Abney (1987) and Fukui (1986), DP is a functional category that selects specifically for NP. Fukui (1986) claims that functional categories select a unique lexical type as complement. Perhaps the single most important argument against treating *wa* as a D°, therefore, is the fact that *wa* also attaches to virtually all non-NP constituent types (except apparently IP).

We have already seen numerous instances of attachment to PP throughout this dissertation. Some further examples:

(107) Morioka-made-wa Sinkansen-de itta PN-up-to-TP new-trunk-line-INST go-PRF

'We went as far as Morioka by bullet train.'

(108) Gakkoo-de-wa amari hanasanakatta school-LOC-TP overly speak-NEG-PRF

'At school he didn't talk much.'

In addition, *wa* may occur in conjunction with a variety of VP types, where it is associated with focus on the V°. In the following it

\[^{32}\text{Most are, it will be noted, categories bearing the feature [+N]. One major exception, however, is PP, which is a [-N] category. No generalization in terms of features is therefore possible.}^\]
occurs on the bare (uninflected) V° form, the verb suru evidently providing do-support for a non-lexical IP.

(109) [IP e [VP hon-o nusumi]-wa sinakatta] kedo, iti’oo book-ACC steal-TP do-NEG-PRF but, generally

mudan-de karita.
without permission-INSTR borrow-PRF

‘He didn’t [actually] steal the book, but he more or less borrowed it without permission.

Wa-marking is also found on the -te form gerund where it results in a variety of construals. In (110) and (111), below, wa intervenes between the gerund and IP, which is manifested by the auxiliary verb iru ‘be.’

In (110), wa-marking results in a concessive construal for the embedded clause; in (111) it is associated with a modal element.

(110) [IP e [VP aitu-to tukiatte]-wa ita] kedo ...
that-guy-COM associate-GER-TP be-PRF but

‘I did in fact used to see the guy, but... [we weren’t very close]’

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33 It might be argued that the uninflected verb stems and and the -te form gerund in these examples are actually [+N] suffixes like -ing in gerunds. However, note also that to the extent that these forms assign accusative case to their arguments, they retain their verbal properties. In this respect their behavior is unlike that of English gerundal forms in -ing, which cannot cooccur with a determiner if they assign case to their arguments, as illustrated by the difference in grammaticality between (i) (a) and (b).

(i) (a) *The striking the match
      (b) The striking of the match.

34 See also the Appendix to Chapter Three for a discussion of the use of te wa in conditional constructions.
(111) Ronbun-o kaite iru saityuu, terebi-o dissertation-ACC write-GER be-IMP midst TV-ACC
mite wa irarenai see-GER-TP be-POT-NEG-IMP
‘You can't be [wasting time] watching TV while you're writing your dissertation.’

Also inconsistent with a D° analysis is the fact that adverbial expressions are generally compatible with wa-marking. In the following, wa yields an implicature that something is left unsaid, an implicature that is only captured in English by intonation.

(112) Kinoo-wa yatta kedo yesterday-TP do-PRF but
‘I did it yesterday, but ...[not today]’

(113) Hayaku-wa kakenai kedo... quickly-TP write-POT-NEG
‘I can't write quickly, but ...[I can do it neatly]

The range of adverbial expressions that may become WMCs extends to include floating quantifiers of various kinds. Below, wa seems to contribute an ‘at least’ implicature that cannot be accounted for by treating it as a determiner.

(114) Gohan-wa sukosi-wa nokotte iru kedo rice-TP little-TP remain-GER be-IMP but
‘There is a little of the rice left at any rate.’
‘When we buy a house, let’s plant at least one apple tree.’

‘We drank 2-3 beers at any rate.’

Even more problematically, *wa* attaches to adverbs of quantification in the sense of Lewis (1975). Since these must be considered to be relational operators in their own right, they are unlikely candidates for the complement of *D₀*. In (117) below, the effect of *wa*-marking is to bring *itumo* into constituent focus, and hence place it within the scope of negation. The same may also be observed with respect to other adverbs of quantification.

