



# Complex predicates in Japanese : a syntactic and semantic study of the notion 'word'

Matsumoto, Yo

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**Complex Predicates in Japanese:**  
**A Syntactic and Semantic Study of**  
**the Notion 'Word'**

**Yo Matsumoto**

*Thy word is a lamp unto my feet,  
and a light unto my path.*

Psalm 119:105

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## Preface

This book is a revised version of my dissertation submitted to Stanford University in 1992 under the title *On the Wordhood of Complex Predicates in Japanese*. Revisions have been made extensively in every chapter, but except for a few sections in Chapter 7, basic claims made in this book are essentially the same as the dissertation version.

The process of writing my dissertation and the subsequent revision for this book has been a time of appreciating how blessed I am with good friends, and realizing how little I can do by myself. Academically, my deepest gratitude goes to my advisors for my dissertation Joan Bresnan, Peter Sells, Bill Poser, and Mat Shibatani. I am grateful for their teaching, patience, guidance and criticisms as I wrote my thesis.

My debts to students I studied with at Stanford are enormous. I am especially grateful to Alex Alsina, Beth Bryson, Miriam Butt, Mary Dalrymple, Tan Fu, Ki-sun Hong, Masayo Iida, Michio Isoda, Paul Kroeger, Makoto Kanazawa, Charles Lee, Tara Mohanan, Chris Piñón, Mariko Saiki, and Shuichi Yatabe for spending their time in various ways for my study.

During my stay at Stanford I was also able to work with a number of professors on broader issues in linguistics. They include Dwight Bolinger (late), Eve Clark, Joseph Greenberg, Stephen Levinson (visiting, 87-88), and Elizabeth Traugott. My study in the US was also enriched by my frequent visits at UC Berkeley. I am especially grateful to Chuck Fillmore, Paul Kay, George Lakoff, Eve Sweetser, Len Talmy, and Adele Goldberg for broadening my horizon of linguistics. Their influence can be seen in some chapters of this book.

In a more private level, my parents Takeshi and Chie Matsumoto have also provided me a valuable support for my study. I would also like to thank a number of my friends in the Christian community for their support in visible as well as invisible ways. My final and greatest thanks are due to my son Nobuyuki, who allowed me to work on this “ABC stuff” on “our” computer, and to my wife Masako, whose love, patience and encouragement have made this writing process much more comfortable than it must have been without her.

When the children of Israel led by Joshua crossed the Jordan River to enter the Promised Land, God told them to pick up stones from the bed of the river, so that they could explain what God had done for them when someone later asked what those stones meant (Jos 4:5-6). The finishing of

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this work is one such stone for me, a reminder of how gracious God is, in spite of my weaknesses. To Him be the glory, Amen.

## CHAPTER 1

### Introduction

This book is about the nature of Japanese complex predicates and the notion ‘word’. The term ‘complex predicate’ is used in this book to refer to a predicate that is in some sense one word but in some other sense two (or more) words. The task of this book is to explore the notion ‘word’ and the nature of complex predicates in Japanese to determine in what sense they are one word and in what sense they are not.

The predicates and constructions that will be discussed in this light include the *mora(w)(-u)* and *hoshi(-i)* constructions (Kuno 1973, Inoue 1976a, b, 1982, 1989a, b, Shibatani 1978),<sup>1</sup> light verb constructions (Grimshaw & Mester 1988, Miyagawa 1989a, Tsujimura 1990), desideratives (Kuno 1973, 1983, Inoue 1976a, b, 1982, 1989a, b, Sugioka 1984, Sells 1990), causatives (Kuroda 1965a, 1981, Shibatani 1973a, 1976a, b, Inoue 1976a, b, 1982, 1989a, b, Tonoike 1978, Miyagawa 1980, 1989b, Farmer 1980, 1984, Dubinsky 1985, 1994, Ishikawa 1985, Kitagawa 1986, Gunji 1987, Di Sciullo & Williams 1987, Baker 1988), aspectual and other syntactic compound verbs (Shibatani 1973b, Inoue 1976a, b, 1982, Kuno 1983, Nishigauchi 1993), lexical compound verbs (Kageyama 1993), and purposive and participial complex motion predicates (Miyagawa 1987b, Matsumoto 1991a). Previous studies on these items (cited above) have been done in various frameworks, including Transformational Theory (e.g., Kuroda 1965a, 1981, Kuno 1973, 1983, Shibatani 1973a, b, 1976a, b, 1978), (‘Remarks’ type) Lexicalist Theory (e.g., Miyagawa 1980, Farmer 1980, 1984, Inoue 1982), Government and Binding Theory (e.g., Kitagawa 1986, Di Sciullo & Williams 1987, Baker 1988, Grimshaw & Mester 1988, Inoue 1989a, b, Miyagawa 1989b, Nishigauchi 1993), Lexical-Functional Grammar (Ishikawa 1985), Generalized Phrase Structure Grammar (Gunji 1987), and Relational Grammar (Dubinsky 1985, 1994).

The present work is set in the framework of Lexical-Functional Grammar (Bresnan 1982a, b, c, d, 1994a, Bresnan & Kanerva 1989,

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<sup>1</sup>The parenthesized suffixes here represent non-past tense markers. I will often ignore this morpheme boundary, especially in Chapters 3 and 4, in which morphology is not of much concern, and also in glosses in example sentences, for practical reasons such as lack of space.

Bresnan & Moshi 1990, Dalrymple, Kaplan, Maxwell & Zaenen 1995, Levin, Rappaport & Zaenen 1983, Sells 1985, etc.).<sup>2</sup> One feature of this theory is that the different kinds of linguistic information —information concerning syntactic constituents, grammatical functions, thematic roles, etc.—are encoded in different structures (or levels) of often different formal character. These structures are not related by derivation, but are co-descriptions all of which are available simultaneously. Some of the recent versions of this theory and closely related works have assumed three levels of representation: constituent structure, functional structure, and argument structure (e.g., Bresnan & Kanerva 1989, Bresnan & Moshi 1990). Some have recognized another structure: (lexical-)semantic structure (Butt, Isoda & Sells 1990, T. Mohanan 1994), which is the least well-understood. In this thesis, I assume these four levels of representation.

Constituent structure (c-structure) is the surface phrase structure of a sentence with syntactic categories of terminal strings and phrases. Functional structure (f-structure) encodes the grammatical functions of expressions in a sentence, represented in an “attribute-value” structure. Argument structure (a-structure) represents (thematic) arguments of a predicate, usually with thematic role labels. Semantic structure (s-structure) represents more detailed meanings of various expressions. The information that these representations encode will be further discussed below.

The main thesis of this book is that the notion ‘word’ is relativized (Bresnan & Mchombo 1995), manifesting itself in different ways in different levels of grammar, and that a complex predicate can vary in its “one-word-ness” accordingly. The word is an atomic unit in syntax, but this atomicity can be defined in several ways (cf. Di Sciullo & Williams 1987). The notion ‘word’ can be defined in terms of its morphological integrity: the word is a unit whose parts cannot be separated from each other. It can also be defined in terms of grammatical-functional properties: in the case of verbs, for example, it is the unit that governs grammatical functions such as subject and object, and that undergoes grammatical function changing (alternating) operations such as passivization. The word can also be defined as a unit of meaning: it is a unit that conveniently packages meanings in an integrated way (e.g., Wierzbicka 1972).

These different senses of word atomicity represent the definition of the word at three different syntactic levels of representation: constituent, functional, and argument structure. In canonical cases, one and the same unit functions as an atom in all of these different senses. The simplex verb

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<sup>2</sup>Sells 1985 and Wescoat & Zaenen 1991 provide a short introduction to this theory. For more technical issues, see Bresnan 1982a and Dalrymple, Kaplan, Maxwell & Zaenen 1995.

*love*, for example, is a word in all three senses. In the case of complex predicates, however, the units that count as one word in each sense diverge, as I will show in this book.

Such discrepancies regarding the unit identified as the word in different senses have been noted in the literature. Booij (1990) observes that separable complex verbs in languages like German and Dutch are composed of two words in terms of their morphological integrity but that they behave as one unit functionally and semantically (see also Ackerman 1987, Piñón 1992, Neeleman & Weerman 1993). T. Mohanan (1994, 1995) notes that noun-incorporating verbs in Hindi constitute one morphological word (one word at c-structure) but are actually two words in terms of their functional properties. The mismatch between the unit that undergoes certain syntactic operations and the unit that is morphologically integral has been noted in Japanese (e.g., Kuno 1987, Kageyama 1989).

The recognition of the mismatch between the word at surface and underlying levels of representation has also been a source of differences among different grammatical theories. Transformational theory has treated many predicates as being formed in syntax, raising an embedded predicate to an upper one and combining the two to form one predicate (Predicate Raising). The assumption here is that the word at an underlying level of representation can differ from the surface word (see Kuroda 1981 on this issue). Such a treatment was not sanctioned under the strong lexicalist position (cf. Chomsky 1970, Miyagawa 1980), but it has been resurrected in Baker's (1988) theory of Incorporation (head movement). (See below for a treatment of such cases in LFG.)

The task of this study is to examine the three definitions of the word (at c-structure, f-structure, and a-structure) by investigating various complex predicates in Japanese. I will propose various tests to identify one word (predicate) at these levels of representation and then apply these tests to advance an analysis of these complex predicates. The results of the tests turn out to be consistent, supporting the separation of levels as conceived in the organization of grammar that I assume.

The three senses of 'word' studied here are not exhaustive: the word can also be defined in terms of its phonological properties. I will not, however, discuss the notion 'phonological word' in this book. See Poser 1984 for some discussion of the phonological word in Japanese.

This book is organized as follows. In Chapter 2, I will survey the nature of the different levels of representation and discuss crucial Japanese facts treated in each level to establish criteria for defining the word (predicate) at each level (though the full discussion of the wordhood at a-structure will be postponed until Chapter 10). Chapters 3 through 9 are devoted to the analysis of various predicates and constructions in Japanese.

They are arranged so that the discussion will gradually move from syntax to semantics. Chapter 3 is about constructions which turn out not to involve a complex predicate (i.e., involving two words at all three levels of representation): the *mora(w)(-u)* construction and the *hoshi(-i)* construction, in which the sequence of participial verb plus main predicate appears superficially to form a complex predicate. Chapter 4 is about light verb constructions, which consist of the sequence of accusative-marked “verbal noun” plus “light” verb (e.g., *benkyoo o suru* ‘do a study’). I will argue that this sequence, too, involves two words at all three levels of representation. Chapters 5 through 7 are devoted to “ambiguous” complex predicates that are one word at c-structure and two words at a-structure, but which can be either one or two words at f-structure: desideratives (e.g., *yomi-ta(-i)* ‘want to read’), morphological causatives (e.g., *yom-ase(-ru)* ‘cause to read’), and aspectual and other “syntactic” V-V compounds involving a complement structure (e.g., *yomi-hajime(-ru)* ‘begin to read’, *yomi-kane(-ru)* ‘be reluctant to read’). Chapter 8 deals with “lexical” V-V compounds in which the first verb represents the manner, means, cause, etc. of the process denoted by the second (e.g., *kake-agar(-u)* ‘go up running’, *oshi-taos(-u)* ‘topple by pushing’). I will argue that these compounds are one word at all three levels. Chapter 9 is about what I will call complex motion predicates, such as *kai ni ik(-u)* ‘go to buy’ and *motte ik(-u)* ‘go having’. I will argue that these are one word at a- and f-structure, but two at c-structure. Chapter 10 differs from the preceding chapters in that it is not devoted to an examination of a particular kind of predicate; instead, I will examine the constraints on semantic wordhood (wordhood at the level of a-structure), on the basis of data from both simplex and complex predicates representing spatial motion. This is an issue which has not received much discussion in the literature and on which the present work makes a unique contribution.<sup>3</sup>

As part of my treatment of these predicates and constructions, I will discuss various alternative proposals that have been made about them. Since the range of predicates that I will be discussing is diverse, and previous proposals have been couched in different frameworks with respect to different kinds of predicates, I will discuss the relevant alternative approaches separately in each chapter. These include Grimshaw & Mester’s (1988) argument transfer account of the *suru* light verb construction, the Incorporation approach to causatives and desideratives (Baker 1988, Inoue 1989a, b), the restructuring account of complex motion predicates (Miyagawa 1987b), and Kageyama’s (1993) analysis of lexical compound

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<sup>3</sup>Readers whose interest in this book is purely lexical-semantic or “cognitive” (cf. Langacker 1987, Talmy 1985, 1988) might want to skip Chapters 3 through 7, although some parts of Chapter 6 might be of interest to them.

verbs. Transformational accounts of the *morau* and *hoshii* constructions, causatives, desideratives, and aspectual compound verbs (e.g., Kuno 1973, 1983, Inoue 1976a, b, Shibatani 1978) will also be discussed.

## CHAPTER 2

# Levels of Representation, the Notion ‘Word’, and the Grammar of Japanese

The purpose of this chapter is to discuss the different kinds of linguistic information encoded in different levels of representation, examine the notion ‘word’ or predicatehood at each level, and review some crucial Japanese facts that relate to the identification of the word (predicate) at each level.

## 2.1 Levels of Representation

### 2.1.1 Semantic Structure

One of the levels of representation assumed in this book is (lexical-) semantic structure. The aspects of meaning treated in this structure are the meanings of lexical items, such as *go*, *lift*, and *kick*, which may be decomposed into more primitive semantic entities (e.g., Gruber 1976, McCawley 1968a, Lakoff 1970, Wierzbicka 1972, 1980, Jackendoff 1983, 1990, etc.).<sup>1</sup> In recent years there has been a renewed interest in this area, especially in relation to certain grammatical phenomena (e.g., Levin 1985, 1993, Pinker 1989, Jackendoff 1990, Levin & Pinker 1991).

Those who have assumed some sort of lexical-semantic representation in recent generative studies have not agreed on what such a structure should look like. One position is that of Jackendoff (1983, 1990), who equates the semantic structure is the conceptual structure that is available to various cognitive processes. One problem with this view is that, as Pinker (1989) has pointed out, this is a very strong form of the Whorfian Hypothesis, one which is not usually accepted. Conceptual categories and semantic categories are distinct, at least in a great many cases (Bowerman 1985,

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<sup>1</sup>The phenomena that involve the level of representation called Logical Form in Government and Binding Theory, such as binding and quantifier scope, are not treated at this level.

Matsumoto To appear a).<sup>2</sup>

Others consider the semantic structure to be one that contains only grammatically (syntactically) relevant semantic information. This is the position taken by Pinker (1989) and T. Mohanan (1994). For these linguists, grammatically relevant semantic information includes animacy, shape, causation type, temporal notions, etc. in addition to thematic roles (see Talmy 1988). Note that this is much richer than what is assumed by those who contend that thematic role information (which determines the argument structure) is the only semantic information needed for syntax (Burzio 1986, Levin & Rappaport 1986, Zubizarreta 1987, Belletti & Rizzi 1988)—a position which is clearly false (Pinker 1989, Matsumoto 1990a, Dowty 1991, T. Mohanan 1994).

This position of representing only grammatically relevant semantic information is a practical one in the sense of being relatively more feasible, and it certainly suffices for the purposes of Pinker and T. Mohanan, whose main interest in semantics in the works cited is the relationship between semantics and syntax. However, on this view many highly interesting semantic phenomena cannot be treated. One of the interesting questions in lexical semantics is how words like *yellow* and *brown* or words like *tread* and *stride* are different. The difference in many cases does not have any grammatical consequences, but it is part of linguistic knowledge and it is by no means a trivial issue.

In this book, I use the term semantic structure to mean a structure in which all linguistically (not just grammatically) relevant information about the meanings of expressions is represented. This is the position traditionally taken by many structural semanticists, and still maintained by Coleman & Kay (1981) and Wierzbicka (1985). In the version of this view which I will adopt, the meaning of a word is defined by all the conditions that must be satisfied in order for it to be used truthfully and appropriately (cf. Fillmore 1970). Those conditions might be a set of conditions that are individually necessary and collectively sufficient, or a set of so-called prototype

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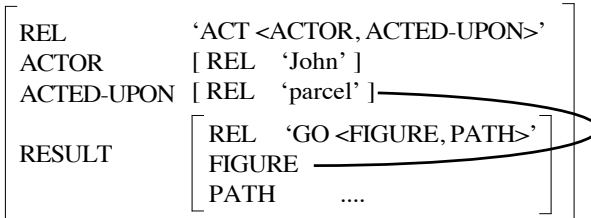
<sup>2</sup>Take as an example the notion of “one-dimensionality”. This semantic category is often encoded in the morphemes known as classifiers (Adams & Conklin 1973, Matsumoto 1991b). The Japanese classifier *-hon* is analyzed as conditioned by the one-dimensionality of an object, being used for such objects as pencils, strings, and trees. However, the semantic category of one-dimensionality is different from conceptual one-dimensionality. Unlike similar classifier categories in other languages, Japanese *-hon* takes as its referent not only such things as pencils and strings but also rolled one-dimensional objects like cassette tapes and relatively less saliently one-dimensional objects like pants and guitars. There is no evidence, however, to suggest that Japanese speakers differ from speakers of other languages with respect to the *conceptual* category of one-dimensionality.

conditions (e.g., Coleman & Kay 1981, Fillmore 1982a, Jackendoff 1983, Matsumoto 1991b, 1993), although I will not be concerned with the latter in this book.

This approach obviously has many difficulties. One problem is whether such a representation is realistically representable, given our current knowledge of the semantic categories in language. My approach to this question is a practical one: to content myself with the current state of the art and utilize what is known about the semantics of language to represent what is necessary for my purpose. I will draw much from Pinker (1989) and Jackendoff (1990), fully aware of the tentative nature of their proposals.

Another question is what kind of formal character such a structure might have. In this regard, one might note that recent studies have posited semantic structures of quite different formal character (compare, for example, Dowty 1979, Fenstad, Halvorsen, Langholm & Benthem 1985, Jackendoff 1990, Langacker 1987, Pinker 1989, Talmy 1976, 1988, Wierzbicka 1985). In this book, I will use attribute-value structures similar to the ones used to represent functional structures (cf. Fenstad, Halvorsen, Langholm & Benthem 1985). On this view, the meaning of sentence (1) can be represented as (2):

- (1) Jon wa kozutsumi o Tookyoo ni okutta.  
 John Top parcel Acc Tokyo Goal sent  
 'John sent a parcel to Tokyo.'

- (2) 

This semantic structure is a complex one in that it involves the embedding of one semantic structure in another. That is, this semantic structure is "biclausal".

In (2), the causation in the sentence is described as involving two events: John acts upon a parcel (in an unspecified manner), and the object that is acted upon undergoes a change of location to Tokyo (the result of John's action). The main semantic structure in (2) represents the causing event, and the embedded one, the caused event. The caused event is a RESULT adjunct of the upper 'ACT', like Pinker (1989) treats it (though he uses the term EFFECT). This formulation is consistent with Dowty's (1979)

claim that it is an event, rather than a causer, that causes an event. The term FIGURE that appears in the embedded structure is used to refer to an entity that moves or is located in some position (Talmy 1985). The FIGURE of the embedded structure is semantically associated with (i.e., represents the same semantic entity as) the ACTED-UPON argument of the upper REL(ation) ‘ACT’. This semantic association gives formal expression to an observation made by Jackendoff (1987, 1990): in causation the same entity bears the role of PATIENT (an entity that is acted upon) and THEME (an entity that is moved or changed) at the same time (cf. Alsina 1992).

There is much to elaborate in this semantic structure (e.g., how the Path of motion is represented; how the associations of the arguments in a complex semantic structure are constrained; how the meanings of ‘John’ and ‘parcel’ are represented; how selectional restrictions are stated; etc.). I will, however, defer any further discussion of semantic structure to the last three chapters.

The issue of what constitutes a primitive REL in semantic structure is beyond the scope of this book. Here main interest in semantic structure concerns its relation to argument structure. This includes those constraints that a complex semantic structure like that in (2) must satisfy in order to be mapped onto a simplex argument structure (the process of Lexicalization). I will discuss this issue in Chapters 6, 8, 9, and 10.

## 2.1.2 Argument Structure

### 2.1.2.1 *The Nature of Argument Structure*

Argument structure (a-structure) represents the valency structure of a predicate, or the structure of the set of arguments that a predicate can take. The nature of such a structure and its role in grammar has been extensively discussed recently in the framework of LFG (Bresnan & Kanerva 1989, 1992, Bresnan & Moshi 1990, Alsina & Mchombo 1991, Alsina 1992, 1993, etc.) as well as in Government and Binding Theory (e.g., Williams 1981b, Hale & Keyser 1986, 1987, Zubizarreta 1987, Rappaport & Levin 1988, Grimshaw & Mester 1988, Rosen 1989, Grimshaw 1990, Levin 1995, etc.) and in other theories (Kiparsky 1987) (see also Wilkins 1988, Stowell & Wehrli 1992). In a relatively recent version of LFG, both thematic role information and the prominence relationship among arguments are encoded in this structure (Bresnan & Moshi 1990, Alsina & Mchombo 1991).

The relationship between argument structure and functional structure has been a topic of much discussion in LFG. The discussion has focused on the association (sometimes called “linking”) between the thematic (semantic) roles of an argument and grammatical functions such as subject and object. In Lexical Mapping Theory, developed in the framework of LFG (Bresnan & Kanerva 1989, Bresnan & Moshi 1990, Alsina &

Mchombo 1991, Alsina 1992, 1993), each thematic (lexical) role in the argument structure of a predicate is underspecified as to the possible grammatical functions that it can be mapped onto, and the grammatical function is determined by mapping principles and well-formedness conditions.

The motivation for recognizing this level as something distinct from semantic structure should be carefully evaluated. In this regard, Jackendoff (1990) claims that linking takes place directly from his conceptual structure to phrase structure positions (for subjects, objects, etc.), and that an intermediate level like argument structure is not needed. This view contrasts with those of Grimshaw (1990), Hale & Keyser (1986, 1987), T. Mohanan (1994), Rappaport & Levin (1988), Levin & Rappaport Hovav (1992, 1995), Rosen (1989), Zubizarreta (1987), and others, who recognize argument structure as a level distinct from (lexical-)semantic structure, despite their differences about what exactly these levels should encode.

One difference between argument structure and semantic structure is the kind of form (expression) that they are associated with. No part of a morpheme can have its own independent argument structure, and therefore a single morpheme cannot be associated with a complex argument structure. Semantic structure, on the other hand, decomposes the meaning of a morpheme into a complex set of semantic structures, as in (2) above. Another difference is that semantic structure, unlike argument structure, encodes not only syntactically expressible but also syntactically inexpressible semantic participants in a described event. In this connection, one might note that this distinction between semantic participants (entities in semantic structure) and arguments of a predicate (entities in argument structure) is recognized even in Jackendoff's theory, in which the independent level of argument structure is not recognized. Jackendoff (1990:54) notes that the verbs *drink* and *butter* place restrictions on a moved entity (i.e., liquid and butter-like objects, respectively). In the case of *drink* the moved object appears as an argument of the verb, while this is not true of *butter*. Thus the moved object is represented in the semantic structures of both of these verbs, but it is represented in the argument structure only of *drink*, not *butter*. Jackendoff (1990:54) distinguishes the two by indexing syntactically expressible semantic participants (but not syntactically inexpressible ones) in his semantic structure. In this respect the notion of argument structure is implicitly present in Jackendoff's theory, too. Thus there does not seem to be any compelling reason to abandon this level altogether.

There are in fact divided views about what kind of information is to be contained in argument structure. For some, the arguments at this level carry

information concerning thematic roles (formerly known as deep structure case (Fillmore 1968)), such as agent, patient, experiencer, source, and goal (e.g., Alsina & Mchombo 1991, Belletti & Rizzi 1988, di Sciullo & Williams 1987, Williams 1981b). For others, this thematic information is not included: arguments are represented by variables over arguments (e.g., Grimshaw 1990, Levin & Rappaport 1986, Rappaport & Levin 1986, Zubizarreta 1987). One problem with thematic roles is that the set of roles that have been identified cannot be regarded as exhaustive (Jackendoff 1987, 1990). Moreover, as Jackendoff points out, such roles can be divided into two subcategories (actional roles such as agent and patient, and thematic roles such as theme, source, and goal), and an NP can bear two roles simultaneously, one from each set (e.g., the object of the verb *send* is patient with respect to causation and theme with respect to motion). Given this situation and certain other considerations (see below), some scholars have used thematic role labels only for convenience when referring to a particular argument (Grimshaw 1990, T. Mohanan 1994; cf. Bresnan & Moshi 1990:16, note 28). I will take this view in the present book.