The range of attachment possibilities observed above is completely without counterpart in the DPs postulated for English, which
are canonically restricted to taking NPs as complements of their heads. In order to account for the phenomena listed here, we would have to identify a variety of different homophonous forms of *wa*, each of which might contribute differently to the meaning of the sentence. Such a proliferation of lexical morphemes seems undesirable, especially given what is known about the relation between the thematic *wa* and its position at S-Structure and LF. Rather, it seems more plausible that there is a range of operators that may have scope over the sentence, and *wa* very generally indicates the minimal element restricting that operator.

5.3.3 Outermost Position

The third property that sets *wa* apart from determiners in English is the fact that this particle must occur in the outermost position on any non-sentential constituent in which it occurs. This means, for example that we never find *wa* in any NP internal position. Consider the following:

(120) (a) *[sensei-wa-no hon NP]
teacher-TP-GEN book
(b) *[sensei-no-wa hon NP]
teacher-GEN-TP book
(c) *[sensei-wa hon NP]
teacher-TP book
(d) zenbu-no sensei-no hon all-GEN teacher-GEN book
'all the teacher's books'

(121) (a) Every teacher's book
(b) the books of every teacher

If *wa* is a determiner, we would expect a WMC to be able to appear in a position comparable to *every teacher* in either (121)(a) or (b). But this prediction is not borne out. (120)(a) and (b) show that *wa* can occur neither to the left nor the right of of the genitive marker *no*. (120)(c) shows that it cannot show up independently. If a quantified expression of any sort is to be present inside an NP, it must be of the prenominal form shown in (120)(d).

In a similar vein, *wa* does not attach to an NP inside a PP as might be expected of a determiner. Instead it may only occur on the outside (to the right) of the PP.

(122)

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NP   PP
  kuukoo | made-wa
  airport up to
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(123)

```
NP   PP
  *kuukoo-wa | made
  airport up to
```

This contrasts with the behavior of English determiners, which cannot appear outside a PP, as the following examples indicate.
The requirement that \textit{wa} must appear on the rightmost periphery is completely rigid, and extends to the case of multiple PP embeddings.

(128) (a) Nizi made ni wa 2 o'clock until to 'by two o'clock at least'
(b) *Nizi made wa ni

In like manner, \textit{wa} occurs only on the rightmost periphery of a number of quantifier-like elements that attach to NPs
(129) (a) \[ [[\text{Tanaka-san}] \text{ dake}\] \text{ wa}] \\
\text{PN only} \\
'Tanaka-san and only Tanaka-san'

(b) \*[[[\text{Tanaka-san}] \text{ wa}] \text{ dake}]

(130) (a) \text{ sigoto bakari wa} \\
\text{work just} \\
'with respect just to work'

(b) \*\text{ sigoto wa bakari}

The ordering facts adduced above are significant in that they demonstrate that \text{ wa}-marking never occurs internally with respect to an NP or PP. This means that \text{ wa} may only appear on a constituent that is immediately dominated by a member of the extended projection of VP, i.e., the VP itself or the functional categories CP and IP. \text{ Wa}-marking, it appears, must be treated as a sentence-level phenomenon and not an NP-level one. In his early transformational treatment of Japanese, Kuroda (1965) proposed that \text{ wa} might be base-generated in sentence final position and attached to its S-structure constituent as a result of a movement operation. Although we not need to adopt this \text{ wa}-attachment transformation, the insight implicit in Kuroda's account that \text{ wa}-marking relates to sentence structure rather than NP-structure remains valid.

In this respect, the behavior of \text{ wa} is reminiscent of English association-with-focus forms such as \text{ only} and \text{ even}. Rooth (1985: 93) observes, as a possible argument against the constituency of expressions like \text{ even John}, that in the following examples \text{ only} and
even are marginal or impossible inside PPs and cannot occur in NPs.\textsuperscript{35}

(131) ??They joked about even the flood.

(132) *The entrance even to the Santa Monica Freeway was blocked by the flood.