The prominence relation among arguments is often called the ‘thematic hierarchy’ (e.g., Bresnan & Kanerva 1989, 1992, Foley & Van Valin 1984, Grimshaw 1990, Jackendoff 1972, Kiparsky 1987, cf. Givón 1976, 1984). A version of the thematic hierarchy (ordered from the highest to the lowest) is given in (3); this is the version assumed by Bresnan & Kanerva (1992).

- (3) agent > beneficiary > recipient/experiencer > instrumental  
       > theme/patient > locative

There is no unanimous agreement as to the details of this hierarchy (see Bresnan & Kanerva 1992 for discussion), although the need for recognizing some such hierarchy appears to be shared by many. This hierarchy has been claimed to play a role in the canonical association between thematic roles and grammatical functions such as subject and object (Bresnan & Kanerva 1989, Kiparsky 1987, cf. Fillmore 1968) and in constraining certain grammatical processes (Alsina & Mchombo 1991, Grimshaw & Mester 1988), as well as in determining word order (Uszkoreit 1987) and in idiom formation (Kiparsky 1987).

This hierarchy can also be viewed as reflecting the relative prominence determined by a set of more primitive semantic criteria (e.g., Dowty 1991, T. Mohanan 1994, Pinker 1989). T. Mohanan (1994), for example, argues that such semantic criteria include: causer is higher than causee, sentient is higher than non-sentient, undergoer of a change is higher than non-undergoer, etc.

The primary role of the prominence hierarchy is to determine the

logical subject (Kiparsky 1987, Joshi 1989). The logical subject is defined as the most prominent thematic argument of a predicate (Bresnan & Kanerva 1989, Kiparsky 1987, T. Mohanan 1994). The logical subject plays an important role in grammar, especially as regards anaphora and control. I will present some Japanese examples in 2.2.1.

Grimshaw (1990) argues that argument structure is hierarchically organized to reflect relative prominence and claims that this would make it unnecessary to refer to particular thematic role names (such as agent) in formulating grammatical rules, though others have argued that reference to a particular role name is necessary (Alsina & Mchombo 1991). One piece of evidence adduced in support of such a hierarchically organized argument structure comes from light verbs in Japanese, which I will discuss in Chapter 4. In Bresnan & Moshi 1990, thematic roles in a-structure are ordered, thereby representing the relative prominence of arguments.

In this book, the argument structure of a predicate is represented as an “attribute-value” structure like (4) below (cf. Butt, Isoda & Sells 1990). (In the first line, for example, “REL” is an attribute, and “send <AGENT, PATIENT, GOAL>” is its value.) Here, thematic role labels are used only for the sake of convenience (i.e., they could be replaced by ARG<sub>1</sub>, ARG<sub>2</sub>, etc.). The logical subject is positioned above all other arguments. Other aspects of the prominence hierarchy need not concern us in this book. Some further aspects of this structure in relation to functional structure are discussed in 2.1.3.2 below.

- (4) 

REL	‘send <AGENT, PATIENT, GOAL>’
AGENT	[ REL ‘John’ ]
PATIENT	[ REL ‘parcel’ ]
GOAL	[ REL ‘Tokyo’ ]

Many complex predicates, such as morphological causatives and desideratives, have a complex argument structure. The causative morpheme, for example, is in many studies assumed to have its own argument structure (with agent (causer), patient (typically causee), and caused event as its arguments (cf. Alsina 1992)) and embeds the argument structure of a base verb. However, it is not always the case that each morpheme in a complex predicate has its own argument structure. In some cases, as I will argue below, the argument structure of a morpheme in a certain complex predicate is not represented in the argument structure of the whole (Chapter 8) or is merged with the argument structure of another predicate to form a single argument structure (Chapters 8 and 9).

### 2.1.2.2 *The Predicate in A-structure*

At a-structure, the notion ‘word’ can be equated with REL. As a complex predicate can often embody several a-structures in a complex a-structure, it is important to be able to identify these component a-structures as such. In fact, a predicate that is one word in a-structure displays several properties that can be used to identify it within a complex predicate. First, a predicate (REL) in each a-structure has one and only one logical subject, and therefore the number of logical subjects in a sentence with a complex predicate should reveal how many RELs the sentence involves. Also, it is often assumed that a REL at this level can take only one argument having a given role (see Fillmore 1968, Grimshaw 1990, etc.); that is, a predicate cannot have more than one agent, patient, goal, etc. If this is a real condition on argument structure, it can be used as a test for predicatehood in a-structure. I will discuss this issue briefly in Chapter 9.

A predicate in a-structure can also be identified in terms of the mapping between semantic structure and argument structure. It is often argued that certain semantic conditions must be satisfied in order for a complex semantic structure (e.g., (2) above) to be “lexicalized” in one morphologically simplex word (i.e., a predicate that is clearly monoclausal in a-structure) (Shibatani 1976a, b, Pinker 1989, Wierzbicka 1980). For example, Shibatani (1976a, b) has noted that Japanese lexical causatives (such as *korosu* ‘kill’) cannot represent what he calls indirect causation, and that indirect causation can be expressed only by morphologically complex causative forms, which have a complex argument structure (as well as a complex functional structure in some analyses).

Conditions of this kind represent the semantic constraints on lexicalization and therefore help to identify a predicate in argument structure. Such semantic constraints, however, are not well-understood. In Chapter 8, 9, and 10 I will identify some of these constraints and use them as a test for the simplicity of argument structure. Such conditions include semantic constraints on the arguments of one predicate (Chapters 8 and 9), constraints on semantic associations in the semantic structure of a predicate (Chapter 8), and temporal and other constraints on the semantic structure of one predicate (Chapter 10).

## 2.1.3 **Functional Structure**

### 2.1.3.1 *The Nature of Functional Structure*

Functional structure (f-structure) is the level of representation which provides information about the grammatical functions of expressions in a sentence. Functions currently recognized in LFG are SUBJ, OBJ, OBJ <sub>$\theta$</sub> , OBL <sub>$\theta$</sub> , COMP (closed complement), XCOMP (open complement), ADJ (closed adjunct), and XADJ (open adjunct). “ $\theta$ ” is a cover symbol for

concrete role names, such as go(al) and so(urce). “GF” is often used as a cover symbol for any grammatical function. In LFG, grammatical functions are given distinguished roles; LFG differs in this respect from Government & Binding Theory, in which grammatical functions are defined in terms of phrase structure positions. LFG uses the attribute-value structure to represent this structure, as in (5), which is the functional structure of sentence (1).

$$(5) \quad \left[ \begin{array}{ll} \text{PRED} & \text{'send <SUBJ, OBJ, OBLgo>'} \\ \text{SUBJ} & [ \text{PRED 'John' } ] \\ \text{OBJ} & [ \text{PRED 'parcel' } ] \\ \text{OBLgo} & [ \text{PRED 'Tokyo' } ] \end{array} \right]$$

(5) shows that *Jon*, *kozutsumi*, and *Tookyoo ni* in (1) are the subject, the object, and the oblique argument (representing goal) of the predicate *okutta* ‘sent’, respectively, which governs these arguments.

There are two well-formedness conditions placed on f-structure: the Completeness Condition and Coherence Condition, which are LFG counterparts of Theta Criterion in Government & Binding Theory. The Completeness Condition states (in a somewhat simplified version) that an f-structure is complete if and only if it contains all the governable grammatical functions that its predicate governs. The Coherence Condition states that each f-structure is coherent if and only if all the governable grammatical functions that it contains are governed by the predicate of the f-structure. Completeness Condition makes an f-structure lacking a necessary function ill-formed, and Coherence Condition makes an f-structure with an unlicensed function ill-formed. For example, (6) is ill-formed because the XCOMP is not governed by its PRED (in violation of the Coherence Condition).

$$(6) \quad \left[ \begin{array}{ll} \text{PRED} & \text{'send <SUBJ, OBJ, OBLgo>'} \\ \text{SUBJ} & \text{....} \\ \text{OBJ} & \text{....} \\ \text{OBLgo} & \text{....} \\ \text{XCOMP} & \text{....} \end{array} \right]$$

In this way subcategorization is checked in terms of functions (rather than categories such as NP and PP) at f-structure.

Functional structure is the level of representation at which many grammatical rules are stated, including control and binding. Here I will briefly discuss the issue of control. In LFG, the issue of “obligatory control” has been treated in terms of “functional control” (Bresnan 1982b, Sells

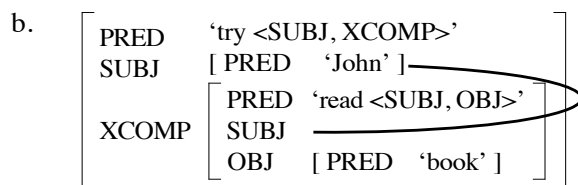
1985; cf. Zec 1987). Functional control is the relation between the missing subject in a complement or an adjunct clause and its antecedent (controller). A complement whose subject must be controlled by an argument of an upper clause is called an XCOMP, and an adjunct clause whose subject must be controlled is called an XADJ. Verbs that select for an XCOMP include both raising verbs and control (equi) verbs. The control verb *try* and the raising verb *seem*, for example, have the following lexical entries.

- (7) a. *try*     <SUBJ, XCOMP>  
       b. *seem*   <XCOMP> SUBJ

The difference between the two is that the subject of *try* is thematic (linked to Agent), while that of *seem* is not (there is no thematic restriction on it). Thematic arguments are placed inside the angular brackets, and non-thematic arguments, outside them, as in (7a) and (7b). The particular control relationship that each verb requires is stated in a control equation such as (8), which indicates that the f-structure of the SUBJ of the XCOMP of *try* is equated with the f-structure of its subject. The functional structure of sentence (9a) is given in (9b).

- (8)     *try*    ( $\uparrow$ XCOMP SUBJ) = ( $\uparrow$ SUBJ)

- (9)    a. John tries to read a book.



### 2.1.3.2 Mapping between A-structure and F-structure

The notion ‘grammatical function’ is an important one, especially in relation to grammatical function changing (alternating) processes such as passivization and causativization. When LFG was first formulated, function changing processes were regarded as lexical rules, which were operations on the grammatical functions represented in the lexical form of a predicate. Passivization, for example, converted OBJ to SUBJ and SUBJ to BY OBJ (Bresnan 1982a). Bresnan (1982a) argued that passivization (and in fact all other function changing processes) is a lexical process (a word formation process), a position consistent with a strong form of the lexicalist hypothesis (cf. Chomsky 1970).

In Lexical Mapping Theory, formulated within LFG, a new proposal

has been made (Bresnan & Kanerva 1989, Bresnan & Moshi 1990, Bresnan & Zaenen 1990, Alsina 1992; see also L. Levin 1986). In this theory, grammatical functions are not primitives, but are composites of features such as [r] (thematically restricted) and [o] (object-like), which can have either + or - values. SUBJ is composed of [-r] and [-o] (i.e., its thematic roles are not restricted to any particular role, and it is not object-like), OBJ of [-r] and [+o], OBL<sub>θ</sub> of [+r] and [-o], and OBJ<sub>θ</sub> (secondary object) of [+r] and [+o]. Thematic roles in a-structure have a certain (incomplete) specification in terms of these features that limits the grammatical functions they can be mapped onto. For example, according to Bresnan and Kanerva (1989) Patient is intrinsically [-r], which means that it can only be mapped onto thematically unrestricted grammatical functions (i.e., those grammatical functions that are capable of being associated with a variety of thematic roles), namely, SUBJ and OBJ. In Alsina (1992) and Bresnan and Zaenen (1990) certain secondary Patient-like roles are alternatively classified as [+o]. (This option is not available for applied Recipient roles.) All other roles are classified as [-o].

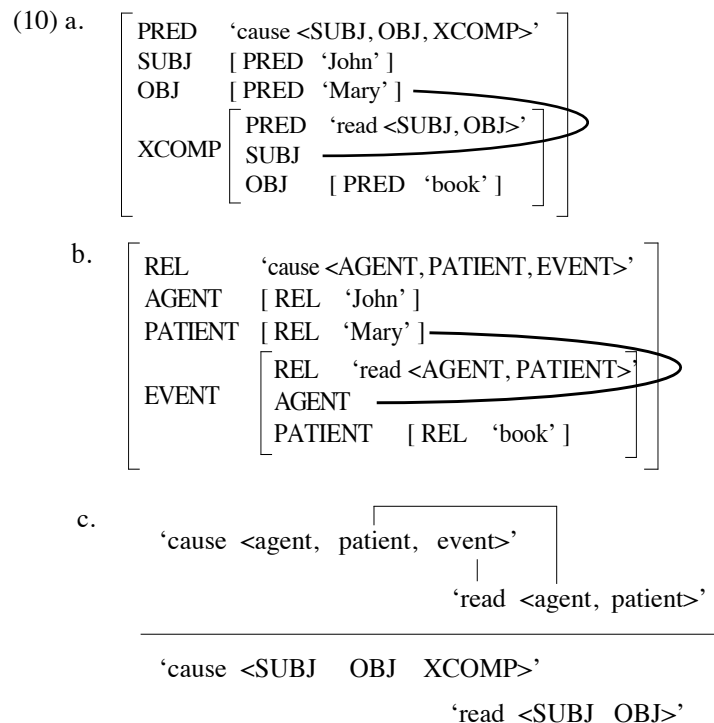
The mapping principles map these roles onto grammatical functions. The Subject Mapping Principle maps the highest role with [-o] or, if there is no such role, a role with [-r], onto SUBJ (i.e., classifies this role as [-r] and [-o]). The Mapping Principle for Non-subject functions (Default Principle) maps all other roles to the most marked compatible function (i.e., classifies them as [+o] and [+r] when compatible). The result is checked against two well-formedness conditions: the Subject Condition (every lexical form must have SUBJ) and the Function-argument Biuniqueness Condition (the mapping between roles and functions must be one-to-one). In addition, the classification must be monotone increasing, prohibiting conflicting classifications.

In this theory, Passivization suppresses the highest thematic role in an a-structure. Thus, if Agent (which has an intrinsic [-o] specification) is suppressed, Patient (which has a [-r] specification) will have the opportunity to be mapped onto SUBJ. The Lexical Mapping of the verb *eat* and its passive form is illustrated in (9).

(9)	<i>eat</i> <Agent, Patient>	<i>eaten</i> <Agent, Patient>
Intrinsic	[-o] [-r]	ϕ [-r]
Mapping Principles	[-r] [+o]	[-o]
	<hr/> SUBJ OBJ	<hr/> SUBJ

The details of this theory are not directly relevant to the main issues of this book. One thing that *is* relevant is the domain of a-structure that

corresponds to a single functional structure. This issue is especially important in the discussion of complex predicates like morphological causatives. Morphological causatives and some other complex predicates have been analyzed as having a complex biclausal argument structure. Such a complex argument structure might be mapped onto a complex functional structure. For example, the argument structure of (10b) (for ‘John causes Mary to read the book’) can be mapped onto the biclausal functional structure (10a). In this case, Lexical Mapping applies to each of the two argument structures in (10b), linking AGENT to SUBJ and PATIENT to OBJ in each separate clause. (10c) schematically describes the mapping involved.



If Japanese morphological causatives are functionally biclausal, as Ishikawa (1985) has claimed, then the correspondence between the argument structure and the functional structure of these predicates should presumably be characterized in this way.

There are also cases in which a complex argument structure is mapped onto a simplex functional structure. This pattern appears to be true of

Chichewa morphological causatives (Alsina 1992, 1993) and Malayalam morphological causatives (K.P. Mohanan 1983, T. Mohanan 1988). It has been observed that the causee argument in Chichewa and Malayalam causatives does not exhibit subject properties, and therefore these causatives are to be regarded as functionally monoclausal. In this case, a complex a-structure is mapped onto a monoclausal f-structure. The facts of causatives in these languages are rather complex, given that different types of causatives have different argument structures (see T. Mohanan 1988, Alsina & Joshi 1991, Alsina 1992, 1993). One type of mapping Alsina (1992, 1993) recognizes is the one between the f-structure (11a) and a-structure (11b); here (11b) is very similar to (10b), but (11a) is monoclausal while (10a) is biclausal. (11c) schematically describes the mapping involved.

- (11) a. 
$$\left[ \begin{array}{ll} \text{PRED} & \text{'cause-read <SUBJ, OBJ, OBJpt>} \\ \text{SUBJ} & [ \text{PRED 'John'} ] \\ \text{OBJ} & [ \text{PRED 'Mary'} ] \\ \text{OBJpt} & [ \text{PRED 'book'} ] \end{array} \right]$$
- b. 
$$\left[ \begin{array}{ll} \text{REL} & \text{'cause <AGENT, PATIENT, SUBEVENT>} \\ \text{AGENT} & [ \text{REL 'John'} ] \\ \text{PATIENT} & [ \text{REL 'Mary'} ] \\ \text{SUBEVENT} & \left[ \begin{array}{ll} \text{REL} & \text{'read <AGENT, PATIENT>} \\ \text{AGENT} & \text{---} \\ \text{PATIENT} & [ \text{REL 'book'} ] \end{array} \right] \end{array} \right]$$
- c. 
$$\begin{array}{c} \left[ \begin{array}{l} \text{'cause <agent, patient, subevent>} \\ \text{'read <agent, patient>} \end{array} \right] \\ \hline \text{'cause-read <SUBJ OBJ OBJpt>} \end{array}$$

The mechanism for mapping a complex argument structure onto a simplex functional structure (cf. (11)) has been discussed by Butt, Isoda & Sells (1990). In their view, this kind of mapping is possible when the internal structure of the embedded EVENT argument is transparent for the sake of linking (i.e., the internal structure of EVENT is “visible” or “penetrable” from outside). They term such an EVENT argument *EVENT<sub>T</sub>*. A non-transparent EVENT argument, which do not allow such mapping (cf. (10)), is simply called *EVENT*. For reasons to be mentioned below, I will refer to their *EVENT<sub>T</sub>* as SUBEVENT.

In the mapping from (11b) onto (11a), all arguments in the upper clause and the SUBEVENT clause in (11b) are mapped onto entities in a simplex functional structure, except for an argument like lower Agent, which is “fused” with the upper Patient argument (Alsina 1992, 1993). The three arguments AGENT, upper PATIENT and lower PATIENT thus undergo Lexical Mapping together, establishing the correspondence between the argument structure (11b) and the functional structure (11a).

Passivization affects the mapping possibilities of the arguments of complex predicates in the following way. The operation of passivization on the complex argument structure of the causative (11b) would make the Patient argument of the lower clause available for mapping onto the subject of the passive. This would not be possible if the causative morpheme selects for an EVENT (cf. (10b)), since in this case only the arguments of the causative morpheme itself are given a chance to become subject.

In the proposal of Butt, Isoda & Sells, the distinction between EVENT and EVENT<sub>T</sub> is purely formal, motivated solely for the purpose of mapping onto f-structure. In this book I will suggest that the distinction between EVENT and SUBEVENT is semantically motivated, and that the difference in their mapping possibilities is a reflection of such semantic difference. An event represented by SUBEVENT is semantically interwoven with the situation described by the upper, embedding argument structure, so that SUBEVENT and its upper structure together represent one complex event of some sort. EVENT, on the other hand, represents an event which is semantically independent of the situation described by the upper structure. I will clarify what this means in the course of this book. One reflection of this crucial relation between the SUBEVENT and its upper argument structure is the following necessary (but not sufficient) condition on SUBEVENT.

- (12) **Fused Argument Condition:** One argument of SUBEVENT must be fused with (identical with) an argument of the embedding argument structure subcategorizing for that SUBEVENT.

### 2.1.3.3 *The Predicate in F-structure*

At f-structure, the notion ‘word’ can be equated with PRED. A predicate that constitutes one word at this level can be defined as the unit that governs a set of grammatical functions such as SUBJ and OBJ. It can be identified in several ways. Since a predicate must have one and only one SUBJ, the existence of more than one NP that functions as a grammatical subject signifies that the sentence involves a complex functional structure. SUBJ can be identified by grammatical phenomena that are sensitive to subjecthood. I will review these phenomena in Japanese below.

Another way to identify a predicate in f-structure in the analysis of

complex predicates is by looking at how Passivization of a complex predicate affects the mapping possibilities of the arguments. As noted in the previous section, the suppression of the logical subject of an upper clause can affect the mapping possibilities of the arguments of a lower clause if and only if that lower clause is a SUBEVENT (not EVENT) argument of the upper predicate, since the arguments in the upper and lower clauses undergo lexical mapping together only in this case, mapped onto entities in the same f-structure (as in (11)). Thus, if Passivization can make the lower patient into the passive subject, then, the predicate has a simplex f-structure with one PRED. If it cannot, the predicate has a complex f-structure unless there is any other reason to prevent the subjectivization of the patient.

There are also other tests for monoclausality in f-structure: adjunct interpretation and verbal anaphora. I will discuss these tests in 2.2.2.

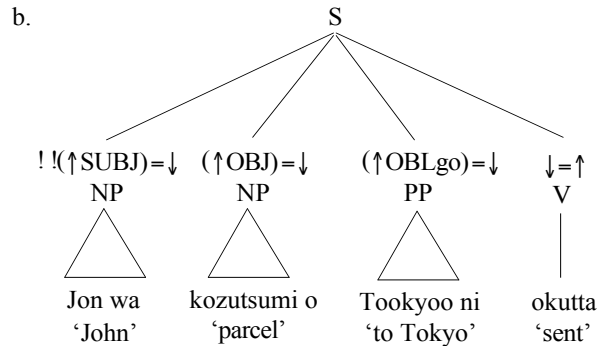
## 2.1.4 Constituent Structure

### 2.1.4.1 *The Nature of Constituent Structure*

Constituent structure (c-structure) represents a surface phrase structure in the form of a familiar phrase structure tree, a well-formed bracketing that indicates the surface arrangement of words and phrases in a sentence. The constituent structure also carries grammatical category information, such as the NP-hood of a phrase, etc. This structure corresponds approximately to the level PF of Government & Binding Theory. In LFG, c-structure is the only structure in which the linear precedence relationship between expressions in a sentence is stated. It does not contain any empty categories.

A preliminary version of the phrase-structure rule for an S in Japanese is given in (13a). (Here, “XP” is used as a cover symbol for any phrasal category.) (13b) is the constituent structure of sentence (1) according to this rule.

$$(13) \quad \text{a. } S \longrightarrow \begin{array}{cc} \text{XP} & \text{V} \\ (\uparrow\text{GF})=\downarrow & \uparrow=\downarrow \end{array}$$



As in (13a) and (13b), c-structure nodes are annotated with functional information (functional annotation), indicating their status in the f-structure of a sentence. (This annotation is usually placed below each category label in a phrase-structure, and above it in a c-structure.) The up-arrow refers to the functional structure of the mother node, and the down-arrow refers to the functional structure of the node itself. Thus, “ $(\uparrow\text{SUBJ})=\downarrow$ ” on the subject NP, which is read as “up’s SUBJ is down”, means “my mother’s f-structure’s SUBJ is equated with my f-structure” (i.e., the NP is the subject of the f-structure of the S). “ $\uparrow=\downarrow$ ” on V means “my mother’s f-structure is equated with my f-structure” (i.e., the V is the head of the f-structure of the S).

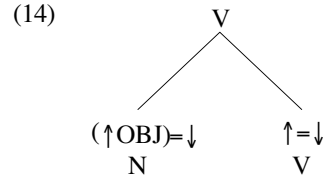
I will assume that Japanese does not have a VP (i.e., Japanese is a non-configurational language), as in (13). This assumption is of course a controversial one. I will not, however, engage in any discussion of the (non)configurationality of Japanese phrase structure in this book, as the issue is independent of my major claims.

#### 2.1.4.2 Surface Realizations of Grammatical Functions

The surface expressions of grammatical functions vary considerably among languages. The correspondence between c-structure and f-structure must be formulated so that it is flexible enough to be able to describe such surface variations in different languages, yet constrained enough to rule out impossible correspondences.

One instance of possible flexibility in the surface realization of grammatical functions is found in Hindi N-V compounds (T. Mohanan 1994, 1995). Mohanan has found that the verb in certain N-V compounds can agree in gender with the noun (nominative in form) with which it forms a compound, when they take an ergative subject. Given that Hindi verbs agree with their nominative OBJ when their SUBJ is not nominative, the incorporated noun can be analyzed as bearing the function of OBJ, unlike

usual cases in which such functions realize as a phrase (e.g., NP). That is, a *sublexical* unit can bear a grammatical function like OBJ, as in (14). (See also Bresnan & Mchombo 1987 for the case of Chichewa incorporated pronouns.)



There is no reason to limit this kind of case to an incorporated OBJ. In fact, Ishikawa (1985) has proposed that Japanese morphological causative verbs are morphologically expanded into an XCOMP V (a V bearing the function of XCOMP) and the head V.

It is also possible for one PRED in f-structure to correspond to two words in c-structure. Separable complex verbs in German and Dutch are one example. Another is the Urdu permissive construction, reported by Butt (1995) and exemplified in (15).

- (15) Anjum-ne    Saddam-ko    xat                    lik<sup>h</sup>-ne    di-yaa  
       Anjum.F-Erg   Saddam.F-Dat   letter.M-Nom   write-Inf   give-Perf.M.Sg  
       ‘Anjum let Saddam write a note.’

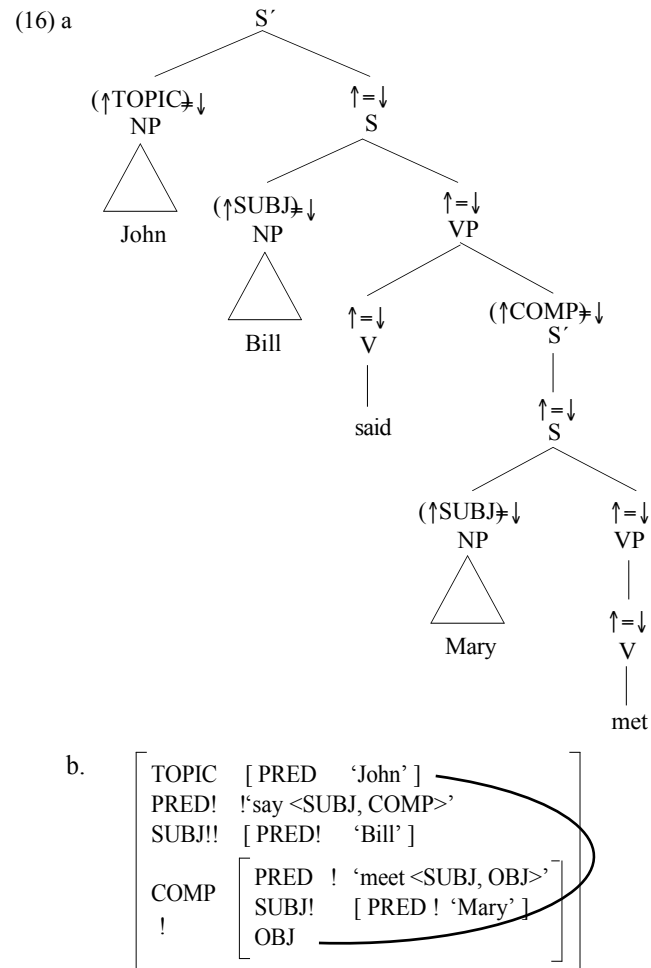
Butt has found evidence suggesting that this construction is functionally monoclausal, even though it involves two morphological verbs. One piece of evidence concerns agreement. In Urdu, a verb agrees in gender and number with the nominative NP in the clause that is highest in terms of the grammatical hierarchy (i.e., SUBJ > OBJ > ... ) (cf. Hindi described above). In (15), the permissive verb *diyaa* ‘gave’ agrees in gender with the apparent object of the complement verb, namely, *xat* ‘letter’. She uses this fact as well as some evidence from anaphora and control to argue for the functional monoclausality of this sentence. The upshot is that the two verbs constitute one PRED in f-structure and that *diyaa* ‘gave’ selects for a SUBEVENT (her EVENT<sub>T</sub>) whose REL is *lik<sup>h</sup>ne* ‘write’. Butt has also found evidence suggesting that the object *xat* and the verb *lik<sup>h</sup>ne* can form a constituent, still maintaining functional monoclausality. (See Dalrymple 1995 for a formal treatment of such phenomena.)

#### 2.4.1.3 Functional Uncertainty

One constraint placed on the correspondence between f-structure and c-structure is the Functional Locality Condition on functional equations (in

functional annotations), which prohibits more than two attribute names from appearing in an equation, ruling out such equations as  $(\uparrow\text{COMP XCOMP OBLgo})=(\uparrow\text{SUBJ})$  (Bresnan 1992b:288). However, certain long-distance phenomena in language (such as *wh*-movement and topicalization) have motivated a treatment of the exceptions to this condition by means of the device of Functional Uncertainty (Kaplan & Zaenen 1989, Dalrymple 1993, Zaenen & Kaplan 1995).

Consider topicalization in English (Kaplan & Zaenen 1989) on the basis of the constituent structure in (16a) and the functional structure (16b) to which (16a) is supposed to correspond.



In (16a), the sentence-initial NP has the function of TOPIC. One important issue here is how to link the TOPIC to another appropriate function. In this particular sentence it must be linked to the OBJ of the non-controlled clausal complement (COMP), as shown in (16b). The formulation of such linkage must be general enough to allow TOPIC to be linked to any function (multiply) embedded in controlled and/or non-controlled complement clauses as well as in the main clause.

This can be done by introducing the following equation on a TOPIC phrase, which involves Functional Uncertainty. (This formulation is somewhat different from Kaplan & Zaenen's (1989) original formulation.)

$$(17) (\uparrow \text{TOPIC}) = (\uparrow \{ \text{COMP/XCOMP} \}^* \text{GF})$$

The Kleene closure operator  $*$  in “ $\{ \text{COMP/XCOMP} \}^* \text{GF}$ ” means any number of occurrences including none. Thus, “ $\{ \text{COMP/XCOMP} \}^* \text{GF}$ ” in (17) can be any of OBJ, COMP SUBJ, XCOMP OBJ, XCOMP COMP SUBJ, etc. This rule potentially links TOPIC to any grammatical function with an arbitrary repetition (including none) of COMP and/or XCOMP, and in this sense the linked function is left “uncertain” (hence the name “Functional Uncertainty”). The actual function it can be linked to is determined due to well-formedness conditions on functional structures, which include the Completeness and Coherence Conditions (Bresnan 1982a, Kaplan & Bresnan 1982). In (16a) above, COMP OBJ is missing, and therefore the subcategorization requirements of the embedded predicate (i.e., the Completeness and Coherence Conditions) are satisfied in functional structure only when TOPIC is identified with COMP OBJ. Note that this mechanism allows topicalization to be formulated without any traces in c-structure.

The mechanism of Functional Uncertainty has been also used in formulating rules for other phenomena quite different from topicalization that involve some sort of uncertainty. They include anaphora (Dalrymple 1993) and the cross-serial dependency found in Dutch infinitival constructions (Zaenen & Kaplan 1995).

#### 2.1.4.4 *The Word at C-structure*

The word at c-structure is the entity which occupies terminal nodes in syntactic constituency or  $X^0$  in the X-bar theory. The word at this level is characterized by its surface morphological integrity, i.e., its ability to occur alone and the inability of its parts to be separated from the rest (cf. Bresnan & Mchombo 1995; see also Takahashi 1972:139). The c-structure word is also the unit above which morphological word formation rules do not apply. I will examine some specific tests for c-structure wordhood in Japanese in 2.2.3 below.

## 2.2 Some Grammatical Properties of Japanese and Tests for the Word/Clause

In this section, I will discuss some grammatical phenomena in Japanese that are relevant to the identification of the word (predicate) at each level of representation. A related issue here is the complexity of c-, f-, and a-structure. Since a single clause at a- and f-structure can have only one REL or PRED, the number of clauses in a given sentence indicates the number of predicates that that sentence has. This is not true of c-structure. A monoclausal c-structure might have two morphological verbs that together function as one predicate, without forming a biclausal constituent structure, as will be discussed below.

### 2.2.1 Grammatical Subject and Logical Subject

As pointed out in 2.1.2.2. and 2.1.3.3, determining the grammatical subject and the logical subject is one way to determine the complexity of functional structure and argument structure and to sort out the number of predicates involved in the sentence at these levels.

The grammatical subject plays an important role in the grammar of Japanese (e.g., Shibatani 1978, Perlmutter 1983). Aspects of grammar that are sensitive to subjecthood include reflexivization, honorification, and control.

#### 2.2.1.1 Reflexive Jibun

One phenomenon that has been claimed to involve the notion of subject is the binding of the reflexive *jibun* (e.g., Kuroda 1965). The antecedent of this reflexive, it has been argued, must be a grammatical subject (subjecthood condition), as suggested by examples like the following.

- (18) Jon<sub>i</sub> wa Mari<sub>j</sub> to jibun<sub>i,\*j</sub> no ie de hanashi o shita  
 John Top Mary with self Gen house Loc talk Acc do-Past  
 ‘John had a talk with Mary in his/\*her house.’

This statement, however, must be qualified. There is substantial evidence to suggest that certain non-subject NPs that are prominent in respects other than grammatical function can serve as antecedents of *jibun*. One such mode of prominence is discourse prominence. It has been pointed out that *jibun* can have as its antecedent what has been called the *logophoric individual*, or the individual whose point of view, thoughts or speech is expressed in the discourse (see Kuno 1978a, Kameyama 1984, Iida & Sells 1988, Matsumoto 1988a). An example is given in (19).

- (19) Jibun<sub>i</sub> ga shinu-kamoshirenai toyuu hookoku wa  
self Nom die-may Comp report Top  
Marii<sub>i</sub> no kokoro o yusabutta.  
Mary Gen heart Acc swayed  
‘The report that she may die disturbed Mary heart.’

Another mode prominence that can enhance an NP’s suitability for *jibun* binding is thematic prominence. Some scholars have pointed out that a non-subject agent can sometimes be an antecedent of *jibun*. The following example (20) is taken from Kitagawa (1980). This sentence involves binding of *jibun* by a passive agent.

- (20) Sono messeeji wa sensei<sub>i</sub> ni yotte go-jibun<sub>i</sub> no  
the message Top teacher by H-self Gen  
shisetsu-hoosookyoku kara hasshin s-are-ta.  
private-broadcasting-station from broadcast do-Pass-Past  
‘The message was broadcast by the teacher from his private broadcasting station.’

As Kuno (1983) notes, several factors appear to make this binding possible. One is the impossibility of subject binding (because of the inanimacy of the subject NP); another is the use of the honorific form of the reflexive, which makes the agent a natural choice for its antecedent. Momoi (1985) gives further examples of *jibun* bound by a passive agent, though his judgments do not seem to be shared by many speakers.<sup>3</sup>

<sup>3</sup>The following sentence, taken again from Kitagawa (1980), also involves binding of *jibun* by a non-subject.

- (i) Hayaku Naomi o jibun noie ni kaeshite shimai-nasai.  
quickly Naomi Acc self Genhouse Goal return finish-Imp  
‘Let Naomi go quickly to her/\*your home.’

In Kitagawa’s judgment this *jibun* cannot have its subject (the hearer) as its antecedent, while it is possible to have the object of the verb *kaesu* as its antecedent. In my analysis of lexical causatives in Chapter 6, this object NP is neither a subject in f-structure nor an agent in a-structure, but an actor in s-structure (i.e., the most prominent argument of the caused event in the semantic structure). It appears that this semantic prominence is one factor enhancing the possibility of *jibun* binding. A second contributing factor is the lexical semantics of the verb *kaesu*. The meaning of *kaesu* requires the goal to be the place where the moving person ‘belongs’; hence the reading of *jibun* = Naomi is pragmatically natural here and the reading of *jibun* = addressee is unnatural. The pragmatic unnaturalness of the latter reading can be removed under certain circumstances; thus this reading is available to me if Naomi is a slave and the subject’s (hearer’s) house is where she is supposed to belong.

There are other cases where a subject cannot be a natural antecedent of *jibun*. As is well known, the antecedent of *jibun* must be a human NP. In addition, a sentence that represents an objective judgment or a judgment (point of view) of someone other than the subject NP does not naturally allow its subject to be the antecedent of *jibun* (cf. logophoric binding above). The following is one example.

- (21) ?? Marii wa jibun no imooto yori kawaii.  
 Mary Top self Gen sister than pretty  
 ‘Mary is prettier than her sister.’ (intended)

In spite of these qualifications, it must be noted that these exceptions to the subjecthood condition for *jibun* binding are not irregular. One can still use *jibun* binding to identify a subject if one considers carefully how other factors may interact in particular cases of *jibun* binding. Thus *jibun* binding does provide a test for subjecthood in Japanese, though one to be used with caution.

#### 2.2.1.2 Subject Honorification

Another phenomenon that involves reference to the subject is subject honorification (e.g., Harada 1976, Shibatani 1978). Certain honorific forms of verbs, such as those suffixed by *-rare*, and the *o-V ni naru*, *o-V da* and *o-V kudasaru* complexes,<sup>4</sup> are used to honor the referent of the subject NP. Examples are given in (22). (22a) is an example of *o-V ni naru* honorification,<sup>5</sup> and (22b), of *-rare* honorification.

- (22) a. {Sensei wa / \*Taro wa} hon o o-yomi ni nari-mashi-ta.  
 teacher Top / Taro Top book Acc H-read Cop become-Pol-Past  
 ‘The teacher (\*Taro) read a book.’

<sup>4</sup>Note that the verb *kudasaru* ‘give’ in the *o-V kudasaru* complex is a control predicate that subcategorizes for a person as subject. This predicate is a counterexample to Sells & Iida’s (1991) claim that only raising predicates can follow *o-V* to mark subject honorification.

<sup>5</sup>The verb *naru* in this construction is clearly different from the cognate verb *naru* ‘become’. For example, the verb *naru* ‘become’ entails a change of state in its subject NP, and therefore the *-te iru* form of this verb is interpreted as a resultative (see Kindaichi 1950, Teramura 1984a). However, the *-te iru* form of the verb *naru* in this honorific construction is different: it inherits the aspectual nature of whatever verb is inserted. Thus, *o-yomi ni natte iru* ‘is reading’, in which the verb *yomu* ‘read’ is inserted, is interpreted as progressive, because of the aspectual nature of *yomu* ‘read’. For convenience, however, I will gloss *naru* as ‘become’ in this construction.

- b. {Sensei wa / \*Taroo wa }    hon o        yom-are-mashi-ta.  
      teacher Top / Taro Top     book Acc   read-Hon-Pol-Past  
      ‘The teacher (\*Taro) read a book.’

Since the subject honorification marking is used, the person to whom the speaker is expressing his/her respect must be the subject of these two sentences. Because reference by a personal name like *Taroo* is limited to cases where the referent is not higher than the speaker in terms of age or social rank (Suzuki 1973), (22a) and (22b) are unacceptable with *Taroo* as its subject NP.<sup>6</sup>

Subject honorification appears to be the most reliable test for subjecthood in Japanese. Non-subject NPs, even those that are prominent in other respects, cannot be the target of subject honorification. The logical subject, for example, cannot be the target of subject honorification unless it is a grammatical subject at the same time. Thus, (23a) cannot be used to honor the logical subject *sensei* ‘teacher’; and, given that the subject NP in this sentence is not described as the person who is respected (with the use of a personal name), this sentence is judged unacceptable. The reason (23a) is unacceptable is not morphological, given that (23b) is acceptable.

- (23) a. \*Jon wa    sensei ni    o-tasuke-rare ni    natta.  
        John Top   teacher by H-help-Pass Cop   become-Past  
        ‘John was saved by the teacher.’ (intended)
- b. Sensei wa    Jon ni    o-tasuke-rare ni    natta.  
      teacher Top   John by   H-help-Pass Cop   become-Past  
      ‘The teacher was saved by John.’

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<sup>6</sup>Examples of the *o-V da* honorific construction, which is much less discussed in the literature, are (i) and (ii). (*no* in (ii) is a prenominal form of the copula *da*).

- (i) Sensei wa    Jon o    o-machi desu.  
      teacher Top   John Acc H-wait Cop  
      ‘The teacher is waiting for John.’
- (ii) {sensei / sono otoko} o o-machi no {kata/\*otoko}.  
      teacher / the   man Acc H-wait Cop person/man  
      ‘a {(honorable) person/\*man} who is waiting for {the teacher/John}’

Sells & Iida (1991) assume that the *o-V no* form (cf. ii) is neutral between subject/object honorification. However, note that (ii) is acceptable only when the head NP (which is the subject of the honorific complex) is an honorific noun *kata*. In fact, if a non-honorific noun like *otoko* ‘man’ were used as a head noun, this honorific verb complex could not be used. In contrast, such non-honorific noun can be used as an object of the verb complex. This means that the *o-V no* honorific complex is for subject honorification only.

One might note, however, that honorific markers place semantic restrictions on the subject and therefore not all subjects can be the target of subject honorification. For one thing, non-human beings cannot be the target of honorification in all honorific forms. In addition, Matsumoto (1990b) has observed that non-volitional human subjects cannot be the target of *-rare* subject honorification. For example, consider the sentences in (24).

- (24) a. Sensei ga kuruma no kage ni kakure-ta.  
 teacher Nom car Gen back Loc hide-Past  
 ‘The teacher {hid himself / got hidden} behind the car.’
- b. Sensei ga kuruma no kage ni kakure-rare-ta.  
 teacher Nom car Gen back Loc hide-Hon-Past  
 ‘The teacher {hid himself / ??got hidden} behind the car.’

Sentence (24a) has two readings: that the teacher hid himself behind a car, and that the teacher got hidden by a car. That is, the verb *kakure* ‘hide’ can be used both for a volitional act of hiding oneself or a non-volitional incident of getting hidden by something else. However, when the subject honorific marker *-rare* is added to this verb, as in (24b), only the volitional reading is fully acceptable. The same constraint also explains Dubinsky’s (1985) observation that the verb *wakaru* ‘understand’ cannot occur in the honorific *-rare* form.

This constraint does not seem to be relevant in the case of the *o-V ni naru* honorific form (Dubinsky 1985). To avoid the effects of volitionality, accordingly, it is primarily the *o-V ni naru* honorific form that I will use to test the subjecthood of an argument in this book.

### 2.2.1.3 Control

The third grammatical phenomenon that involves the notion of subject in Japanese is control. The unexpressed subject of certain adverbial clauses can be controlled only by a subject of an upper clause. Such adverbial clauses include the *koto naku* clause (Matsumoto 1990b), which is semantically similar to English *without* plus gerund. Consider (25a) and (25b).

- (25) a. Joni ga sono hon o [PRO<sub>i</sub> ip-peeji mo  
 John Nom the book Acc one-page even  
 yomu koto naku] sute-ta.  
 read thing Neg throw.away-Past  
 ‘John threw the book away without reading one page.’

- b. \*Sono hon ga [PRO<sub>i</sub> ip-peeji mo yomu koto naku]  
the book Nom one-page even read thing Neg  
Jon<sub>i</sub> niyotte sute-rare-ta.  
John by throw.away-Pass-Past  
‘The book was thrown away by John without reading one page.’  
(intended)

The subject of the embedded clause in (25a) is controlled by the grammatical subject of the upper clause. (25b) is unacceptable because *Jon* is not a grammatical subject.

The subject of some adverbial clauses can be controlled by either a logical subject or a grammatical subject. This is true of purpose clauses, as is the case with English (Baker 1988, Jaeggli 1986, Roeper 1987; cf. Lasnik 1988, Williams 1985). In the following sentence, the subject of an embedded clause is controlled by the unexpressed agent of the passive.

- (26) [PRO Kuuki o irekaeru tame] mado ga ake-rare-ta.  
air Acc exchange Pur window Nom open-Pass-Past  
‘The window was opened in order to change air.’

It is also true of *-nagara* ‘while’ clauses (Shibatani 1988; cf. Perlmutter 1983, Dubinsky 1985:53). In this case control by a logical (but not grammatical) subject is limited to cases where the *-nagara* clause occurs adjacent to the passive predicate. For example, the subject of the *-nagara* clause can be controlled by *Marii* in (27a), but not in (27b).

- (27) a. Jon<sub>i</sub> wa Marii<sub>j</sub> ni [PRO<sub>i,j</sub> nikkori warai-nagara]  
John Top Mary by smile-while  
kisu s-are-ta.  
kiss do-Pass-Past  
‘John was kissed by Mary, smiling.’ (either John or Mary is smiling)
- b. Jon<sub>i</sub> wa [PRO<sub>i,??j</sub> nikkori warai-nagara] Marii<sub>j</sub> ni  
John Top smile-while Mary by  
kisu s-are-ta.  
kiss do-Pass-Past  
‘John was kissed by Mary, smiling.’ (only John is smiling)

Finally, Matsumoto (1990b) has observed that the subject of a participial *-te* clause can also be controlled by a logical subject in cases where the participial is interpreted as a resultative.<sup>7</sup>

### 2.2.2 Other Grammatical-Functional Phenomena

There are other syntactic phenomena in Japanese which are sensitive to functional properties of a sentence, and which can therefore be used to determine the complexity of f-structure and to identify a word (predicate) at f-structure. These are passivization, the double-*o* constraint, adjunct modification, and verbal anaphora.<sup>8</sup>

#### 2.2.2.1 Passivization

As noted in 2.1.3.3, the effects of passivization can constitute a test for the complexity of f-structure. This test is especially useful in determining the functional status of a morpheme in morphologically complex predicates such as morphological causatives and desideratives. If Ishikawa’s (1985) biclausal analysis of Japanese morphological causatives is correct, for example, passivization of the whole causative verb should be able to affect only the arguments of the causative morpheme *-sase(ru)*, and therefore it would not be possible to make the object of a base verb the subject of a passive sentence. On the other hand, if Japanese morphological causatives are in fact functionally monoclausal, the base object should be able to become the subject of the passive, unless this is ruled out for some other reason. (I will examine this prediction in Chapter 6.)

Some caution is needed with regard to the use of passivization as a test for monoclausality in f-structure. Some passive sentences may be judged as unacceptable for semantic/pragmatic reasons, even with a passivizable predicate. Nitta (1989) and Matsumoto (1990b) have observed that verbs that *can* passivize do not passivize when the referent of the object NP is interpreted as inalienable from, or at least spatially contiguous with, the referent of the subject NP. Consider the following examples.

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<sup>7</sup>An example is (i) below (Matsumoto 1990b).

(i) Chizu ga [yosumi o kitte] kabe ni har-arete ita.  
map Nom four-corner Acc cut wall Loc put-PassAsp-Past  
‘A map was on the wall, with its four corners cut.’

<sup>8</sup> There is in fact another phenomenon which can be used as a test: desiderativization. This will be discussed in Chapter 5.

- (28) a. ??Sono huku wa Jon ni yotte kir-are-ta.  
           the clothes Top John by put.on-Pass-Past  
           ‘The clothes were put on by John.’ (intended)
- b. Sono huku wa mada dare ni mo kir-arete i-nai  
       the clothes Top yet anyone by even put.on-Pass Asp-Neg  
       ‘The clothes have never been put on by anyone.’

In (28a), the patient NP *sono huku* ‘the clothes’ is interpreted as worn on the agent’s body. In such a case, the passive sentence is generally unacceptable. This might be related to the fact that the agent is affected by the action described, and in such a case there is insufficient motivation for treating the patient as a more topic-worthy entity than the agent. Verbs like *kiru* can be passivized if the referent of the patient NP is not placed on the agent, as shown by the acceptability of (28b). This kind of restriction is often found in passives and passive-like predicates in various languages. Examples include the intransitivized resultative predicate in Japanese (Matsumoto 1990a) and indeed in most languages that have such a resultative predicate (Nedjalkov & Jaxontov 1988).

Some other passive sentences that are sometimes regarded as ungrammatical become grammatical in a sentence frame like (28b) above. This is true of *wataru* ‘cross’ (see Takami 1992:89-141 for more examples).

- (29) a. ?Sono hashi wa watar-are-ta.  
           the bridge Top cross-Pass-Past  
           ‘The bridge was crossed.’
- b. Sono hashi wa mada dare ni mo watar-arete i-nai.  
       the bridge Top yet anyone by even cross-Pass Asp-Neg  
       ‘The bridge has never been crossed.’

In this book, I will point out further cases of this sort.