These examples do not, I believe, demonstrate per se that all expressions containing even and only cannot be regarded as unitary constituents but it does suggest that they are not to be analyzed as determiners. Moreover, it suggests that the correct analogy to be drawn is not between wa and determiners, but between wa and association-with-focus markers of this kind. Support for this analysis may be sought in the fact that wa is in complementary distribution with counterpart forms in Japanese: Kuroda (1969), observes that wa is deleted in the presence of sae ‘even’ and mo ‘also, even:’

(133) (a) *hon-sae-wa
   book-even-TP

(b) *hon-wa-sae
   book-TP-sae

The data given in the preceding pages is inconsistent with an analysis of in which wa is assigned the status of a D\textsuperscript{0} head. On the other hand, it is consistent with the notion that WMCs may restrict a range of sentential operators. One of these operators can be identified

\textsuperscript{35} I do not find Rooth's examples as unacceptable as he apparently does. The starred Japanese examples in this section, though, are completely ungrammatical.
as Gen, and it is likely that other thematic WMCs may be under some non-quantificational counterpart that we can associate with thematicity. Contrastive wa, we may tentatively assume to be under some sort of focus operator that permits association with focus and negation under appropriate circumstances whose nature remains to be fully explored.

5.4 Some Syntactic Consequences of the Adverbial Model

Chomsky (1981) proposes that the COMP position is the head of the sentence, a hypothesis he further elaborates in Chomsky (1986a) where he adopts the non-lexical C° as the head of a projection that takes IP as its complement. Rejecting the notion that wa is a D° head or Wh-like operator has consequences for our conception of CP in Japanese, since it means that an Operator+NP is not being placed in CP.

This is problematic since the CP projection is canonically regarded as an operator position. In English, its specifier position is the landing site for a variety of operators that have must have sentential scope, notably relative clause operators, and Wh-phrases and other members of a class that Rizzi (1990), following Klima (1964), terms Affective Operators.36 According to standard theory, the

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36 This class, which consists essentially of items that license negative polarity items, can be identified as in the Spec CP position by the fact that they trigger subject aux inversion:

(i) With no job/few jobs would Bill be happy.
nature of the operator that may appear in the CP position at S-Structure is determined by the head, namely C°. In the case of Wh-phrases, the C° parametrically selects in English for a [+wh] element to appear obligatorily in Spec, CP at S-Structure, but in declarative sentences it selects only for a limited range of other elements. The Gen operator is not selected for at S-Structure in English.

In Japanese, precisely the converse is true. CP cannot select for [+Wh] at S-Structure, so that all Wh forms must move at LF. But, if the hypothesis put forward by Whitman (1989b, 1990, 1991) is correct that all Japanese matrix sentences are CPs, we may assume that the head may select for the Gen operator (along with possibly a variety of other operators). It will be noted that Gen is only ‘visible’ at LF, having no direct S-Structure instantiation; evidence for it must be sought in the interpretation of WMCs where wa-marking has taken place. The head reserves, as it were, a site for the WMC so that it may be in the correct position to be quantified over at logical form. The WMC moves to restrict Gen.

As an adverbial operator, Gen shares with Wh the property that it has obligatory clausal scope. Quantification by Gen is thus over entire sentences, relating two arguments, the restrictive term and the nuclear scope (=IP). It is conceivable that only quantificational elements with obligatory clausal scope trigger S-Structure movement; while quantifiers that have variable scope must undergo
movement at logical form.\(^3\) Moreover, like Wh-movement in English, thematic wa-marking of GRCs appears to be obligatory: GRCs must (unless themselves the target of constituent focus) be raised into Spec, CP in order to be in the right location to restrict the operator. Since Japanese raises the GRC into CP at surface structure with consequences for LF interpretation, and English does not, I have hypothesized that this movement is parameterized in Universal Grammar so that 'generic raising' into CP takes place at S-Structure in Japanese and strictly at Logical Form in English. It will be noted that the parameterization works in diametrically the opposite fashion from the case of Wh- movement. Why this should be so remains far from clear.