#### 2.2.2.2 *Double-o Constraint*

It was first noted by Harada (1973) that Japanese does not (usually) allow two accusative NPs in one clause. The initial data supporting this view come from the case marking of causees in morphological causatives. For example, in the following sentence (30), in which a transitive verb is causativized, the causee cannot be marked in the accusative, even though a causee can be marked in the accusative if the base verb is intransitive. Dative marking must be used instead.

- (30) Taroo wa Hanako {\*o/ni} meshi o tak-ase-ta  
 Taro Top Hanako Acc/Dat rice Acc cook-Caus-Past  
 ‘Taro made Hanako cook rice.’

Kuroda (1978) and Poser (1983) have argued that this condition is not a “surface” phenomenon, as the ungrammaticality is not removed even when the accusative marking *o* does not appear at the surface, as in (31). In (31a), *o*-marking on the NP *meshi* ‘rice’ is removed by *mo*, and in (31b) this NP is gapped.

- (31) a. \*Taroo wa Hanako o meshi mo tak-ase-ta.  
 Taro Top Hanako Acc rice too cook-Caus-Past  
 ‘Taro made Hanako cook rice, too.’  
 b. \*Taro ga Hanako o tak-ase-ta meshi  
 Taro Nom Hanako Acc cook-Caus-Past rice  
 ‘the rice that Taro made Hanako cook’

The problem with the sentences in (30) and (31) appears to be the presence of two objects in one clause, regardless of the surface marking.

On the other hand, the double-*o* constraint is a “surface” phenomenon when the two accusative-marked NPs are not both objects (Poser 1983; cf. Shibatani 1978). Poser notes that sentence (32a) is only somewhat unacceptable.

- (32) a. ?Kare wa yoru no haiuei o kuruma o tobasu.  
 He Top night Gen highway Acc car Acc fly  
 ‘He drives his car fast on the highway at night.’  
 b. Yoru no haiuei mo kare wa kuruma o tobasu.  
 night Gen highway too he Top car Acc fly  
 ‘He drives his car fast on the highway at night, too.’

In this case, the greater distance between the two accusative NPs and/or the replacement of one of the accusative markers by some particle (e.g., *mo* ‘too’) improves the acceptability of the sentence, as in (32b).

These observations suggest that there are in fact two different double-*o* constraints (Poser 1983, Ishikawa 1985, Dubinsky 1994). The “deep” double-*o* constraint prohibits the subcategorization of two or more direct objects by a single predicate, while the “surface” double-*o* constraint disfavors the surface occurrence of two or more accusative markers in a clause. If this view is correct, the “deep” double-*o* constraint can be used as a test to identify what should count as a single predicate in f-structure.

### 2.2.2.3 *Adjunct Interpretation*

Another grammatical phenomenon that is sensitive to the functional complexity of a sentence is adjunct interpretation, which has been used to argue for the functional biclausality of Japanese morphological causatives (Ishikawa 1985; cf. Kuno 1973, Shibatani 1976a, b, 1978). One relevant test examines whether an adverb can be interpreted ambiguously: if an adverb is interpreted ambiguously, modifying different morphemes within a morphologically complex predicate, it indicates that two clauses are involved.

The intuition behind this test is the following. If a sentence is functionally biclausal, a full range of adverbs should be able to appear in each of the two clauses in f-structure (except for adverbs that can appear only in matrix clauses), and therefore an adverb should be ambiguous if 1) it is placed in a syntactic position that allows modification of either predicate, and 2) it is compatible with the meaning of either predicate. If a sentence is functionally monoclausal, on the other hand, there is only one clause in f-structure, and therefore an adverb should be interpreted unambiguously.

One question that needs to be asked is whether it is truly the case that such modificational ambiguity of the adverb is completely non-existent in functionally monoclausal sentences. In this regard, there is some evidence suggesting that even a purely mono-morphemic predicate, which is clearly monoclausal in f-structure, can allow an ambiguous interpretation of an adverb. Dowty (1979) discusses the following English example attributed to Robert Binnick.

(33) The Sheriff of Nottingham jailed Robin Hood for four years.

This sentence can be interpreted in at least two ways. In one (unlikely) reading, the time adverbial refers to the duration of the Sheriff's activity of jailing Robin Hood. In the other reading, it refers to the duration in which Robin Hood was kept in jail. Thus an adverb can sometimes cause modificational ambiguity even with a monomorphemic verb, and therefore ambiguities of adjunct interpretation cannot be attributed to functional biclausality in every case.

It should be noted, however, that not all adverbs produce this ambiguity, and moreover that duration adverbials like *for four years* in (33) do not produce ambiguity with all kinds of verbs. Dowty notes that duration adverbials (and some other adverbs such as *almost* and *again*) allow an ambiguous interpretation only with verbs that belong to the accomplishment class. Except for these cases, the ambiguous interpretation does seem to be non-existent with mono-morphemic, purely lexical verbs. For example, the

manner adverbs *shibushibu* ‘reluctantly’ and *ooyorokobi de* ‘with great joy’ in Japanese cannot be interpreted ambiguously with the lexical verb *kaesu* ‘return’, as exemplified in (34) below.

- (34) Jon wa ooyorokobi-de Marii o ie ni kaeshi-ta.  
 John Top with.great.joy Mary Acc house Goalreturn-Past  
 ‘John joyfully let Mary go home.’

Note that this is true in spite of the fact that this verb semantically involves two actions by two different persons (i.e., Mary’s action of going home as well as John’s causation of this event), and therefore it should be semantically possible for the adverb to modify two different parts of the verb’s meaning. The fact that this does not occur suggests that a sub-part of a predicate does not allow a full range of adjuncts to modify it.

These observations suggest the following test for the functional complexity of a complex predicate. Each clause in f-structure must be able to accommodate a full range of adjuncts to modify a PRED (excluding particular adjuncts that may be ruled out for some other reason), whereas no sub-part of a PRED in f-structure allows such a range of adjuncts to modify it. Accordingly, what counts as evidence for functional biclausality is whether or not a full range of adjuncts can modify each morpheme of a complex predicate. If the range of adverbs that can modify a morpheme is restricted, then that morpheme is not a PRED at f-structure (i.e., the f-structure is not complex). If the range is not restricted, then the morpheme is a PRED. In this book I will adopt this criterion.

One way to ensure that the adverbial ambiguity is to be attributed to functional biclausality is to find a contrast between the tested complex predicate and another semantically similar predicate having a simplex f-structure (e.g., mono-morphemic predicates). This is essentially the test that Shibatani (1976a, b) uses. If despite of the semantic similarity one does exhibit ambiguity and the other does not, the difference can be attributed to functional complexity.

A further qualification must be made concerning adjunct ambiguity: some adverbs have the potential of being interpreted with respect to logical subject as well as grammatical subject, at least in certain syntactic positions. Thus Jackendoff (1972) observes that adverbs like *reluctantly* are interpreted with respect to an agent (logical subject) as well as grammatical subject when occurring in certain positions. Note the contrast between (35a) and (35b).

- (35) a. Reluctantly John was kissed by Mary. (John is reluctant)  
 b. John was reluctantly kissed by Mary.  
 (either John or Mary is reluctant)

In Japanese it appears that an interpretation with respect to the logical subject is most typically associated with an immediately preverbal position.

- (36) a. Shibushibu Jon wa Marii ni kisu s-are-ta.  
 reluctantly John Top Mary by kiss do-Pass-Past  
 ‘Reluctantly, John was kissed by Mary.’ (unambiguous)
- b. Jon wa shibushibu Marii ni kisu s-are-ta.  
 John Top reluctantly Mary by kiss do-Pass-Past  
 ‘Reluctantly, John was kissed by Mary.’ (unambiguous)
- c. Jon wa Marii ni shibushibu kisu s-are-ta.  
 John Top Mary by reluctantly kiss do-Pass-Past  
 ‘John was reluctantly kissed by Mary.’ (ambiguous)

This kind of ambiguity must be carefully distinguished from those related to functional biclausality.

#### 2.2.2.4 *Verbal Anaphora: The Soo Suru Test*

The final test for functional complexity that I will consider here is verbal anaphora. Since Postal 1969, the Anaphoric Island Constraint has been considered a test for wordhood. There are two different kinds of Anaphoric Island Constraint. The Inbound Anaphoric Island Constraint prohibits anaphoric and deictic uses of pronominal forms from being a part of a word; The Outbound Anaphoric Island Constraint prohibits a part of a word from being anaphorically referred to. However, it has been noted that some Japanese complex predicates such as morphological causatives and aspectual compounds violate both of these constraints: the anaphoric element *soo suru* ‘do so’ can refer back to the base verb and its arguments of a causative verb (Shibatani 1973b, 1976a); *soo suru* can be the base of causatives and aspectual compounds, as in *soo s-ase(-ru)* (so do-Caus(-NonPast)) ‘make ... do so’ (Kageyama 1989, 1993). Shibatani interprets his observation as showing that these predicates actually involve two predicates each heading a different clause in Deep Structure. Given the analysis in which such predicates are analyzed as biclausal at f-structure (Ishikawa 1985), the use of *soo suru* might also be regarded as a test for complexity (monoclausality or biclausality) at f-structure.

The reliability of the *soo suru* test as a diagnostic for functional wordhood/clausality is of course an empirical question. In fact, a recent study of Ward, Sproat & McKoon (1991) suggests that outbound anaphora appears to be grammatically permitted and only pragmatically constrained,

while the Inbound Anaphoric Constraint appears to be a real constraint on wordhood (see Bresnan & Mchombo 1995). The use of *soo suru* as a base of different kinds of complex predicates in this book reveals that this anaphoric expression can be naturally used in a complex predicate when it corresponds to one f-structure (a single functional predicate and its arguments), while it cannot be used when it does not even correspond to one a-structure. Judgments are somewhat murky if *soo suru* corresponds to one a-structure but not one f-structure.

In this book, I will use the above tests as diagnostics to examine functional wordhood and clausality.

### 2.2.3 Constituent Structure Tests

Unlike functional structure and argument structure, the one- or two-word status of a predicate at c-structure is not necessarily related to mono- or biclausality. In fact, a predicate can be two morphological words in c-structure without creating a biclausal constituent structure, as in the case of separable complex verbs in German and Dutch. The issue of constituent monoclausality, however, often comes up in relation to complex predicates. Therefore, I will discuss both of the tests both for constituent monoclausality and for morphological wordhood here.

#### 2.2.3.1 The Distribution of *shika* and Monoclausality

One diagnostic that has often been used to test for surface phrase structure complexity is the distribution of the focusing particle *shika*. This particle occurs with a negative morpheme such as *nai* ‘not’, *zu* ‘not’, and *dame* ‘no good’, and together with the negative imparts the meaning ‘only’ to the phrase to which it is attached.

It has been argued that *shika* can only be added to a phrase that is in the same clause as its associated negative marker (the Locality Condition) (Muraki 1978, Oyakawa 1975). This claim is based on the contrast between sentences like (37a) and (37b).

- (37) a. Jon wa Tookyoo e shika ik-anakat-ta.  
           John Top Tokyo Goal go-Neg-Past  
           ‘John went to Tokyo only.’
- b. \*Biru wa [Jon ga Tookyoo e shika itta] to iw-anakat-ta.  
           Bill Top John Nom Tokyo Goal went Comp say-Neg-Past  
           ‘Bill said that John went to Tokyo only.’ (intended)

Kato (1991) reformulates the Locality Condition in terms of government. In his reformulation, the reason (37a) is acceptable but (37b) is not is that the *shika*-phrase is governed by negation in the former, while it is not in the

latter (see also Aoyagi & Ishii 1994). The distribution of *shika* has been used as evidence for the surface monoclausality of certain potentially complex sentences involving morphological causatives and the *morau* construction (e.g., Muraki 1978).

The validity of the *shika* test for surface constituent structure must be evaluated carefully. Especially, one must consider whether it is surface constituent structure or functional structure that the distribution of this particle is sensitive to. In fact, the evidence does suggest that the distribution of *shika* is sensitive to c-structure configuration rather than f-structure.<sup>9</sup>

One such piece of evidence suggesting that reference to c-structure is necessary comes from the experiential *koto* construction (Sells 1991), as exemplified by sentences in (38). In these sentences, the main predicate *aru* ‘have’ takes a tensed sentential complement clause, the subject of which is controlled by the upper subject (Nakau 1973, Sells 1991).

- (38) a. Jon wa [PRO BLS ni shika ik-anakat-ta koto] ga aru.  
           John Top       BLS Goal   go-Neg-Past Comp Nom have  
           ‘John has the experience of going only to BLS (among many  
           conferences in a year).’
- b. ??BLS ni shika Jon wa [PRO ik-anakat-ta] koto ga aru.  
           BLS Goal   John Top       go-Neg-Past Comp Nom have  
           ‘John has the experience of going only to BLS (among many  
           conferences in a year).’ (intended)
- c. BLS ni shika Jon wa [PRO it-ta] koto ga nai.  
           BLS Goal   John Top       go-Past Comp Nom have.Neg  
           ‘John does not have the experience of going to conferences other  
           than BLS.’

(38a) and (38b) do not differ in their f-structures, but they do differ in the position of the adjunct *BLS ni* ‘to BLS’ in the surface constituent structure. The fact that (38a) is acceptable but (38b) is not cannot be explained with reference to f-structure. On the other hand, the Locality Condition stated at c-structure can explain this fact, given that the *shika* phrase in (38b) occurs in the upper clause. ((38b) is acceptable without *shika* on *BLS ni*.) Note also

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<sup>9</sup>The notion that the distribution of the focusing particle *shika* is sensitive to surface constituent structure is consistent with the observation made by Jackendoff (1972), such that aspects of semantic interpretation concerned with focus and presupposition make reference to Surface Structure rather than Deep Structure.

that (38c), in which negation appears on the main verb, is acceptable, also consistent with the Locality Condition.<sup>10,11</sup>

It should be noted that the Locality Condition is not the only account previously proposed for the distribution of *shika*. An alternative solution, suggested by Sagawa (1979), appeals to the Specified Subject Condition. In this account, *shika* must be associated with a negative marker in the minimal clause that has a specified subject (roughly, a subject that is not controlled). This formulation is consistent with the observation that sentences like (38c) are generally possible when the subject of the embedded complement clause is controlled (cf. Muraki 1978).

However, the specified subject account also predicts that a phrase in a controlled adjunct clause (XADJ) can also have *shika* placed on it, with a negative morpheme appearing in the matrix clause. That is, it predicts that the following sentence should be acceptable.

- (39) \*Jon wa [PRO hon shika kai ni] Kanda ni ik-anakat-ta.  
       John Top book buy Pur Kanda Goal go-Neg-Past  
       ‘John went to Kanda to buy books only.’ (intended)

However, this prediction is not borne out. Thus, the Locality Condition for the distribution of *shika* appears to be a better solution.

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<sup>10</sup>Kato’s (1991) formulates the distribution of negative polarity items (NPI) such as *shika*-NP as follows: NPI or its trace must be governed by Neg. In LFG terms, this means that NPI and Neg must be clausemates in c-structure or f-structure. The mention of trace in Kato’s formulation is motivated by sentences like the following.

- (i) Gakkoo de shika Jon wa [Biru ga benkyoo shi-nai] to omotte iru.  
       school Loc John Top Bill Nom study do-Neg Comp think Asp  
       ‘John thinks that Bill studies at school only.’

The reason this sentence is not ruled out while (38b) is is not clear. It might be related to the difference in the nature of preposing in (38b) and (i). As will be discussed in Chapter 3, (i) involves long-distance scrambling, while (38b) involve a different process.

<sup>11</sup>Oyakawa (1975) claims that sentences like (i) constitute the only exception to this otherwise valid Locality Condition.

- (i) Taro wa [PRO gohan shika tabe-ta] koto ga nai.  
       Taro Top rice eat-Past Comp Nom have.Neg  
       ‘Taro has never eaten anything other than rice.’

However, *gohan shika* in (i) can be analyzed as being in the upper clause, as I will argue in Chapter 3.

2.2.3.2 Tests for Morphological Wordhood<sup>12</sup>

There are several diagnostic tests to determine whether a given expression counts as a morphological word or not. There are two relevant studies that have directly addressed this issue: Poser's (1989) study of so-called noun-incorporated *suru* periphrastic verbs, e.g., *benkyoo suru*, which is composed of a verbal noun *benkyoo* 'study' and a verb *suru* 'do' (see also Kageyama 1993); and Matsumoto's (1990b) study of so-called intransitivizing resultative predicates, such as *totte aru* 'be in the state of having been kept'. These papers use overlapping sets of tests to argue that both of the predicates in question are in fact composed of two morphological words, though they have often been discussed as if they were a single lexical item (e.g., Kageyama's (1980a) study of *suru*). (The term "noun-incorporated" periphrastic verb is therefore misleading.)

These tests concern morphological integrity: they examine whether a syntactic operation can look into the internal structure of such a predicate and separate out part of the predicate from the remainder. The first test is whether various focusing particles such as *wa*, *mo*, *koso*, *shika*, and *nanka* can be inserted between the two morphemes of a predicate. In this respect, *benkyoo suru* counts as two words.<sup>13</sup>

- (40) a. *benkyoo mo suru*  
           study too do  
           'study, too'
- b. *rakka mo suru*  
           fall too do  
           'fall, too'

To be sure, one possible source for (40a) is the distinct expression *benkyoo o suru* 'do a study', which is an example of a light verb construction (Chapter 4). However, no such source is possible for (40b) (cf. ??*rakka o suru*).

A related test is to see whether the first morpheme can be coordinated with the particle *mo*. The grammaticality of (41) below again suggests that *suru* periphrastic verbs count as two words.

<sup>12</sup>In this book, I will not discuss the issue of clitics in relation to morphological wordhood. On this issue, see, for example, Inkelas 1989.

<sup>13</sup>Poser (1984) regards particles like *wa* and *mo* as suffixes. If this view is correct, the insertion of these particles might take place in the lexicon, and this might not be a test for morphological wordhood.

- (41) Sore wa rakka mo bakuhatsu mo shi-nakat-ta.  
 it Top fall too burst too do-Neg-Past  
 ‘It neither fell nor burst.’

Morphological integrity can also be tested by examining whether a single component morpheme within a complex predicate can occur alone in various environments. One such environment is provided by a question-answer sequence, as in (42) below.

- (42) Sore wa rakka shi-mashi-ta ka? — Hai, shi-mashi-ta  
 it Top fall do-Pol-Past Q Yes, do-Pol-Past  
 ‘Did it fall?’ ‘Yes, it did.’

One can also examine how much of a complex predicate is repeated in emphatic repetition. In (43) *suru* alone is repeated.

- (43) Un, benkyoo shi-ta shita  
 Yes study do-Past do-Past  
 ‘Yes, I DID study!’

A similar test appeals to other constructions that require the repetition of a verb, such as the *koto* repetitive construction exemplified in (44) (see Okamoto 1994 for more on such constructions).

- (44) Sore wa rakka shita koto wa shita ga ...  
 it Top fall did thing Foc did but  
 ‘It did fall, but ...’

The operations above are strictly syntactic: they cannot operate even on sublexical elements, even when the sublexical elements can be morphological words by themselves. Consider, for example, an N-N compound, which is a morphological word composed of two nouns that can be morphological words by themselves. A subpart of this kind of compound cannot be separated, deleted or coordinated with *mo* in the ways described above.<sup>14</sup> The ungrammaticality of coordinated form is given in (45).

- (45) \*Ejiputo mo Isuraeru mo taishikan  
 Egypt too Israel too embassy  
 ‘Egyptian and Israeli embassies’ (intended)

<sup>14</sup>There are some operations that work differently. As noted by Miyajima (1983) and Kageyama (1993), *oyobi*-coordination can operate on sublexical units (e.g., *kokunai-oyobi kaigai-ryokoo* ‘domestic and overseas trip’. Kageyama points out that only sublexical morphological words (not stems or roots) can be coordinated with *oyobi*.

Note that *Ejiputo* and *Isuraeru* can be morphological words by themselves, but here they are part of a compound, which is a syntactically terminal unit at c-structure.

The ungrammaticality of (45) also suggests that the relevant constraint cannot be stated in terms of phonological wordhood, either (cf. Booij 1985). It is true that the expressions that are separated, deleted, or coordinated in the above cases are phonological words, but phonological wordhood is not a sufficient condition.<sup>15</sup>

The results of these tests are also consistent with whether a predicate can undergo certain derivational processes such as Renyookei Nominalization. For example, a noun-incorporated *suru* verb cannot be nominalized (*\*benkyoo shi*). This derivational process cannot apply to a unit that can be identified as two morphological words by other tests.

One might note here that certain derivational processes *can* apply to a unit consisting of more than one morphological word (so-called syntactic word formation; see Kageyama 1993). Such processes include *-gachi* suffixation (Sugioka 1984, 1989). The status of *-kata* suffixation, which has often been used in the literature to identify the lexical status of a verb, is in fact subtle. Some speakers (including myself) can suffix *-kata* to what can be identified as a sequence of two morphological words by other tests (e.g., *%benkyoo shi-kata* ‘a way to study’). Hence I will not use this suffixation process as a test for morphological wordhood in this book.

Cases like the *suru* periphrastic verbs above deserve further comment. A *suru* periphrastic verb constitutes one word at f-structure, as can be seen from the fact that the entire *suru* periphrastic verb as a whole can be passivized. This means that passivization can apply to a unit that is morphologically two words. This kind of situation is not problematic in the Lexical Mapping Theory. Passivization (i.e., the suppression of the logical subject) applies to a predicate’s argument structure, which can perfectly well be composed of two morphological words (see Bresnan 1994a).

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<sup>15</sup>It should be noted that the unit that is separated, deleted, or coordinated must be a phonological (minor) phrase, which is the unit of accent in Japanese (McCawley 1968b). For example, every occurrence of the verbs *suru*, *shita*, and *shimashita* in (41), (42), (43), (44), and (45) must be pronounced as one accentual unit, although the sequence of a verbal noun plus these verbs may be pronounced as one accentual unit if no sub-part is deleted, coordinated, or separated. However, the status of phonological phrase is not a sufficient condition for separability, deletability or coordination, either. Compounds like *Ejiputo taishikan* ‘Egyptian embassy’ can be pronounced as two accentual units, but it is not possible to separate, delete, or coordinate (with *mo*) the first element of such compounds.

### **2.3 Final Note**

It must be emphasized again that there is no unitary notion ‘word’ in the context of this book. This means that the lexical integrity hypothesis, which states that no syntactic rule can operate into a word (e.g., Lapointe 1979), must be relativized in accordance with the different senses of the notion word to which the syntactic rule is sensitive (Bresnan & Mchombo 1995). What counts as one word according to a test for wordhood at one level of representation does not necessarily count as a word at another level. Thus, even if a sequence of two morphemes can be nominalized (and hence is one word at c-structure), this does not require the sequence to be one word at other levels of representation as well. Similarly, even if a sequence of two morphemes allows coordination of the first morpheme (and hence is composed of two words in c-structure), this does not mean that it constitutes two words at other levels. We will see many cases of such mismatches in what follows.

## CHAPTER 3

### The *Morau* and *Hoshii* Constructions and the Nature of the Predicative Complement

The purpose of this chapter is to examine the two constructions which in fact turn out not to involve complex predicates, but rather are constructions involving a main predicate and the head of a syntactic predicative complement (XCOMP) that constitute two separate words at all levels of representation. These are the *morau* construction and *hoshii* construction, which have sometimes been discussed under the loosely defined category of complex predicates (e.g., Nakau 1973, Shibatani 1978, Muraki 1978, Ishikawa 1985). They are exemplified in (1a) and (1b).

- (1) a. Jon wa    Marii ni    hon o    yonde    morat-ta.  
      John Top Mary Dat book Acc read    receive-Past  
      ‘John had Mary read a book for him.’  
      (More literally: ‘John received from Mary the benefit of reading a book for him.’)
- b. Boku wa    Biru ni    sono    hon o    yonde    hoshi-i  
          I Top     Bill Dat    the    book Acc read    want-Pres  
      ‘I want Bill to read the book.’

In (1a), the verb of receiving *morau* takes a participial (*-te*) complement which occurs adjacent to it. Literally, this construction means something like ‘X (the subject of *morau*) receives from Y (the dative object of *morau*) the benefit of Y’s doing something for X’. The honorific form of this verb, *itadaku* ‘receive’, can also be used in this construction. Verbs of giving, such as *yarū* and *ageru*, can be used in a similar way, to mean ‘X gives to Y the benefit of (X’s) doing something for Y’. I will call the construction exemplified by (1a) the *morau* construction.<sup>1</sup> In (1b), the

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<sup>1</sup>However exotic the *morau* construction might appear to those unfamiliar with Japanese, this kind of construction is by no means unique to Japanese. See Mohanan 1983 for discussion of a similar construction in Malayalam with verbs of giving (but not of receiving). Heine & Reh (1983) also note that some applicative morphemes in African languages have developed historically from verbs of giving. It might be the

adjective *hoshii* ‘want’ takes a participial complement adjacent to it, with the subject of the complement interpreted as identical with the dative object NP of *hoshii*. I will call this construction the *hoshii* construction.

In this chapter, I will present evidence suggesting that these constructions do not involve complex predicates as is defined in this book. That is, the sequence of a participial and a main predicate in these constructions is made up of two words at c-, f-, and a-structures. Moreover, I will provide evidence suggesting that sentences like (1a) and (1b) are biclausal in constituent structure, too. I will further suggest that some phenomena exhibited by these constructions are in fact characteristic features of XCOMP constructions in Japanese in general, a point which will also be relevant to the discussion in later chapters.<sup>2</sup>

### 3.1 Morphological Status of *-Te Morau/-Te Hoshii*

The sequence of a *-te* participial and the main predicate *morau* or *hoshii* has sometimes been described as if it constituted a single morphological word (e.g., Kuno 1973, Nakau 1973, Miyagawa 1989b). However, as Sugioka (1984) and Ishikawa (1985) have noted, this is not the case. Sugioka and Ishikawa use the fact that particles such as *wa* and *mo* can intervene between the two predicates to argue for the morphological independence of the complement predicate and the main predicate in these constructions. This point can be reinforced by the application of other tests for morphological wordhood mentioned in 2.2.3.2. For example, repetitive constructions generally allow only *morau* and *hoshii* to be repeated, as in (2).

- (2) Jon wa    Marii ni    kite    morat-ta    koto wa    morat-ta ga...  
      John Top Mary Dat come receive-Past thing Foc receive-Past but  
      ‘John did receive the benefit of Mary’s coming, but....’

Also, the sequence of a participial verb and *morau* or *hoshii* does not undergo Renyookei Nominalization.

One phenomenon that must be explained is the fact that in these

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case that these applicative predicates were originally elements of a construction similar to the Japanese constructions involving verbs of giving and receiving.

<sup>2</sup>*Morau* and *hoshii* are not the only predicates that take a participial complement. Other such verbs include *shimau* ‘finish’, *oku* ‘put’, and *miru* ‘look’. As discussed in note 4 below, not all of these involve a functionally biclausal syntactic complement structure.

constructions the *-te* complement must be adjacent to the main predicate in order to be fully acceptable (McCawley & Momoi 1986, Sells 1990).<sup>3</sup> For example, observe the contrast between (3a) on the one hand and (3b) and (3c) on the other, and between (4a) on the one hand and (4b) and (4c) on the other.

- (3) a. Boku wa Marii ni [soko ni itte] hoshii.  
 I Top Mary Dat there go want  
 'I want Mary to go there.'
- b. ??Marii ni [soko ni itte] boku wa hoshii.  
 Mary Dat there go I Top want
- c. \*Boku wa Marii ni [itte] soko ni hoshii.  
 I Top Mary Dat go there want
- (4) a. Jon wa Marii ni [sono hon o yonde] morat-ta.  
 John Top Mary Dat the book Acc read receive-Past  
 'John had Mary read the book for him.'
- b. ??Marii ni [sono hon o yonde] Jon wa morat-ta.  
 Mary Dat the book Acc read John Top receive-Past
- c. \*Jon wa Marii ni [yonde] sono hon o morat-ta.  
 John Top Mary Dat read the book Acc receive-Past

In (3b) and (4b) the subject of *hoshii* and *morau* intervenes between the *-te* complement and the main predicate. In (3c) and (4c) an argument of the *-te* complement intervenes between them. In either case the sentences are unacceptable, though (3b) and (4b) sound better than (3c) and (4c).

Explanation of this phenomenon requires an understanding of the functional and constituent structures of these constructions. I will, therefore, hold this issue in abeyance for the moment and turn to the discussion of functional and constituent structures.

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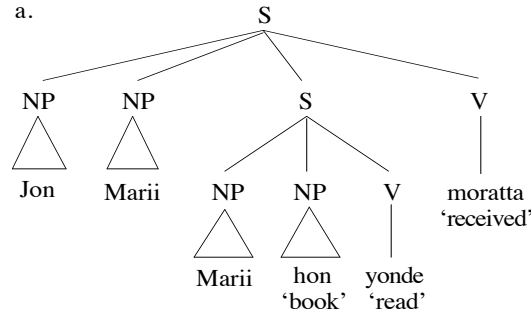
<sup>3</sup>Ishikawa (1985:196) notes that in some cases a subject NP can intervene between a participial verb and *morau*. He judges (i) as acceptable. To me, this sentence is not fully acceptable.

(i) ?Marii ni sono hon o yonde nado Jon wa moraw-anakat-ta.  
 Mary Dat the book Acc read and.so.on John Top receive-Neg-Past  
 'John did not receive any benefit like Mary's reading the book.'

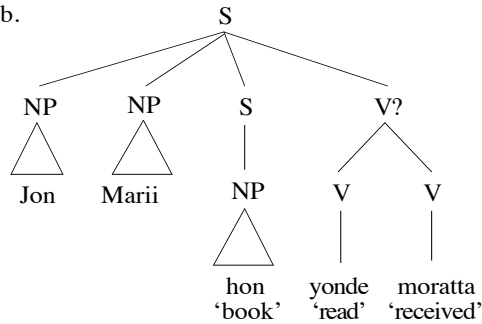
### 3.2 Evidence for Functional Biclausality

Nakau (1973), Inoue (1976a), Shibatani (1978), and others have presented evidence (discussed below) suggesting that sentences like (1a) and (1b) above involve a biclausal Deep Structure like (5a). In their view, a monoclausal Surface Structure like (5c) is derived from this structure by Predicate Raising and Equi NP Deletion (cf. (5b)), and then Tree Pruning of an S that contains no predicate. (See also Muraki 1978.)

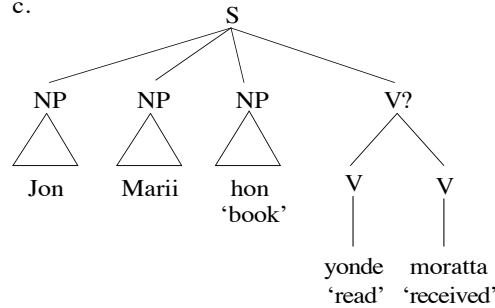
(5) a.



b.

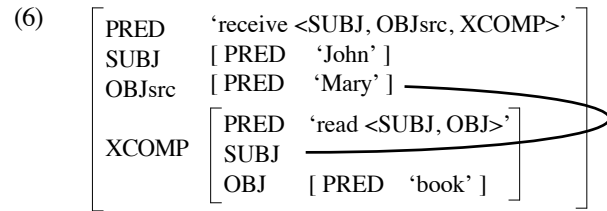


c.



Ishikawa (1985) has proposed an LFG analysis of these constructions. He has proposed that these constructions are functionally biclausal. In his

analysis, the f-structure of (1a) above is (6). (Here I will follow his analysis of the dative NP as an OBJ<sub>2</sub>, which is in this case OBJ<sub>src</sub> in the current theory.)



The evidence supporting this functional biclausality is overwhelming. First, the dative-marked OBJ<sub>src</sub> NP in these constructions has subject properties. Thus it can be an antecedent of *jibun*.

- (7) Kare<sub>i</sub> wa Marii<sub>j</sub> ni jibun<sub>i,j</sub> no hon o  
 he Top Mary Dat self Gen book Acc  
 yonde {hoshikat-ta / morat-ta}  
 read want-Past / receive-Past  
 'He wanted Mary to read his/her book.'  
 'He had Mary read his/her book for him.'

It can also be the target of subject honorification, as can be seen from the use of *meshiagaru* 'eat (honorific)' in the examples below.

- (8) a. Jon wa sensei ni sore o meshiagatte itadai-ta.  
 John Top teacher Dat it Acc eat(H) receive(H)-Past  
 'John received the honor of the teacher eating it.'
- b. Boku wa sensei ni sore o meshiagatte hoshikat-ta.  
 I Top teacher Dat it Acc eat(H) want-Past  
 'I wanted the teacher to eat it.'

These two pieces of evidence suggest that the participial verb in these constructions has its own subject, which is controlled by the OBJ<sub>src</sub> NP of the upper clause in a biclausal functional structure.

Second, one cannot apply passivization to the whole complex of a participial verb and *morau*, and make the object of the participial into the

passive subject.<sup>4</sup>

- (9) \*Sono hon wa Jon ni yonde moraw-are-ta.  
       the book Top John by read receive-Pass-Past

Third, *soo suru* ‘do so’ can replace the *-te* verb and its arguments and occur as part of the *morau* and *hoshii* constructions.

- (10) a. Boku wa Biru ni mo hon o yonde morat-ta.  
       I Top Bill Dat too book Acc read receive-Past  
       Boku wa Marii ni mo soo shite morat-ta.  
       I Top Mary Dat too so do receive-Past  
       ‘I had Bill read a book to me. I had Mary do so, too.’  
       b. Boku wa Biru ni mo hon o yonde hoshikat-ta.  
       I Top Bill Dat too book Acc read want-Past  
       Boku wa Marii ni mo soo shite hoshikat-ta.  
       I Top Mary Dat too so do want-Past  
       ‘I wanted Bill to read the book. I wanted Mary to do so, too.’

Finally, the range of adverbials that can modify the participial verb in these constructions is in no way restricted, as shown in (11).

- (11) a. Jon wa Marii ni {mainichi / soko de / yukkuri}  
       John Top Mary Dat every day / there / slowly  
       sono hon o yonde moratta.  
       the book Acc read received  
       ‘John had Mary read the book for him {every day / there / slowly}.’

---

<sup>4</sup>Not all predicates that take a *-te* complement resist passivization. For example, the following sentence shows that the *-te oku* construction allows the whole complex to be passivized.

- (i) Sono tegami wa daiji ni totte ok-are-ta.  
       the letter Top carefully keep put-Pass-Past  
       ‘The letter was carefully stored.’

This observation suggests that some *-te* constructions can involve a monoclausal functional structure. Closer examination of these constructions is left for further research.

- b. Boku wa Marii ni {mainichi / soko de / yukkuri}  
 I Top Mary Dat every day / there / slowly  
 sono hon o yonde hoshii.  
 the book Acc read want  
 'I want Mary to read the book {every day / there / slowly}.'

The above observations show that the *morau* and *hoshii* constructions are functionally biclausal, involving a main verb and its XCOMP.

### 3.3 C-Structure of the *Morau/Hoshii* Constructions

It has been claimed that the *morau* and *hoshii* constructions have a monoclausal surface structure, and that the arguments and adjuncts of the XCOMP participial verb appear as sisters to those of the main predicate directly under the top S, as in (5c) (Nakau 1973, Inoue 1976a, Shibatani 1978, Muraki 1978). In the Transformational analysis presented in Section 3.2 above, these two points  $\perp$  monoclausality and the appearance of these phrases directly under the top S  $\perp$  are related, since such a monoclausal structure is generated by the Tree Pruning of an embedded S node, moving phrases in the embedded clause to the upper clause (cf. (5c)). In this section, I will argue that the arguments and adjuncts of an embedded XCOMP can indeed be immediately dominated by the top S, but that this does not necessarily mean that these sentences have a monoclausal constituent structure. In fact, I will provide evidence suggesting that the *morau* and *hoshii* constructions have a complex constituent structure.

#### 3.3.1 Evidence for Biclausal Constituent Structure

Evidence suggests that the *morau* and *hoshii* constructions retain a complex surface constituent structure, with the XCOMP complement forming a clausal constituent. First, as noted by Sells (1990), the following sentences involving coordinate and comparative constructions supports the bracketing indicated.

- (12) a. Boku wa Tanaka-san ni [jitensha o shuuri shite]  
 I Top Tanaka-Mr. Dat bicycle Acc repair  
 [daidokoro o sooji shite] hoshii.  
 kitchen Acc clean want  
 'I want Mr. Tanaka to repair the bicycle and clean the kitchen.'

- b. Boku wa Tanaka-san ni [jitensha o shuuri suru] yori  
 I Top Tanaka-Mr. Dat bicycle Acc repair than  
 [daidokoro o sooji shite] hoshii.  
 kitchen Acc clean want  
 ‘I want Mr. Tanaka to clean the kitchen rather than repair the bicycle.’

Evidence involving the distribution of *shika* also motivates a complex constituent structure for the *morau* and *hoshii* constructions. When the negative marker is placed on the participial verb, the *shika* phrase must appear to the right of the right-most argument or adjunct of the upper clause. Thus, while (13a) and (13b) are acceptable, (13c) and (13d) are not. (Note that these are acceptable if the negation is placed on *hoshii*. I will discuss this issue shortly.) This fact is unexplained unless these sentences involve a complex constituent structure with the bracketing indicated.

- (13) a. Boku wa Marii ni [Tookyoo e Biru to shika ik-anaide] hoshii.  
 I Top Mary Dat Tokyo Goal Bill with go-Neg want  
 ‘I want Mary to go to Tokyo with Bill only.’  
 b. Boku wa Marii ni [Biru to shika Tookyoo e ik-anaide] hoshii.  
 I Top Mary Dat Bill with Tokyo Goal go-Neg want  
 ‘I want Mary to go to Tokyo with Bill only.’  
 c. ??Boku wa Biru to shika Marii ni [Tookyoo e ik-anaide] hoshii.  
 I Top Bill with Mary Dat Tokyo Goal go-Neg want  
 ‘I want Mary to go to Tokyo with Bill only.’  
 d. ??Biru to shika boku wa Marii ni [Tookyoo e ik-anaide] hoshii  
 Bill with I Top Mary Dat Tokyo Goal go-Neg want

### 3.3.2 Evidence for “Extraction” out of a *-Te* Complement

In spite of the complex constituent structure, the arguments and adjuncts of an embedded XCOMP in the *morau* and *hoshii* constructions can appear optionally in the matrix clause. First, the arguments and adjuncts of an XCOMP can scramble freely with the arguments and adjuncts of a main predicate, as illustrated in (14).

- (14) a. Boku wa Marii ni [soko made kite] {hoshikat-ta/morat-ta}.  
 I Top Mary Dat there as.far.as come want-Past/receive-Past  
 ‘I wanted Mary to come there./I received the benefit of Mary’s coming there’
- b. Boku wa soko made Marii ni kite {hoshikat-ta/morat-ta}.  
 I Top there as.far.as Mary Dat come want-Past/receive-Past  
 ‘I wanted Mary to come there./I received the benefit of Mary’s coming there’
- c. Soko made boku wa Marii ni kite {hoshikat-ta/morat-ta}.  
 there as.far.as I Top Mary Dat come want-Past/receive-Past  
 ‘I wanted Mary to come there./I received the benefit of Mary’s coming there’

Another evidence concerns the distribution of the particle *shika*. The acceptability of the sentences in (15) below, together with the Locality Condition of *shika*, suggests that the arguments and adjuncts of XCOMP are under the top S.

- (15) a. Boku wa Marii ni soko ni shika itte hoshiku nakat-ta  
 I Top Mary Dat there Goal go want Neg-Past  
 ‘I wanted Mary to go there only.’
- b. Boku wa Marii ni soko made shika kite moraw-anakat-ta  
 I Top Mary Dat there as.far.as come receive-Neg-Past  
 ‘I had Mary come only to that position.’<sup>5</sup>

This situation contrasts with constructions that involve a complement

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<sup>5</sup>The difference in the morphological nature of the negative marker *nai* in the *hoshii* construction and *morau* construction deserves some attention. The morpheme *nai* that attaches to adjective stems like *hoshiku* is an independent morphological word, while the morpheme *-(a)nai* that attaches to verb stems like *moraw* is a bound morpheme. This difference can be shown by the difference in the insertability of particles. While a particle like *wa* can intervene between an adjective and *nai*, it cannot intervene between a verb and *-nai*, as illustrated in (i) and (ii) below.

- (i) utsukushiku wa nai  
 beautiful Foc Neg  
 ‘not beautiful’
- (ii) \*tabe wa nai  
 eat Foc Neg

whose subject is not controlled (COMP). In this regard, compare (16a) and (16b). *Hoshii* ‘want’ has the alternative possibility of having a COMP (closed complement) as one of their arguments, as shown in (16a). In this case, arguments and adjuncts in the COMP clause cannot have *shika* on any of them when a negative morpheme appears on the upper predicate (Muraki 1978), unlike their XCOMP-selecting counterparts.

- (16) a. Boku wa [Marii ga soko ni itte] hoshii.  
 I Top Mary Nom there go want  
 ‘I want Mary to go there only.’
- b. ??Boku wa [Marii ga soko ni shika itte] hoshiku nai.  
 I Top Mary Nom there go want Neg  
 ‘I want Mary to go there only.’

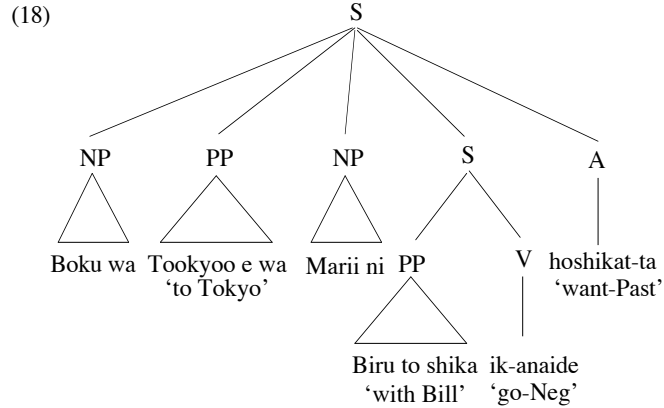
These pieces of evidence have been used to support monoclausal surface constituent analysis represented in (5c) above. However, evidence for the matrix-clause positioning of the arguments and adjuncts of an embedded XCOMP holds even when there is evidence for the constituent biclausality. In the following sentence (17), one argument of the embedded XCOMP appears in the main clause while an adjunct appears within the subordinate structure.<sup>6</sup>

- (17) Boku wa Tookyoo e wa Marii ni mo [Biru to shika  
 I Top Tokyo Goal Foc Mary Dat too Bill with  
 ik-anaide] hoshikat-ta.  
 go-Neg want-Past  
 ‘I wanted Mary to go to Tokyo with Bill only, too.’

This suggests that the constituent structure of (17) is (18).

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<sup>6</sup>There is a problem with this view, however. If the category of an XCOMP is an S, then the subject of the XCOMP should be able to appear in the S. Such a sentence would in fact be generated as well-formed as long as the controlling argument of an upper clause was not expressed. However, such a sentence is not grammatical. This case must then be ruled out by an independent principle. The same issue arises in cases in which an NP bears the function of an XCOMP (see next chapter).



This kind of constituent structure is by no means peculiar to these two constructions. In fact, it appears that all predicates in Japanese that select for an XCOMP allow this kind of matrix-clause positioning of an argument and adjunct of embedded XCOMP clause. Such an extraction out of an XCOMP clause has been observed with respect to control constructions (Mamoru Saito 1985, 1995, Nemoto 1991), but this appears to be true of raising constructions as well (cf. Muraki 1978).

The following sentences show that the adjuncts and arguments of the embedded clause can scramble with those of the upper clause. (19a) through (19c) involve raising constructions, while (19d) through (19g) involves control constructions. (19h) shows that this is possible even with arguments of a doubly embedded XCOMP. Note that their occurrence in the upper clause is not limited to sentence-initial position.

- (19) a. Sono koro hon o Jon wa [yomu yoo-ni] natta.  
           the period book Acc John Top read became  
           ‘John came to read books around that time.’
- b. Jon wa sore gurai heya o [kiree-ni] shi-ta.  
    John Top that about room Acc clean make-Past  
    ‘John made the room that much clean.’
- c. Jon wa totemo sono huukei o [utsukushiku] omot-ta.  
    John Top very the scene Acc beautiful think-Past  
    ‘John thought the scene very beautiful.’
- d. Tookyoo e Jon wa [ikoo] to shi-ta.  
    Tokyo Goal John Top go Comp do-Past  
    ‘John tried to go to Tokyo.’

- e. Jon wa koko made Marii ni mo [kuru no] o yurushita.  
John Top here as.far.as Mary Dat too come Nmz Acc permitted  
'John permitted Mary to come here, too.'
- f. Tookyoo ni Jon wa [itta] koto ga aru.  
Tokyo Goal John Top go-Past Comp Nom have  
'John has the experience of having been to Tokyo.'
- g. Soko e Jon wa [iku] koto ni nat-ta.  
there John Top go Comp Cop become-Past  
'It was decided that John would go there.'
- h. Sono koro Tookyoo e Jon wa ikoo to suru yoo-ni  
the period Tokyo Goal John Top go Comp try  
nat-ta.  
become-Past  
'John came to try to go to Tokyo around that time.'

The particle *shika* can also be placed on an argument or adjunct of the XCOMP, with the negative morpheme on the upper predicate (cf. Muraki 1978). Examples are given in (20). Note that this is possible even with a phrase from a doubly embedded XCOMP, as in (20g).

- (20) a. Jon wa sono hon shika yomu yoo-ni nar-anakat-ta.  
John Top the book read become-Neg-Past  
'John came to read the book only.'
- b. Jon wa sore gurai shika heya o kiree-ni shi-nakat-ta.  
John Top that about room Acc clean make-Neg-Past  
'John made the room only that much clean.'
- c. Jon wa sore o sono teedo ni shika yoku omotte i-nakat-ta.  
John Top it Acc the degree good think Asp-Neg-Past  
'John regarded it as only that much good.'
- d. Jon wa Tookyoo e shika ikoo to shi-nakat-ta.  
John Top Tokyo Goal go Comp try-Neg-Past  
'John tried to go to Tokyo only.'
- e. Jon wa Marii ni soko e shika iku no o yurus-anakat-ta.  
John Top Mary Dat there Goal go Nmz Acc permit-Neg-Past  
'John permitted Mary to go there only.'

- f. Jon wa Tookyoo ni shika itta koto ga nai.  
 John Top Tokyo Goal go-Past Comp Nom have.Neg  
 ‘John has (the experience of having) been only to Tokyo.’
- g. Jon wa soko ni shika iku koto ni nar-anakat-ta.  
 John Top there Goal go Comp Cop become-Neg-Past  
 ‘It was decided that John would go there only.’
- h. Boku wa Marii ni Tookyoo e shika itte moratta  
 John Top Mary Dat Tokyo Goal go received  
 koto ga nai  
 Comp Nom have.Neg  
 ‘I have (the experience of having) received the benefit of Mary going to Tokyo only.’

These observations argue strongly that not only *morau* and *hoshii* but all XCOMP constructions allow the phrases in an XCOMP to be optionally positioned under the top S.

In the present account, arguments and adjuncts of an embedded XCOMP can be “extracted” out of the XCOMP clause. This displacement of arguments and adjuncts of the predicative complement does not change the grammatical function (or abstract Case) of the phrase displaced. In this sense the displacement is similar to scrambling. It is especially similar to long-distance scrambling or long-distance preposing (Kuno 1980a, b, Tonoike 1980a, b, Mamoru Saito 1985, 1992, 1995), exemplified in (21), in that it is not clause-bound.

- (21) Sono hon o Jon wa Biru ni [Marii ga katta] to itta.  
 the book Acc John Top Bill Dat Mary Nom bought Comp said  
 ‘John said that Mary bought the book.’

However, the “extraction” out of an XCOMP is different from cases like (21) in a few respects. First, a phrase preposed by long-distance scrambling must occur in sentence-initial position (Tonoike 1980b, Saito 1995), as shown in (22), while there is no such restriction on XCOMP constructions, as shown in (19).

- (22) \*Jon wa sono hon o Biru ni [Marii ga katta] to itta.  
 John Top the book Acc Bill Dat Mary Nom bought Comp said  
 ‘John said that Mary bought the book.’