We may observe in all this that there is a significant difference between the structures standardly assumed to result from Wh-movement in English and those that I have proposed in the analysis of thematic WMCs in Japanese. I have indicated that wa is not a determiner, and is not the Gen operator, but rather marks a constituent as the minimal element restricting that operator. Thus, whereas the constituent that occupies the Spec, CP position at S-Structure in English includes the operator that is selected for by the head as seen in (134) below, the structure in (135) has the operator, which is visible only at LF, in an adjoined position on CP, theSpecifier of CP position.

\(^3\) I am grateful to John Whitman for this suggestion.
being occupied by an NP or other constituent that does not bear a determiner.

(134) English Wh

(135) Japanese Gen

It will be recalled that Partee (1989) identifies two broad quantifier types. One is D-Quantification, which may be associated with generalized quantification by NPs with determiners, in the manner of Barwise and Cooper (1981), and includes quantification by means of Wh-operators. The other is A-Quantification, which is performed by a variety of sentence-level elements, notably adverbials, but also auxiliaries and various affixes. The unifying generalization that can be made concerning these two quantificational types is that they can be decomposed some level of representation into three components: an operator, a restriction, and a nuclear scope as shown in (136), adapted from Partee (1989):
Even though no overt quantifier is present, a constituent in Spec, CP is thus analyzed as being quantified over by an adverbia"l operator. What is important for the interpretation is not the S-Structure grouping of the operator and its restriction at S-Structure, or at LF, but rather that at the level of representation at which decomposition of quantifiers takes place, generic WMCs have a quantificational structure that is semantically homomorphic with other, hitherto better recognized forms of quantification. A version of the structure in (136) structure has always been implicit in the informal decompositions of quantifier structures found in generative literature (e.g., Chomsky 1977, 1981), where it has been employed as a unifying generalization for ‘quantifiers’ and Wh-phrases, and we may extend it to the case of generic sentences as in (138)

(a) For every x, x a book, John bought x
(b) For some x, x a book, John bought x
(c) For which x, x a book, John bought x

(138) Gen x a homing pigeon x returns to its nest

If the operator does not constitute a single unit with the restrictive term, the question arises as to how the C° head gets to select the
operator. Since the operator is not in the Specifier position, it cannot be licensed by Spec-Head agreement of the sort proposed for English Wh-movement (e.g., by Fukui (1986)). Rather it seems that the operator is licensed by the head in a more general fashion than is the case for Wh: witness the slew of Adverbs of Quantification that can be employed in Japanese in lieu of the Gen operator as observed in Chapter Four. The C0 head might be supposed to select specifically a quantificational type that these adverbs can modify. Both Gen and the adverbs of quantification seem to be part of the modal system of language. Suppose that in generic sentences, the C0 head 'attracts' adverbial operators with modal properties, that require sentential scope at LF. These adverbs may be base-generated elsewhere in the sentence and are obligatorily moved at LF into a position where they manifest sentential scope. One consequence of the adverbial model, it might be added, is that adjunction to CP is also possible, with multiple GRCs of the kind observed in §5.2.3, since the Spec, CP position is under no constraint that it be occupied by a single operator at S-Structure

The S-Structure reflection of Gen through overt movement of the GRC into CP may also be considered within the light of quantification in Japanese. It is a familiar fact that although NP-internal

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38 See Travis (1988) for a theory of adverb licensing by the head of a functional category.

39 Whitman (1989a), for example, has proposed that 'topics' in Korean and Japanese may be licensed by modality.
quantification is possible in Japanese, quantification is predominantly adverbial, performed by means of floating quantifiers rather than NP quantification with determiners. (See Katagiri (1983), and Miyagawa (1989) for discussion.) This is illustrated in the trivial example in (139).

(139) Kodomo-ga sannin t hasitte kita
Child-NOM three running come-GER

'Three children came running.'

It might be speculated that that Japanese may move GRCs into CP at S-Structure because quantification in this language is in general adverbial. English, on the other hand, allows adverbial quantification only peripherally, and primarily selects for determiner quantification. Since Wh is a form of determiner quantification, it is that form of obligatory clausal-scope quantifier that is parametrically selected to enter the Spec, CP position at S-Structure. The two languages thus place in CP at S-Structure constituent types that reflect the properties of their predominant quantifier types.
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