Saito (1992, 1995) and Nemoto (1991) treat the long-distance scrambling involved in (22) as A'-movement, IP-adjoining the preposed phrase, while

extraction out of a control clause is A-movement.

Another related difference concerns the distribution of *shika*. Phrases preposed by long-distance scrambling cannot be marked with *shika* with a negative morpheme occurring in the upper predicate, as shown in (23).

- (23) \*Sono hon shika [Jon wa [Marii ga kat-ta] to iw-anakat-ta].  
           the book John Top Mary Nom bought Comp say-Neg-Past

In this sentence, the preposed NP occurs outside the bracketed IP, making the *shika* phrase ungoverned by the negated predicate. This is in contrast to the XCOMP constructions above in (20). See also Nemoto 1991 for anaphoric evidence for the difference between long-distance scrambling and the displacement of a phrase out of a control clause.

### 3.3.3 Functional Uncertainty and Constituent Structure

In a theory like LFG where no movement is recognized, this positioning of arguments and adjuncts of an XCOMP predicate can be modeled by Functional Uncertainty (Kaplan & Zaenen 1989, Dalrymple 1993, Zaenen & Kaplan 1995; see Chapter 2, sec. 2.1.4.2), which has been used to explain a similar phenomenon found in Dutch infinitival constructions (Zaenen & Kaplan 1995).<sup>7</sup> In this view, Japanese has a phrase structure rule (24), by which the phrases immediately dominated by an S are allowed to be associated with the arguments and adjuncts of a (multiply) embedded XCOMP.

$$(24) S \longrightarrow XP^* \qquad \{V, A\} \\
(\uparrow \text{XCOMP}^* \text{GF}) = \downarrow \qquad \uparrow = \downarrow$$

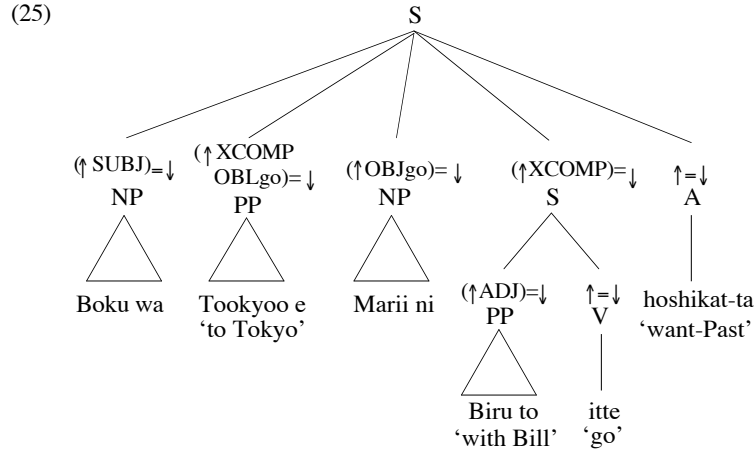
In this formulation, the matrix-clause positioning of the arguments and adjuncts of a lower predicate is sensitive to the functional status of the lower predicate, and not to its categorial status; it is possible only if the lower predicate is the head of an XCOMP.

This phrase structure rule can create a constituent structure like (25).

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<sup>7</sup>The use of Functional Uncertainty should be constrained so that it will not generate ungrammatical structures. In this regard, it must be noted that the use of Functional Uncertainty with respect to XCOMP structures is limited to Inside-Out Functional Uncertainty (in which a higher phrase-structure position is related to a function of a lower structure). Dalrymple (1993) has argued that some aspects of grammar require Outside-In Functional Uncertainty, in which a lower phrase-structure position is associated with a function of a higher structure. The use of Outside-In Functional Uncertainty with respect to an XCOMP structure might produce a structure in which arguments of a main clause appear in the XCOMP substructure under V' or A'.

This rule allows two alternative positions for a given argument or adjunct of an XCOMP. It might appear in the main clause due to Functional Uncertainty, or in the embedded clause due to the expansion of an embedded S.



### 3.3.4 Adjacency Requirement and XCOMP Constructions

Let us return to the issue of adjacency issue. Earlier I pointed out that a *-te* complement and its main predicate must be adjacent to each other in the *morau* and *hoshii* constructions in order to be fully acceptable. This phenomenon is again not peculiar to *morau* and *hoshii* constructions alone: the predicate in any XCOMP complement must be adjacent to the main verb in Japanese in order to be fully acceptable. This phenomenon is illustrated by sentences (26) through (28), which involve raising constructions, and (29) through (32), which involve control constructions. (For a contrast similar to the one given in (27) and (28), see Kikuchi & Takahashi 1991 and Takezawa 1987, respectively.)

- (26) a. Jon wa [hon o yomu yoo-ni] nat-ta  
           John Top book Acc read become-Past  
           ‘John came to read books then.’
- b. ?[hon o yomu yoo-ni] Jon wa nat-ta  
       book Acc read John Top become-Past
- c. \*Jon wa [yomu yoo-ni] hon o nat-ta  
       John Top read books Acc become-Past

- (27) a. Jon wa heya o [sore gurai kiree-ni] shi-ta.  
 John Top room Acc that about clean make-Past  
 'John made the room that clean.'
- b. ??[Sore gurai kiree-ni] Jon wa heya o shi-ta.  
 that about clean John Top room Acc make-Past
- c. \*Jon wa heya o [kiree-ni] sore gurai shi-ta.  
 John Top room Acc clean that about make-Past
- (28) a. Jon wa sono huukei o [totemo utsukushiku] omot-ta.  
 John Top the scene Acc very beautiful think-Past  
 'John thought the scene very beautiful.'
- b. ?Sono huukei o [totemo utsukushiku] Jon wa omot-ta.  
 the scene Acc very beautiful John Top think-Past
- c. \*Jon wa sono huukei o [utsukushiku] totemo omot-ta.  
 John Top the scene Acc beautiful very think-Past
- (29) a. Jon wa [soko ni ikoo] to shi-ta  
 John Top there Goal go Comp do-Past  
 'John tried to go there.'
- b. ?[Soko ni ikoo] to Jon wa shi-ta  
 there Goal go Comp John Top do-Past
- c. \*Jon wa [ikoo] to soko ni shi-ta  
 John Top go Comp there Goal do-Past
- (30) a. Jon wa Marii ni [soko made iku-no] o yurushita.  
 John Top Mary Dat there as.far.as go-Nmz Acc permitted  
 'John permitted Mary to go there.'
- b. ??Marii ni [soko made iku-no] o Jon wa yurushita.  
 Mary Dat there as.far.as go Nmz Acc John Top permitted
- c. \*Jon wa Marii ni [iku-no] o soko made yurushita.  
 John Top Mary Dat go Nmz Acc there as.far.as permitted
- (31) a. Jon wa [Tookyoo ni itta koto] ga aru.  
 John Top Tokyo Goal go-Past Comp Nom have  
 'John has the experience of going to Tokyo.'

- b. ?[Tookyoo ni itta koto] ga Jon wa aru.  
Tokyo Goal go-Past Comp Nom John Top have
- c. \*Jon wa [itta koto] ga Tookyoo ni aru.  
John Top go-Past Comp Nom Tokyo Goal have
- (32) a. Jon wa kaigi de [soko ni iku koto] ni nat-ta.  
John Top meeting Loc there go Comp Cop become-Past  
'At the meeting, it was decided that John would go there.'
- b. ?Kaigi de [soko ni iku koto] ni Jon wa nat-ta.  
meeting Loc there go Comp Cop John Top become-Past
- c. \*Jon wa kaigi de [iku koto] ni soko ni nat-ta.  
John Top meeting Loc go Comp Cop there become-Past

These examples show that, as in the case of *hoshii* and *morau*, the intervention of an argument of a predicative complement between the predicative complement and the main predicate is completely unacceptable, while the intervention of the subject (or other argument or adjunct) of the main predicate is only partially unacceptable.

Possible counterexamples to this claim include the sentences in (33) below, which are often treated as cases of secondary predication (e.g., Kikuchi & Takahashi 1991, Koizumi 1994a, Takezawa 1993). In (33) the phrase *kirei ni*, which might be regarded as the head of an XCOMP, can occur in a position non-adjacent to the main predicate. Contrast (33b) with (27b) above.

- (33) a. Jon wa heya o kirei ni sooji shita.  
John Top room Acc clean sweep do-Past  
'John swept the room clean.'
- b. Kirei ni Jon wa heya o sooji shita.  
clean John Top room Acc sweep do-Past

However, there is some evidence suggesting that *kirei ni* in (33) is in fact an adverb (ADJUNCT) rather than an adjective (XCOMP). One problem here and in (27) is that an adverb converted from a nominal adjective (e.g., *kirei na* 'beautiful, clean') seems formally indistinguishable from the so-called Renyookei form of the nominal adjective, which is what appears in (27). However, there is one important difference between the two: their negative forms. The negative Renyookei form of the nominal adjective *kirei na* is

*kirei de naku*, while the negative Renyookei form of the adverb *kirei ni* is *kirei ni de (wa) naku*.<sup>8</sup> When *kirei ni* in (33) is negated, it takes the negative form of the adverb, as shown in (34a). This situation is reversed when the same expression is used as a predicative complement of *suru* ‘make’ or *dekiru* ‘can make’, in which case it takes the negative form of the nominal adjective, as shown in (34b).

- (34) a. Jon wa heya o amari  
 John Top room Acc much  
 {*kirei ni de wa naku* / \**kirei de naku*} sooji shita.  
 cleanly Cop Foc Neg / clean Cop Neg swept  
 ‘John swept the room not so clean.’
- b. Jon wa heya o amari  
 John Top room Acc much  
 {*kirei de naku* / \**kirei ni de wa naku*} shita.  
 clean Cop Neg / cleanly Cop Foc Neg made  
 ‘John made the room not so clean.’

Accordingly, *kirei ni* in (33) is not an adjective (XCOMP), and therefore it does not pose a counterexample to the claim at issue here.<sup>9</sup> Adverbs of this

<sup>8</sup>The negative of the nominal adjective *kirei na* is *kirei de nai*; and, since any form ending in the negative *nai* is formally an adjective, this negated form has a Renyookei form just like that of any adjective, i.e., with *ku*, resulting in *kirei de naku*. Adverbs, on the other hand, do not inflect at all; to negate an adverb, one must add to it the Renyookei form of the copula *da*, i.e., *de*, and then *nai*. This in turn can form a Renyookei form in *ku*, resulting in *kirei ni de (wa) naku*.

<sup>9</sup>The same argument can be made with regard to the adverb *chiisaku* ‘into small pieces’ in (i).

- (i) Jon wa sore o chiisaku kitta.  
 John Top it Acc small cut  
 ‘John cut it to small pieces.’

This adverb is seemingly indistinguishable from the Renyookei form of the adjective *chiisai*. However, the following difference with negatives shows that it is actually an adverb.

- (ii) Jon wa sore o (sonna ni) {*chiisaku de wa naku*/\**chiisaku naku*} kitta.  
 John Top it Acc so much small Cop Foc Neg small Neg cut  
 ‘John cut it not so short.’
- (iii) Jon wa sore o (amari) {*chiisaku naku*/\**chiisaku de wa naku*} shita.  
 John Top the much small Neg small Cop Foc Neg made  
 ‘John made it not so short.’

kind are called *adverbs of results* by Nitta (1989), and they can be used with a change of state verb to describe a resulting state.

One way to state the required adjacency of the head of the XCOMP to its main predicate is by means of a Precedence Rule (see Bresnan 1994b and Zaenen & Kaplan 1995 for the role of Precedence Rules in grammar). More specifically, the following restrictions hold; 1) all functions other than a predicative complement (i.e., SUBJ, OBJ, OBJ<sub>θ</sub>, OBL<sub>θ</sub>, COMP, ADJ, XADJ) must precede the predicative complement of the same predicate (i.e., XCOMP); 2) non-heads must precede their head. The first rule forces all the non-XCOMP arguments and adjuncts of the main predicate to precede the XCOMP, and the second rule forces the arguments and adjuncts of the predicate of an XCOMP to precede the predicate. Given the patterns observed above, 2) is a rule that must be fully satisfied, while the status of 1) is a subtle one, subject to individual variation.

These can be formally stated as the rules annotated on {V, A} in (35) (shown in the third and fourth lines). Here, the minus sign represents ‘other than’ and “<”, ‘precedes’.

$$\begin{array}{rcl}
 (35) \quad S & \longrightarrow & XP, \quad \{V, A\} \\
 & & (\uparrow \text{XCOMP}^* \text{GF}) = \downarrow \quad \uparrow = \downarrow \\
 & & (\uparrow (\text{GF} - \text{XCOMP})) < (\uparrow \text{XCOMP}) \\
 & & (\uparrow \text{GF}) < \downarrow
 \end{array}$$

### 3.4 Conclusion

In this chapter, I have argued that the *morau* and *hoshii* constructions do not involve complex predicates as defined in this book. The sequence of a participial verb and *morau* or *hoshii* is in fact made up of two words both at c-structure and f-structure (and there is no reason to suppose that the sequence constitutes one word at a-structure either). Moreover, there is evidence suggesting that the c-structures of these constructions are also biclausal. Some properties that are seemingly peculiar to these constructions turn out in fact to be subsumed under more general properties of XCOMP constructions in Japanese.

The properties of XCOMP constructions in Japanese that I have discussed in this chapter are quite general. In the next chapter I will argue that they have a surprising relevance to a seemingly unrelated phenomenon.

## CHAPTER 4

### Light Verb Constructions

In this chapter, I will discuss light verb constructions in Japanese.<sup>1</sup> The Japanese *suru* light verb construction has attracted much attention in the recent literature in relation to the theory of argument structure (Grimshaw & Mester 1988, Sells 1989, Miyagawa 1989a, Tsujimura 1990, Dubinsky 1990, Isoda 1991a, Kageyama 1991, Terada 1990, Ahn 1990, Uchida & Nakayama 1993, cf. Kageyama 1980a, Dubinsky 1985). This construction involves the verb *suru* ‘do’ (termed a “light verb”) and a certain kind of argument-taking noun called the verbal noun (Martin 1975), which is marked in the accusative in this construction.

One peculiar property of this construction is that the arguments of the verbal noun appear outside the NP headed by the verbal noun, as if they were arguments of the light verb. To account for this, Grimshaw & Mester (1988) (hereafter G&M) have proposed an operation on the argument structure called “argument transfer”. This idea is further elaborated by Miyagawa (1989a) and Tsujimura (1990). Some observations that G&M make about this construction have also been used as evidence for a hierarchically structured argument structure (Grimshaw 1990).

In this chapter, I will argue for an alternative analysis of light verb constructions in Japanese, in which the verbal noun and the light verb are two fully independent words in all senses. They involve two predicates which have fully specified, independent argument and functional structures, the verbal noun representing the head of a syntactic predicative complement (i.e., XCOMP) of the light verb, whose subject controls or binds the missing subject of the complement.

This chapter is organized in a way slightly different from the other chapters. Since the phenomena of light verb constructions have been discussed in the literature in relation to the specific proposal put forward by G&M, I will first spend some time in discussing their claims. I will first point out that the argument transfer account cannot explain certain facts of the *suru* construction in 4.1. I will also point out in Section 4.2 that,

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<sup>1</sup>A slightly different version of this chapter has appeared in Matsumoto 1996a.

contrary to G&M's claim, many raising and control verbs, such as *hajimeru* 'begin', *kokoromiru* 'try', and *mejiru* 'order', also show essentially the same properties as the light verb *suru*. I will argue that those light verb properties of raising and control verbs can be explained once we recognize that those light verb constructions are in fact raising and control constructions with the verbal noun representing the head of a syntactic predicative complement (XCOMP) of raising and control verbs. I will informally present my analysis of these raising and control light verb constructions in 4.3.1. In the proposed analysis, there is no transfer of arguments or any operation on the argument structure of a verbal noun or a light verb; arguments of a verbal noun are *syntactically* allowed to occur outside the NP, just as phrases in a clausal predicative complement are allowed to occur outside the clause, as discussed in Chapter 3. I will show that this analysis, together with some independently motivated rules of Japanese grammar, accounts for all the light verb properties of raising and control verbs without appealing to any special mechanism such as argument transfer. I will then present a formal analysis in 4.3.2. In 4.3.3 I will argue that this analysis can be extended to the *suru* construction, solving some problems unexplained in the argument transfer account. The nature of verbal nouns and case marking will be further discussed in relation to the proposed account and an alternative account in 4.4

## 4.1 The *Suru* Construction and Argument Transfer

### 4.1.1 Case Marking in the *Suru* Construction

The *suru* light verb construction is illustrated in (1).

- (1) Seihu wa koogai e [NP honbu no idoo] o shita.  
 gov't Top suburb Goal hdqrs Gen movement Acc did  
 'The government moved the headquarters to a suburb.'

In (1), the past-tense form of the verb *suru* appears with the accusative-marked verbal noun *idoo* 'movement'. The NP headed by the verbal noun in this construction is called the (*theta*-)transparent NP by G&M, for a reason that will become apparent below.

The verbal noun and the light verb in this construction constitute two different morphological words, judging by the tests introduced in Chapter 2. For example, the verbal noun alone can be coordinated with *mo*, and the light verb alone can be repeated in repetitive constructions.

The most crucial property of this light verb construction is that under certain circumstances the arguments of the verbal noun can occur outside the transparent NP. In (1) above, the phrase *koogai e* 'to a suburb' appears

outside the transparent NP headed by *idoo*. This positioning is evidenced by the case marking of this argument. In Japanese there are two somewhat different patterns of case marking: verbal case marking (the pattern in which arguments of a verb are case-marked in a sentence) and nominal case marking (the pattern in which arguments are case-marked in an NP). The nominal case marking is essentially the addition of genitive marking to the corresponding verbal case marking: all NPs and PPs (or in fact all phrasal categories that do not end in a tensed element) that are immediately dominated by an NP are marked with genitive *no* in addition to the verbal case marking (see Kitagawa & Ross 1982, Mamoru Saito 1983), with some surface adjustments made (e.g., nominative *ga* and accusative *o* drop out; *ni* (dative, goal, locative, etc.), which cannot occur with the genitive marking, is replaced by a postposition with an overlapping function, such as *e* as goal marker). The absence of the genitive marking *no* on the goal PP *koogai e* ‘to a suburb’ in (1) thus shows that this phrase does not occur within the transparent NP. By contrast, the NP *honbu* ‘headquarters’ in (1) is marked with the genitive *no*, and hence this NP occurs within the NP headed by *idoo*.

This phrase-structure position of the goal PP is confirmed by the observations concerning scrambling and the distribution of a negative polarity *shika* phrase. The goal phrase in (1) can scramble with the subject; in addition, the goal phrase can be marked with *shika*, with negation on *suru*, as in (2). Given the Locality Condition of *shika* (see 2.2.3.1), this indicates that the goal phrase is in the upper clause.

- (2) Seihu wa koogai e shika [<sub>NP</sub> honbu no idoo] o shi-nakat-ta.  
 gov’t Top suburb Goal hdqrs Gen movement Acc do-Neg-Past  
 ‘The government moved the headquarters to suburbs only’

The PP *koogai e* in (1) is an argument of the verbal noun *idoo*, and not of the verb *suru*. If this argument (and the subject argument) were an argument of the verb *suru*, it should be licensed by *suru* even if the accusative-marked NP was replaced by *nani* ‘what’, which (unlike *idoo*) cannot have any arguments. However, this is not the case. (3) below is not acceptable (unless used as an echo question).

- (3) \* Seihu wa koogai e nani o shi-mashita ka.  
 gov’t Top suburb Goal what Acc do-Pol-Past Q  
 ‘What did the government do to a suburb?’ (intended)

The nouns that allow verbal (genitiveless) marking of their arguments in this construction are restricted to verbal nouns (see Martin 1975). The

verbal nouns, which are mostly of Chinese origin, are process nouns and form so-called “incorporated” periphrastic verbs with *suru* without any case marking on them (e.g., *idoo suru* ‘move’) (Martin 1975, Kageyama 1980a, Dubinsky 1985, Miyagawa 1987a, Poser 1989, Tsujimura 1992a; see also Iida 1987, Saiki 1987). The *suru* light verb construction must be carefully distinguished from this “incorporated” periphrastic verb form.

The exclusion of nouns other than verbal nouns from this *suru* light verb construction can be illustrated by the behavior of the compound noun *shukkoo-shiki* ‘departure ceremony’. This noun is not a verbal noun, given that it is not a process noun and that its *suru* “incorporated” form is not possible (\**shukkoo-shiki suru*), although it contains a verbal noun *shukkoo* ‘departure (from a port)’ as first component of the compound. The noun *shukkoo-shiki* can have a Source PP as its modifier indicating the location from which the departure takes place.<sup>2</sup> When this compound is used in the sentence frame of the verb *suru*, however, this phrase cannot appear without genitive marking, as shown in (4a). In contrast, the verbal noun *shukkoo* does allow its source argument to occur without genitive marking, as in (4b).

- (4) a. Karera wa Koobe-koo {kara no/\*kara} shukkoo-shiki o suru.  
           they Top Kobe-port {Src Gen / Src} dep.-ceremony Acc do  
           ‘They will hold the ceremony of departure from the port of Kobe.’  
       b. Karera wa Koobe-koo kara shukkoo o suru.  
           they Top Kobe-port Src departure Acc do  
           ‘They will depart from the port of Kobe.’

#### 4.1.2 The Argument Transfer Account

The *suru* light verb construction provides an apparent counterexample to the locality condition of theta-marking (Chomsky 1981); the verbal noun is apparently theta-marking a phrase outside its maximal projection. In other words, the NP headed by a verbal noun is apparently transparent to theta-marking.

G&M explain this peculiarity of the light verb construction in a way consistent with the locality requirement of theta-marking: the arguments of the verbal noun are transferred to the light verb *suru* by Argument Transfer. In this account, the verb *suru* and the verbal noun *idoo* originally have the argument structures shown in (5). As indicated, *suru* here has an incomplete

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<sup>2</sup>This is an example of a Japanese compound in which the argument structure of a non-head appears to be percolated. See Sugioka 1989 for details of this phenomenon.

or skeletal argument structure.

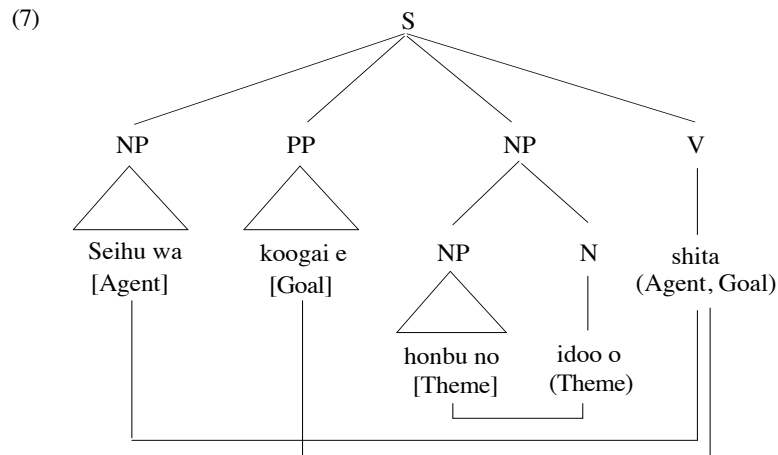
- (5) *suru* ( ) <acc>  
*idoo* (Agent, Goal, Theme)

The operation of Argument Transfer applies to the arguments of *idoo* in (5). This operation, together with certain conditions which it is subject to (see below), either of the argument structures for the combination *idoo* + *suru* given in (6).

- (6) a. *idoo* (Theme) + *suru* (Agent, Goal) <acc>  
 b. *idoo* () + *suru* (Agent, Goal, Theme) <acc>

This Noun + Verb complex, they claim, is listed as a whole in a derived lexical entry.

In G&M's account, the arguments of the verbal noun that remain untransferred appear within the transparent NP, are theta-marked by the verbal noun, and receive genitive marking; transferred arguments appear outside the transparent NP, are theta-marked by *suru*, and do not receive genitive case marking. The licensing relationship involved is illustrated in the lines below the tree in (7).



G&M claim that Argument Transfer is possible only for a verb which has a skeletal (incomplete) argument structure. According to them, *suru* and its morphological causative form *saseru* are the only verbs in Japanese that have skeletal argument structures and may therefore participate in Argument Transfer.

#### 4.1.3 Further Properties of *Suru* and Argument Transfer

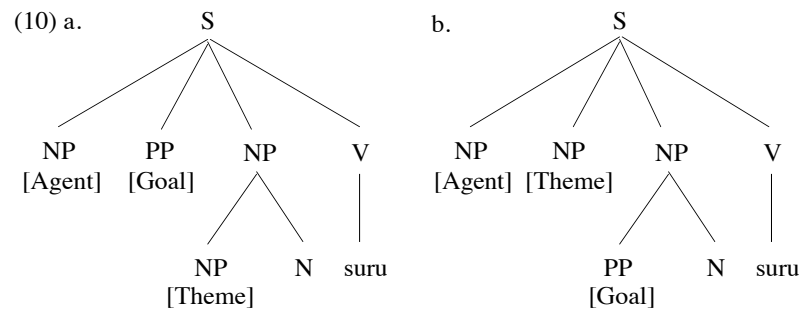
The *suru* light verb construction exhibits several other properties that must be explained. G&M observe that there are certain constraints on the distribution of the arguments of a verbal noun (i.e., whether they must be inside or outside a transparent NP). First, the external argument of the verbal noun must be outside the transparent NP, as shown by the ungrammaticality of (8).

- (8) \*[Seihu no koogai e no honbu no idoo] o shita.  
 gov't Gen suburb Goal Gen hdqrs Gen movement Acc did  
 'The government moved the headquarters to a suburb.' (intended)

In their account, the external argument of a verbal noun is obligatorily transferred. This is ensured by the following two restrictions:

- (9) a. At least one non-subject argument of a verbal noun must be transferred.  
 b. An argument cannot be transferred without all thematically higher arguments being transferred as well.

(9b) is motivated by certain alleged patterns of distribution of arguments inside or outside the transparent NP. G&M claim, for example, that a Theme NP cannot occur outside the transparent NP without Goal being outside as well, while a Goal PP can occur outside the transparent NP with Theme inside. That is, they claim that (10a) is a possible structure but (10b) is not.



According to G&M, this alleged distributional pattern is accounted for by (9b) above and their thematic hierarchy in (11).

- (11) (Agent/Source (Goal (Theme)))

In G&M's view, argument structure is hierarchically organized and

argument transfer operates in an outside-in fashion, transferring a higher argument first before it affects lower ones.

Another property of the *suru* construction that has been treated in the argument transfer account is the restriction on the type of verbal noun that can appear in this construction. As Dubinsky (1985, 1990), Miyagawa (1987a, 1989a), Tsujimura (1990), and Kageyama (1991) have observed, verbal nouns that have experiencer or theme subjects cannot appear in this construction (see also Kageyama 1980a:148). For example, (12a) and (12b) are marginal at best. (12a) is in fact reported as grammatical in G&M, but it is judged as (relatively) unacceptable by many Japanese speakers including myself. Miyagawa (1989a) also judges (12b) as unacceptable. (This is true of other light verb sentences with non-agentive verbal nouns in G&M.)

- (12) a. ?Jon wa buchoo ni shooshin o shita  
           John Top section-chief Goal promotion Acc did  
           ‘John was promoted to section chief.’ (intended)
- b. ??Ya ga mato ni meichuu o shita.  
           arrow Nom target-Loc hit Acc did  
           ‘An arrow struck the target.’ (intended)

Miyagawa (1989a) and Tsujimura (1990) argue that this phenomenon can be predicted in the Argument Transfer account by appealing to the unaccusative nature of these verbal nouns and Burzio’s generalization (Burzio 1986), which they formulate as the condition given in (13).

- (13) A verb assigns an external theta role iff it can assign Case.

The light verb *suru* assigns accusative case to the verbal noun, and therefore *suru* must assign an external theta role to satisfy (13). However, if the verbal noun is unaccusative, no external theta role transfers to the light verb, and therefore the light verb cannot assign an external theta role. Thus (13) is violated.<sup>3</sup>

One further property of the *suru* construction concerns word order. The verbal noun and *suru* are required to be adjacent to each other in order to be fully grammatical: they cannot be separated by the topicalization of the transparent NP, as noted by G&M, or any other way, as shown in (14). (See also Kageyama 1980: 199, 1991).

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<sup>3</sup>Uchida & Nakayama (1993) note an additional aspectual constraint on verbal nouns that can appear in the light verb construction (see also Kageyama 1991).

- (14)a. Jon wa Tookyoo ni ryokoo o shita.  
 John Nom Tokyo Goal trip Acc did  
 ‘John made a trip to Tokyo.’
- b. \*Ryokoo wa Jon ga Tookyoo ni shita.  
 trip Top John Nom Tokyo Goal did
- c. \*Jon ga ryokoo o Tookyoo ni shita.  
 John Nom trip Acc Tokyo Goal did
- d. %Tookyoo ni ryokoo o Jon wa shita.  
 Tokyo Goal trip Acc John Top did

When a non-subject intervenes between the transparent NP and *suru*, as in (14b) and (14c), the sentence is not acceptable at all. When only a subject intervenes, as in (14d), the sentence is only partially unacceptable, with some individual variations of the degree of acceptability. As for non-topicalizability, G&M speculate that it “probably reflect[s] the non-referential, predicate-like character of transparent NPs (p. 208)”.

G&M also point out that the verb *suru* has a “heavy” use in which it has an independent argument structure. *Suru* in fact has many heavy uses (see Uchida & Nakayama 1993), but the use most relevant to the discussion of the light verb *suru* is the one with the meaning ‘do, carry out’. In this meaning, the verb subcategorizes for an agentive subject, a theme object (representing some action or event), and optionally a recipient indirect object; Examples are (15) and (4a) above. Note that the third argument must be strictly a recipient; it cannot be a non-recipient goal, as shown in (15). Note that the third argument must be strictly a recipient; it cannot be a non-recipient goal (or other argument).

- (15) Jon ga {minna ni / \*Tookyoo ni} sonna koto o shita.  
 John Nom all Dat / Tokyo Goal such thing Acc did  
 ‘John did such a thing {to everyone / \*to Tokyo}.’

This heavy *suru* differs from the light *suru* in that it allows the object to be topicalized (as G&M note) or separated in any other way from *suru*. Unlike cases like (14), the recipient argument of heavy *suru* can intervene between

*suru* and its object NP, as in (16).<sup>4</sup>

- (16) Sonna koto o Jon wa minna ni shita.  
 such thing Acc John Top all Dat did  
 ‘John did such a thing to everyone.’

#### 4.1.4 Problems with the Argument Transfer Account

##### 4.1.4.1 Transfer of Adjuncts

There are several problems with this Argument Transfer account. One concerns the “transfer” of an adjunct. Since Argument Transfer is an operation on the argument structure of a predicate, it cannot operate on the adjuncts of a predicate. However, there are cases in which adjuncts of a verbal noun are apparently transferred, appearing in the *suru* construction without genitive marking.

It might not be always apparent whether an adjunct in the light verb *suru* construction is an adjunct of the verbal noun or of *suru*. However, there are certain adjuncts that can occur only with a certain type of predicate, but not with semantically empty *suru*, enabling us to test whether they are adjuncts of the verbal noun or *suru*. For example, *ni*-marked purpose clauses can be used only when it is an adjunct of a verb of motion (see Saiki 1987). In the *suru* construction such a purpose clause can occur without genitive marking when the verbal noun represents motion, as in (17).

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<sup>4</sup>Sentence (i), noted by Uchida & Nakayama (1993), can also be taken to be a case of this heavy *suru*, with the dative NP interpreted as an argument of *suru* rather than that of the verbal noun *keikoku* ‘warning’.

- (i) Keikoku {wa/o} Jon ga murabitotachi ni shita.  
 warning Top/ Acc John Nom villagers Dat did  
 ‘John gave the warning to the villagers.’

Uchida & Nakayama also note that the following sentence is unacceptable.

- (ii) \*Keikoku wa Jon ga murabitotachi ni [ookami ga kuru] to shita  
 warning Top John Nom villagers Dat wolf Nom come Comp did  
 ‘John gave the warning to the villagers that wolves were coming.’ (intended)

This sentence is ruled out because i) as a light *suru* sentence, the word order requirement is not satisfied; 2) as a heavy *suru* sentence, the theme argument indicating the content of warning is not licensed by the verb *suru*.

- (17) Jon wa [PRO jishin no higai o choosa shi ni]  
 John Top earthquake Gen damage Acc research do Pur  
 chookikan tobei o suru koto ni shita.  
 for.a.long.time visit.USA Acc do Comp Dat decided.  
 ‘John decided to go to the US for a long time in order to survey the  
 damage from the earthquake.’

Note that the verbal noun *tobei* in (17) cannot be replaced by *nani* ‘what’, as shown in (18), showing that the *ni*-marked adjunct clause cannot be an adjunct of *suru*.

- (18) ??Jon wa jishin no higai o choosa shi ni  
 John Top earthquake Gen damage Acc research do Pur  
 chookikan nani o suru koto ni shi-mashi-ta ka.  
 for.a.long.time what Acc do Comp Dat decide-Pol-Past Q  
 ‘What did John decide to do for a long time in order to survey the  
 damage from the earthquake.’ (intended)

Therefore, this adjunct must have been “transferred” to *suru*.

Second, adverbs of result occur only with change-of-state predicates (Nitta 1989; see also 3.3.4 above). Such an adverb can be used without genitive marking in the *suru* construction if the verbal noun represents a change of state, as in (19), suggesting that this adjunct has been transferred. (Note that *suru* does not acquire any change-of-state meaning by Argument Transfer and remains incompatible with adverbs of result.)

- (19) Jon wa komakaku sono kami no setsudan o shita.  
 John Top finely the paper Gen cutting Acc did  
 ‘John cut the paper to very small pieces.’

The adverb *komakaku* ‘finely’ in (19) loses its result reading if the transparent NP in (19) is replaced by *nani*, and therefore it cannot be an adjunct of *suru*.

#### 4.1.4.2 Transfer of a Non-subject Argument

Another problem with the Argument Transfer account concerns the claim that at least one non-subject argument of a verbal noun must be transferred. If this is the case, then 1) a verbal noun that has no non-subject argument cannot participate in the *suru* construction; and 2) a verbal noun cannot have all of its non-subject arguments occurring within the transparent NP. Both of these predictions are false.

First, verbal nouns with no syntactic non-subject argument can indeed be used in this *suru* construction. These include *kyoshu* ‘raising one’s hand’,

*sengan* ‘washing one’s face’, *tobei* ‘visiting the US’, *rainichi* ‘coming to Japan’, and *ettoo* ‘wintering’. These are all compound verbal nouns comprising a verbal element and its lexically incorporated semantic argument (e.g., *sengan* < *sen* ‘wash’ and *gan* ‘face’; see Kageyama 1980a). Note that the verbal noun *tobei* occurs in (17) with its adjunct appearing without genitive marking, suggesting that the construction involves the light verb *suru*.

G&M claim that the prediction 2) above is borne out, but the evidence they use is empirically weak. The evidence that they use includes the unacceptability of examples like the following.

- (20) a. ??Jon wa    Marii to no       aiseki o                shita.  
           John Top   Mary with Gen   table.sharing Acc   did  
           ‘John shared a table with Mary.’ (intended)
- b. ??Jon wa    Tookyoo e no       ryokoo o        shita.  
           John Top   Tokyo Goal Gen   trip Acc        did  
           ‘John made a trip to Tokyo.’ (intended)

However, the unnaturalness of sentences like (20a) and (20b) can be removed by some modification. For example, (21a) and (21b) are acceptable, suggesting that (20) cannot be taken as clear evidence for the obligatory transfer of one non-subject argument. The reason for the unnaturalness of (20a) and (20b) might be stylistic in nature.

- (21) a. Jon wa    Marii to no       aiseki o  
           John Top   Mary with Gen   table.sharing Acc  
           shita koto ga        nai.  
           did    Comp Nom   have.Neg  
           ‘John has never shared a table with Mary.’
- b. Jon wa    Tookyoo e no       ryokoo o    shita koto ga        nai.  
           John Top   Tokyo Goal Gen   trip Acc    did    Comp Nom   have.Neg  
           ‘John has never made a trip to Tokyo.’

Another example that G&M appeal to in support of their claim on the obligatory transfer of one non-subject argument is the contrast between (22a) and (22b).

- (22) a. ?Sono deeta ga wareware ni [kare no riron ga  
 that data Nom we to [he Gen theory Nom  
 machigatte iru] to no shoomei o shite iru.  
 mistaken] Comp Gen proof Acc do Asp  
 ‘That piece of data proves to us that his theory is mistaken.’
- b. ??Sonodeeta ga wareware e no [kare no riron ga  
 that data Nom we to Gen [he Gen theory Nom  
 machigatte iru] to no shoomei o shite iru.  
 mistaken] Comp Gen proof Acc do Asp

They assume that (22a) is acceptable but (22b) is not, suggesting, they claim, that at least one argument other than subject must be transferred.

This contrast, however, is not sufficiently convincing to motivate the condition that G&M propose, either. (22a) is not fully acceptable to begin with. One factor for unnaturalness is the choice of a *to*-complement over a *koto*-complement, which is much more natural. Another factor appears to be the non-agentivity of the subject of *shoomei*. It appears that *suru* construction is not fully compatible not only with intransitive unaccusative verbal nouns but also with transitive verbal nouns with a non-agentive subject (I will come back to this issue below).

It is true that many speakers find (22b) worse than (22a). However, this might be attributed to the nature of Goal marking involved. G&M claim that *shoomei* takes a (Beneficiary) Goal as its argument, but this is not totally clear. In addition, *e(-no)* can naturally mark a non-beneficiary goal, but not a beneficiary goal, making (22b) unnatural.<sup>5</sup> The *ni*-marked phrase in (22a), on the other hand, can represent a beneficiary goal (regardless of whether this is an adjunct of *suru* or an argument of *shoomei*). Thus, it is not clear at all that the contrast between (22a) and (22b) motivates the condition that G&M propose (see Kageyama 1991 for further evidence supporting the

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<sup>5</sup> Observe that in (i) a beneficiary goal can be marked with *ni* but not with *e* naturally. (ii) is the nominalized counterpart (with *-kata* suffixation) of (i), and the goal marking *e* plus genitive *no* is not fully acceptable.

- (i) Chichi {ni /?e} nekutai o katta.  
 father Ben/ Goal necktie Acc bought  
 ‘I bought a necktie for my father.’
- (ii) ?Chichi e no nekutai no kai-kata  
 father Goal Gen necktie Gen buy-method  
 ‘the way to buy a necktie for (my) father’

possibility that all non-subject argument may occur within the transparent NP).

#### 4.1.4.3 Sensitivity to Thematic Hierarchy

Also problematic is G&M's claim concerning the thematic hierarchy-based restrictions on the distribution of the arguments of a verbal noun. Their account makes very strict predictions about the distribution of the arguments of a verbal noun, but the facts appear to be different. The evidence that G&M use for a thematic hierarchy-based condition concerns mainly the positions of Goal and Theme. They use sentences (22a) above and (23a) and (23b) below as evidence for their claim. Assuming that (22a) and (23a) (with *ni*) are acceptable, but (23b) (with *e no*) is not, they claim that Theme (the COMP clause) cannot occur outside without Goal ('to us') occurring outside also.

- (23) a. ?Sono deeta ga [kare no riron ga machigatte iru] to  
           the data Nom he Gen theory Nom mistaken Comp  
           wareware ni shoomei o shite iru.  
           we Goal proof Acc do Asp

'That piece of data proves to us that his theory is mistaken.'

- b. ??Sonodeeta ga [kare no riron ga machigatte iru] to  
           that data Nom he Gen theory Nom mistaken Comp  
           wareware e no shoomei o shite iru.  
           we Goal Gen proof Acc do Asp

The contrast is, however, less than convincing; in my judgment (23a), like (22a) above, is not fully acceptable, either. The reason (23b) is worse than (23b) and (22a) can again be explained in terms of the status of the Beneficiary Goal PP (cf. (22b) above).<sup>6</sup>

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<sup>6</sup>There are some sentences that apparently do support G&M's observations about the distribution of Theme and Goal. (i) below is one such example.

- (i) ??Kare wa [ookami ga kuru] to murabitotachi e no keikoku o shita.  
       he Top wolf Nom come Comp villagers Goal Gen warning Acc did  
       'He gave the warning to the villagers that wolves were coming.'

However, note that (ii) below is acceptable. The unacceptability of (i) might be stylistic or semantic in nature.

- (ii) Kare wa [ookami ga kuru] to murabitotachi e no  
       he Top wolf Nom come Comp villagers Goal Gen  
       keikoku o shi ni iku tokoro da

The examination of uncontroversial light verb sentences also suggests that there is no strict restriction on the distribution of Theme and Goal of the sort that G&M suggest. Consider the sentences in (24).

- (24) a. Karera wa soko e sono busshi no yusoo o suru.  
           they Top there Goal the goods Gen transport Acc do  
           ‘They will transport the goods there.’  
       b. Karera wa sono busshi mo soko e no yusoo o suru.  
           they Nom the goods too there Goal Gen transport Acc do  
           ‘They will transport the goods there, too.’

Sentence (24b) shows that Theme can occur outside a transparent NP with Goal inside, contrary to G&M’s claim.<sup>7</sup> Sentence (24a), in which Goal occurs outside and Theme inside, is also acceptable, showing that either Theme or Goal can appear outside with the other remaining inside.

One might note that (24b) is not totally acceptable if the Theme argument is not topicalized and appears with the accusative marking. This is due to the double-*o* constraint discussed in 2.2.2.2. In (24a) the replacement of *o* by *wa* due to Topicalization removes the unnaturalness; therefore the violation involved is the surface constraint, which disfavors the surface occurrence of more than one accusative marking in one clause, not the deep one, which prohibits the occurrence of two direct object NPs in a clause (see also Dubinsky 1990).<sup>8</sup>

## 4.2 Light Verb Phenomena with Raising/Control Verbs

G&M claim that *suru* and its causative verb *saseru* are the only verbs that count as light verbs in Japanese. In fact, however, there are many verbs

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warning Acc do Pur go be.about.to

‘He is about to go to give a warning to villagers that wolves are coming.’

<sup>7</sup>Sentences like (24b) pose a counterexample to Isoda’s (1991a) claim that Locative and Goal arguments must occur outside the transparent NP.

<sup>8</sup>Another way to avoid the surface occurrence of two accusative marking is to put one accusative NP in the focus position of a cleft sentence. Note the acceptability of (i) (see also Dubinsky 1990).

- (i) Karera ga [soko e no yusoo] o suru no wa sono busshi da  
       they Nom there Goal Gen transport Acc do Nmz Top the goods Cop  
       ‘It is the goods that they transport there.’

which exhibit essentially the same phenomena as *suru* does. I will first point out that the verbs *hajimeru* ‘begin’ and *kokoromiru* ‘attempt’ in fact exhibit light verb properties. I will then give a more extensive list of verbs that behave in the same way.<sup>9</sup>

#### 4.2.1 On *Hajimeru* and *Kokoromiru*

Both *hajimeru* and *kokoromiru* exhibit the most crucial property of a light verb: they allow arguments of a verbal noun to appear without genitive marking. This is exemplified in (25).

- (25) a. Karera wa Tookyoo e busshi no yusoo o hajimeta.  
           they Top Tokyo Goal goods Gen transport Acc began  
           ‘They began transporting the goods to Tokyo.’
- b. Jon wa sono supai to sesshoku o kokoromita.  
           John Top the spy with contact Acc attempted  
           ‘John attempted to make contact with the spy.’

The *nani* test shows that the phrases without genitive marking (‘to Tokyo’, ‘with the spy’) are arguments of the verbal noun rather than of *hajimeru* or *kokoromiru*. Sentences (26a) and (26b), in which the NP headed by the verbal noun is replaced by *nani*, are unacceptable under the intended readings (unless used as an echo question). ((26b) is acceptable in the non-intended reading in which *sono supai-to* ‘with the spy’ is an adjunct of *kokoromiru* (i.e., the spy is a co-attempter of something).)

- (26) a. \*Karera wa Tookyoo e nani o hajime-mashi-ta ka.  
           they Top Tokyo Goal what Acc begin-Pol-Past Q  
           ‘What did they begin to Tokyo?’ (intended)
- b. \*Jon wa sono supai to nani o kokoromi-mashi-ta ka.  
           John Top the spy with what Acc attempt-Pol-Past Q  
           ‘What action with the spy did John attempt?’ (intended)

As in the *suru* construction, only verbal nouns allow verbal case-marking of their arguments with *hajimeru* and *kokoromiru*. This can be illustrated by the difference between the non-verbal noun *shukkoo-shiki* ‘departure ceremony’ and the verbal noun *shukkoo* ‘departure’, which I appealed to earlier (cf. (4) above). Consider (27a) and (27b).

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<sup>9</sup>The data presented in this section have been partially reported in my unpublished paper (Matsumoto 1988c).

- (27) a. Karera wa Koobe-koo {kara no/kara} shukkoo o hajimeru.  
 they Top Kobe-port {Src Gen/Src} departure Acc begin  
 'They will begin the departure from the port of Kobe.'
- b. Karera wa Koobe-koo{kara no/\*kara} shukkoo-shiki o hajimeru.  
 they Top Kobe-port {Src Gen/Src} dep.-ceremony Acc begin  
 'They will begin the ceremony of departure from the port of Kobe.'

(27) shows that *hajimeru* allows the the source phrase *Koobe-koo kara* 'from the port of Kobe' to occur outside the NP headed by a verbal noun (i.e., *shukkoo*) but not outside the NP headed by a non-verbal noun (i.e., *shukkoo-shiki*).

Like the light verb *suru*, the verbs *hajimeru* and *kokoromiru* also allow adjuncts of a verbal noun to appear outside the transparent NP. Such examples are easier to find than in the case of *suru*. Consider (28a) and (28b).

- (28) a. Sono taihuu wa hukuzatsu ni idoo o hajimeta.  
 the typhoon Top complicatedly movement Acc began  
 'The typhoon began to move in a complicated way.'
- b. Karera wa oohaba ni kourikakaku no nesage o kokoromita.  
 they Top substantially retail.price Gen lowering Acc attempted  
 'They attempted to make a substantial reduction in retail prices.'

The adverbs *hukuzatsu ni* 'in a complicated way' and *oohaba ni* 'substantially' in these examples are interpretable with respect to the verbal nouns (*idoo* 'movement' and *nesage* 'lowering of prices', respectively), but not with respect to *hajimeru* or *kokoromiru*. However, they appear without genitive marking.

These two verbs exhibit other properties that *suru* as a light verb exhibits. As in the case of *suru*, the subject argument of the verbal noun must appear outside the transparent NP.

- (29) a. \*Karera no Tookyoo e no busshi no yusoo o hajimeta.  
 they Gen Tokyo Goal Gen goods Gen transport Acc began  
 'They began to transport the goods to Tokyo.' (intended)
- b. \*Jon no sono supai to no sesshoku o kokoromita.  
 John Gen the spy with Gen contact Acc attempted  
 'John attempted to make a contact with the spy.' (intended)

The verbs *hajimeru* and *kokoromiru* also respect the same word order restrictions as *suru*. Non-subject arguments of a verbal noun cannot intervene between a verbal noun and these verbs, as in (30a) and (31a), while a subject can intervene with a partial loss of acceptability, as in (30b) and (31b).

- (30) a. \*Karera wa busshi no yusoo o Tookyoo e hajimeta.  
 they Top goods Gen transport Acc Tokyo Goal began  
 ‘They began to transport the goods to Tokyo.’ (intended)
- b. ?Tookyoo e busshi no yusoo o karera wa hajimeta.  
 Tokyo Goal goods Gen transport Acc they Top began  
 ‘They began to transport the goods to Tokyo.’ (intended)
- (31) a. \*Jon wa sesshoku o sono supai to kokoromita.  
 John Top contact Acc the spy with attempted  
 ‘John attempted to make a contact with the spy.’ (intended)
- b. ?Sono supai to sesshoku o Jon wa kokoromita.  
 the spy with contact Acc John Top attempted  
 ‘John attempted to make a contact with the spy.’ (intended)

Thus both *hajimeru* and *kokoromiru* have been seen to exhibit the same light verb properties as *suru*. The picture is slightly different as regards the exclusion of unaccusative verbal nouns. The verb *kokoromiru* does not accept an unaccusative verbal noun, but *hajimeru* does, as in (32).

- (32) a. Sono hoshi wa sugoi ookisa ni kakudai o {\*kokoromita/hajimeta}.  
 the star Top great size to expansion Acc attempted/began  
 ‘The star {\*attempted/began} to expand to a very big size.’
- b. Sono buttai wa Taiheiyoo ni rakka o {\*kokoromita/hajimeta}.  
 the object Top Pacific Goal fall Acc attempted / began  
 ‘The object {\*attempted/began} to fall to the Pacific.’

Thus, these two verbs exhibit the same light verb properties as does *suru*. An exception is the fact that *hajimeru* accepts an unaccusative verbal noun.

#### 4.2.2 Other Raising/Control Verbs

There are many other verbs which behave in the same way as *hajimeru* or *kokoromiru*. These verbs fall into several semantic classes. The first class of verbs considered here has aspectual meanings and includes *kurikaesu*

‘repeat’, *tsuzukeru* ‘continue’, *kaishi suru* ‘begin’, *shuuryoo suru* ‘finish’, *kanryoo suru* ‘complete’, *keizoku suru* ‘continue’ (cf. *hajimeru* ‘begin’). The light verb status of *tsuzukeru* (i.e., the lack of genitive marking on an argument of the verbal noun) is exemplified below.

- (33) Nihon wa Amerika e shisetsu no haken o tsuzuketa.  
 Japan Top America Goal envoy Gen dispatch Acc continued  
 ‘Japan continued to dispatch an envoy to America.’

The second class comprises various verbs of thinking and planning: *kuwadateru* ‘attempt’, *wasureru* ‘forget (to do)’, *kangaeru* ‘think (of)’, *nozomu* ‘desire’, *negau* ‘wish’, *mezasu* ‘aim at’, *keikaku suru* ‘plan’, *kettei suru* ‘decide’, *kiboo suru* ‘hope’, etc. (cf. *kokoromiru* ‘attempt’). Two of these verbs are exemplified in (34).

- (34) a. Jon wa Osaka kara Tookyoo e tenkin o nozonde iru.  
 John Top Osaka Src Tokyo Goal transference Acc desire Asp  
 ‘John desires to be transferred from Osaka to Tokyo.’  
 b. Jon wa ie ni renraku o wasureta.  
 John Top house Goal sending.message Acc forgot  
 ‘John forgot to send a message to his house.’

Third, certain verbs and nominal adjectives that indicate possibility also exhibit light verb properties. These include *dekiru* ‘can do’, *ari-uru* ‘be possible’, and *kanoo da* ‘be possible’. An example is the following. (Because *dekiru* is stative, the verbal noun is marked in the nominative.)

- (35) Jon wa Tookyoo e shucchoo ga dekiru.  
 John Top Tokyo Goal business.trip Nom can.do  
 ‘John can make a business trip to Tokyo.’

Fourth, some directive and permissive verbs can be used as light verbs. They include *meijiru* ‘order’, *gimuzukeru* ‘obligate’, *motomeru* ‘ask’, *yurusu* ‘allow’, *mitomeru* ‘permit’, and *kyoka suru* ‘permit’.

- (36) a. Keisatsu wa kare ni sho made shuttoo o meijita.  
 police Top he Dat station as.far.as appearance Acc ordered  
 ‘Police ordered him to appear at the police station.’  
 b. Jon wa Marii ni Osaka e (sura) shucchoo o  
 John Top Mary Dat Osaka Goal even business.trip Acc

mitome-nakat-ta  
 permit-Neg-Past

‘John did not permit Mary to make a business trip (even) to Osaka.’

Thus, there are many verbs in Japanese that behave like *suru*.<sup>10</sup>

Finally, one might note that there are cases of multiply embedded light verb constructions. Some of the light verbs above (e.g., *keikaku suru* ‘plan’) are periphrastic *suru* verbs. The verbal noun forming these incorporated *suru* verbs can simultaneously head the transparent NP of another light verb and take another transparent NP as its argument, thus producing a multiply embedded light verb construction. Some examples are given in (37). Though these sentences might be stylistically awkward, they are accepted by many speakers of Japanese, especially when the transferred argument occurs with some emphatic particle (e.g., *mo*).

- (37) a. Amerika wa    Sobieto kara (mo)    wokka no    yunyuu no  
          America Top   Soviet Src too       vodka Gen   import Gen  
          keikaku o hajime-ta.  
          plan Acc   begin-Past  
          ‘America began the planning of the import of vodka from the  
          Soviets (too).’
- b. Jon wa    Biru ni    Tookyoo e (mo) shiten no    idoo no  
          John Top   Bill Dat   Tokyo Goal too   branch Gen   move Gen  
          kaishi o meijita.  
          start Acc ordered  
          ‘John ordered Bill to start the move of the branch to Tokyo (too).’

In (37a), for example, the light verb *hajimeru* takes a transparent NP headed by *keikaku*, which in turn takes a transparent NP headed by *yunyuu*, with the Source argument of *yunyuu* (*Sobieto kara* ‘from the Soviets’) appearing outside the whole transparent NP. The NPs headed by *yunyuu* in (37a) and *idoo* in (37b) are marked in the genitive, since they appear under the NPs headed by *keikaku* and *kaishi*, respectively.

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<sup>10</sup>In addition to these verbs, the copula *da* can also function as a light verb, when it is attached to a verbal noun. Examples include the following.

- (i) Kyoo kara Jon wa    Tookyoo e    shucchoo da  
       today Src   John Top   Tokyo Goal   business.trip Cop  
       ‘John will be on a business trip to Tokyo from today on.’

One feature common to the various verbs exhibiting light verb properties is that they are all either raising or control verbs <sup>Δ</sup> they require the subject of their predicative complement to be either controlled or bound by one of their arguments. It appears that all raising and control verbs that take a predicative complement clause marked in the accusative case (with a *koto* complementizer or *no* nominalizer), and some that take a complement clause marked with *yoo ni*, can be used as light verbs. By contrast, those raising and control verbs subcategorizing for a *-te* participial verb or Renyookei adjective form (e.g., *naru* ‘become’ and *hoshii* ‘want’) cannot be used as light verbs. I will call this class of newly identified light verbs *raising and control light verbs* (though this should not be taken to mean that such verbs have incomplete argument structure, as G&M claim light verbs do).

Non-raising, non-control verbs cannot exhibit light verb properties. For example, verbs like *akirameru* ‘give up’, *enki suru* ‘postpone’, and *happyoo suru* ‘announce’ do not allow the arguments of a verbal noun to appear without genitive marking, as shown in (38).

- (38) Jon wa Tookyoo {\*e/e no} ryokoo o  
 John Top Tokyo Goal/Goal Gen trip Acc  
 {akirameta / enki shita / happyoo shita}.  
 gave.up / postponed / announced  
 ‘John {gave up / postponed / announced} a trip to Tokyo.’

The distinction between raising and control verbs is correlated with the possibility of appearance of unaccusative verbal nouns. The newly identified light verbs can be divided into two categories: those that accept unaccusative verbal nouns and those that do not. The former include *hajimeru*, *kurikaesu*, *tsuzukeru*, *kaishi suru*, *shuuryoo suru*, *kanoo-da*. The latter include *kokoromiru*, *kuwadateru*, *wasureru*, *kangaeru*, *nozomu*, *negau*, *mezasu*, *keikaku suru*, *kettei suru*, *kiboo suru*, *dekiru*, *meijiru*, *gimuzukeru*, *motomeru*, *yurusu*, *mitomeru*, *kyoka suru*. The former group can be identified as raising verbs, and the latter as control verbs, by the criteria like the idiom test proposed by Nishigauchi (1993).

#### 4.2.3 Raising/Control Verbs and Argument Transfer

Given that these raising and control verbs exhibit essentially the same light verb phenomena as *suru*, it would be natural to expect the Argument Transfer account to apply to these cases as well. However, the raising and control light verbs pose additional problems for the Argument Transfer account.

First, control light verbs pose a problem for the Argument Transfer account of obligatory subject transfer. Control verbs place semantic

restrictions on the controlling argument. For example, the subject of *kokoromiru* and the dative object of *meijiru* ‘order’ must be a volitional being. The controlling argument is therefore a thematic argument of the control verb and receives a thematic role from it. If a sentence with these verbs involves the transfer of the subject argument of the verbal noun, then the subject will receive two roles  $\Delta$  one from the control verb and the other from the verbal noun  $\Delta$  resulting in a violation of the Theta Criterion. Second, it is not clear how the Argument Transfer account and Burzio’s generalization can cope with the exclusion of unaccusative verbal nouns from control light verb constructions. Control verbs like *kuwadateru* do have an external argument on its own, and it can satisfy Burzio’s generalization even when no external role is transferred to them through Argument Transfer, and therefore unaccusative verbal nouns would not be excluded.

Both of these points suggest that it is difficult to accommodate G&M’s analysis, which presupposes a skeletal argument structure of a light verb, to those cases of raising and control “light” verbs, which are clearly not empty in meaning and have a non-skeletal argument structure.

### 4.3 A Proposal

#### 4.3.1 An Informal Analysis

How, then, are the light verb properties of raising and control light verbs to be accounted for? The key to the understanding of these properties is the recognition of the “light verb” constructions above as raising or control constructions.

##### 4.3.1.1 Light Verb Constructions as Raising/Control Constructions

In the proposed analysis, raising and control light verb constructions are simply raising and control constructions with the verbal noun representing the head of a predicative complement. Support for this analysis comes from the following binding possibility of *jibun*.

- (39) Keisatsu wa Yamada<sub>i</sub> ni jibun<sub>i</sub> no ie ni  
 police Top Yamada Dat self Gen house Goal  
 ichiban chikai keisatsusho made shuttoo o meijita.  
 most close police.station as.far.as appearance Acc ordered  
 ‘Police ordered Yamada to appear at the police station closest to his house.’

The possibility of this binding shows that the verbal noun in this sentence has a PRO subject, controlled by the dative object of *meijiru*.

A comparison with non-raising, non-control constructions makes it

clear that the verbal nouns in raising and control light verb constructions are the head of a predicative complement rather than an object. One difference between a predicative complement and an object is that the subject of a predicative complement is unexpressed and must be obligatorily controlled (“functionally controlled” in LFG terms); by contrast, the subject of an object NP might or might not be controlled (i.e., it might have an overt subject or a controlled subject), and if it is controlled at all, it can have a wide range of possible antecedents, like a pronoun (“anaphorically controlled” in LFG terms). In this regard, first consider (40a) and (40b), which involve a non-raising, non-control verb *enki suru*.

- (40) a. Jon wa [(Biru no) supai to no mikkai] o enki shita.  
 John Top Bill Gen spy with Gen secret.meeting Acc postponed  
 ‘John postponed {Bill’s / a} secret meeting with a spy.’
- b. Jon wa [Marii ga (katte ni) [supai to no  
 John Top Mary Nom selfishly spy with Gen  
 mikkai] o enki shita] to itta.  
 secret.meeting Acc postponed Comp said  
 ‘John said that Mary postponed a secret meeting with a spy  
 (without consulting him).’

*Enki suru* does not require the subject of the verbal noun to be controlled; it can be overtly expressed, as in (40a). When it is unexpressed, it can have a wide range of interpretation. In (40b), the subject of *mikkai* might be Mary, John, John and Mary (split antecedent), or someone outside the sentence.

In contrast, *kokoromiru* requires the subject of the verbal noun to be obligatorily controlled. Consider (41a) and (41b).

- (41) a. Jon wa supai to [(*\*Biru no*) mikkai] o kokoromita.  
 John Topspy with Bill Gen secret.meeting Acc attempted  
 ‘John attempted to meet secretly with a spy.’
- b. Jon wa [Marii ga supai to [mikkai] o  
 John TopMary Nom spy with secret.meeting Acc  
 kokoromita] to itta.  
 attempted Comp said  
 ‘John said that Mary attempted to meet secretly with a spy.’

As in (41a), *kokoromiru* does not allow an overt subject on the verbal noun (cf. the obligatoriness of subject “transfer” above), and the unexpressed subject must be interpreted as identical with the subject of *kokoromiru*. Note also that this is the only interpretation in (41b).<sup>11</sup>

#### 4.3.1.2 Light Verb Properties and Raising/Control Verbs

Given this raising/control analysis, all the light verb properties of raising and control “light” verbs can be treated on a par with parallel phenomena found in more familiar raising and control constructions.

The “transfer” of the arguments and adjuncts of the verbal noun in raising and control light verb constructions is essentially the same phenomenon as the displacement of phrases out of raising and control

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<sup>11</sup>The syntactic rather than semantic nature of the control phenomenon reported here can be confirmed by an examination of the verb *keikaku suru* ‘plan’. Like the English verb *plan*, *keikaku suru* subcategorizes for either a predicative complement (cf. *plan to hold a ceremony*) or an object NP (cf. *plan a ceremony*). In example (ia) *keikaku suru* is clearly a light verb because of the “transfer” of the goal argument, while (ib), in which all non-subject arguments of the verbal noun appear inside the NP, can be a case of this verb subcategorizing for an object NP. (Note that nothing prevents a verbal noun from being the head of an object NP.)

- (i) a. Jon wa Tookyoo e (\*Biru no) ryokoo o keikaku shite iru.  
       John Top Tokyo Goal Bill Gen trip Acc plan do Asp  
       ‘John is planning a (\*Bill’s) trip to Tokyo.’  
       b. Jon wa Tookyoo e no (Biru no) ryokoo o keikaku shite iru.  
       John Top Tokyo Goal Gen Bill Gen trip Acc plan do Asp  
       ‘John is planning a (Bill’s) trip to Tokyo.’

Control data show that this analysis is in fact correct. First, the traveler in (ia) cannot be overtly expressed and it must be John. By contrast, the traveler in (ib) can be expressed overtly, and it can be someone other than John. In addition, sentence (ii), in which (ib) is embedded, can be interpreted in the reading of travelers being John and Mary (split antecedent).

- (ii) Marii wa [Jon ga Tookyoo e no ryokoo o keikaku shite iru]  
       Mary Top John Nom Tokyo Goal Gen trip Acc plan do Asp  
       to itta.  
       Comp said  
       ‘Mary said that John was planning a trip to Tokyo.’

Thus, when “transfer” does not take place, as in (ib), the subject of a verbal noun is not obligatorily controlled (the NP is an object), but when “transfer” does occur, as in (ia), the subject is obligatorily controlled (the NP is a predicative complement). The fact that this difference can be found in one and the same verb shows that the distinction is not semantic but grammatical.

complements discussed in Chapter 3 (sec. 3.3.2). In that chapter I pointed out that the arguments and adjuncts of an XCOMP occurs as sisters to those of the main predicate. In light verb constructions, too, arguments and adjuncts of a predicative complement (headed by a verbal noun) occur outside the complement as sisters to the arguments and adjuncts of the main verb. The only difference between the raising and control light verb constructions and the clausal raising and control constructions in Chapter 3 above is the categorial difference of the predicative complement: the predicative complements of raising and control light verbs are NPs, while those of raising and control constructions in Chapter 3 are clauses. Therefore, raising and control light verb constructions show a difference in the presence/absence of genitive marking on the arguments of the embedded predicate, depending on whether they appear inside the predicative complement NP or outside. There is no such “visible” surface case-marking difference in sentences in which the predicative complement is a clause.

In this view, there is no transfer of arguments from the argument structure of a verbal noun to that of a light verb; arguments of a verbal noun remain as arguments of the verbal noun. Instead, what we have is a *syntactic* process (movement in GB) that allows a phrase in the predicative complement to occur outside it.

The account proposed here provides a natural explanation of why “subject transfer” is obligatory. As raising and control constructions, it is to be expected that the subject of the complement cannot occur overtly but is bound or controlled by an upper argument.

The exclusion of unaccusative verbal nouns from control (but not raising) light verb constructions is an outcome of the nature of these verbs. Control verbs place semantic restrictions on the controlling argument, and the controlled subject of an unaccusative verbal noun can be semantically incompatible with such requirements. In (32a) above, for example, the verb *kokoromiru* requires its subject to be a volitional being. The subject of the verbal noun *kakudai* is not compatible with this restriction. Raising verbs like *hajimeru*, on the other hand, raise the lower subject to the upstairs subject position and place no restrictions on it and therefore allow an unaccusative verbal noun to appear in the complement.

The view that a verbal noun represents the head of a predicative complement of the light verb also explains the word order requirement observed above. In 4.1.3. I noted that 1) no non-subject argument of a verbal noun can intervene between the verbal noun and *suru*, and 2) a subject can intervene between them with varying degrees of loss of acceptability. This is a special case of the general restriction on precedence order in raising and control constructions, which I discussed in 3.3.4.

In the present account, the verbal noun is the head of a predicative

complement though it is marked in the accusative. The accusative marking of a predicative complement is independently motivated in Japanese. In fact, many of the raising and control light verbs can also take as their predicative complement an accusative-marked clause with a *koto* or *no* complementizer; an example is *yurusu* ‘permit’ (cf. (19e) in Chapter 3).

Thus, the view that the above newly identified light verb constructions involve a raising or control verb and its predicative complement can explain all the phenomena of raising and control light verbs without resorting to any rules or mechanisms specific to the light verb constructions.

### 4.3.2 A Formal Account

The above analysis can be incorporated formally into the framework of LFG in the following way. As stated in Chapter 2 (sec. 2.1.3.1), the predicative complement of both a raising and a control predicate has the grammatical function of XCOMP, the subject of which is functionally controlled by some argument of the upper verb (Bresnan 1982b). The lexical forms of *kokoromiru* ‘attempt’ and *hajimeru* ‘begin’ can be represented as in (42). The associated roles are given below the lexical form.

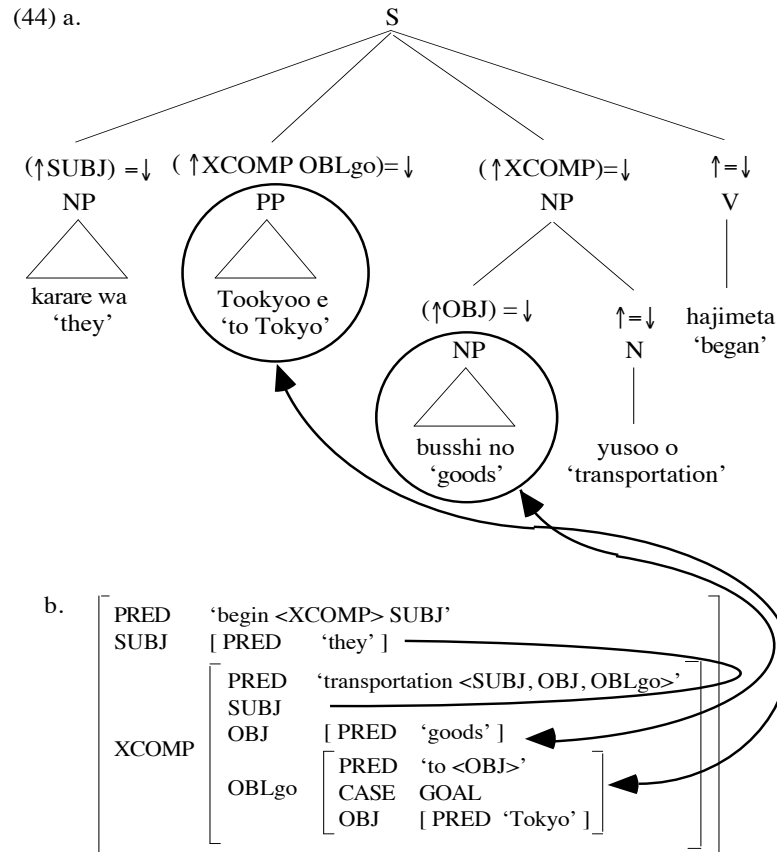
- (42) a. *kokoromiru* < SUBJ, XCOMP >  
                                   |                  |  
                                   agent          event  
       b. *hajimeru* <XCOMP> SUBJ  
                                   |  
                                   event

This difference in lexical forms explains the fact that *kokoromiru* and other control light verbs place semantic restrictions on their subject, ruling out sentences with a subject that is semantically incompatible with such restrictions, while raising light verbs do not.

The “transfer” of arguments and adjuncts of verbal nouns can be accounted for by a phrase structure rule of Japanese presented in Chapter 3 (sec. 3.3.3) and repeated here as (43a), together with an additional rule concerning the expansion of an NP in (43b). In the constructions discussed in Chapter 3, only an S appeared at the XCOMP node adjacent to V or A. In the light verb construction, by contrast, it is an NP that occurs at the XCOMP node.

- (43) a. S → XP\* {V, A}  
 (↑ XCOMP\* GF)=↓ ↑=↓
- b. NP → XP\* N  
 (↑ GF)=↓ ↑=↓

In the case of light verb constructions, rule (43a) directly generates a constituent structure in which arguments and adjuncts of a verbal noun occur immediately dominated by an S. Rule (43b) allows the alternative possibility of the arguments and adjuncts of the verbal noun occurring within an NP. The constituent structure of the light verb construction can be illustrated by (44a), which is the constituent structure of sentence (25a); the corresponding functional structure is given in (44b).



In (44a), one argument of XCOMP (i.e., OBJ) occurs within the predicative complement NP, while another (i.e., OBLgo) occurs outside it. The functional annotation on (44a) allows both of these to correspond to arguments of XCOMP in functional structure (44b), as indicated by the arrows. These alternative possibilities for the positioning of the arguments and adjuncts of XCOMP allowed by (43) thus make it possible for a phrase that could occur within the predicative complement NP also to occur outside

it without changing its grammatical function with respect to the predicate that governs it in functional structure.

Note here that the relationship between a “transferred” argument and its predicate is long-distance in constituent structure but local in functional structure—the transferred OBLgo argument is locally governed by the predicate ‘transportation’ in the embedded functional structure in (44b). Accordingly, the long-distance relationship between the transferred argument and its predicate in constituent structure does not lead to a violation of the local subcategorization requirements of the predicate, which are checked in functional structure by the Completeness and Coherence Conditions.

The formulation (43) above correctly predicts that detachment of a phrase from an NP headed by a verbal noun is not possible with non-raising, non-control verbs. Verbs like *enki suru* have lexical forms like (45).

- (45) *enki suru* < SUBJ, OBJ >  
                                   |          |  
                                  agent  theme

Since the theme argument of *enki suru* does not bear the function of an XCOMP, no phrase in it can be detached.

The case marking of the arguments of verbal nouns is also accounted for by a regular case-marking mechanism of LFG. In LFG each case marker and postposition has its own lexically specified properties, which must be compatible with the structural, functional, and/or semantic properties of the argument that it marks (see Bresnan 1982b, Zaenen & Maling 1984, Ishikawa 1985, Hong 1991, King 1995 for the development of this idea). For example, the postposition that regularly marks goal is lexically specified so that it occurs as the head of a PP whose functional structure is the value of OBLgo. Thus, the postposition *e* is lexically specified for the CASE value GOAL, and it correctly corresponds to the head of OBLgo function in (44b). Note that this holds whether the goal PP occurs inside or outside the predicative NP, as long as the functional annotations on the phrase structure rule (43a) permit the association of the goal phrase marked with *e* with the OBLgo function of an XCOMP predicate.

Genitive *no* marking must be compatible with its structural specification: a phrase must be marked with *no* when immediately dominated by an NP. Ishikawa (1985) treats this distribution of *no* marking in terms of the compatibility of the feature specification that *no* itself has and the specification introduced by the NP phrase structure rule. Slightly modifying his treatment, one can postulate that *no* has a lexical specification of ( $\downarrow$ NMod) = + (i.e., it is positively specified for nominal modification), and contributes this feature to the phrase it attaches to. The NP phrase

structure rule is now as given in (46). XP is annotated with a “constraining equation”, which checks the appropriateness of information coming from elsewhere. In this case the equation states that the NMod feature of an XP dominated by an NP must be positively specified elsewhere  $\vdash$  thus demanding a phrase marked with *no*.

$$(46) \quad \begin{array}{ccc} \text{NP} & \rightarrow & \text{XP}^* \quad \text{N} \\ & & (\uparrow \text{GF}) = \downarrow \quad \uparrow = \downarrow \\ & & (\downarrow \text{NMod}) =_{\text{c}} + \end{array}$$

This ensures that the NP *bussshi* ‘goods’ or PP *Tookyoo e* ‘to Tokyo’ in (44) must occur with *no* added if these phrases occur within the predicative NP.

The word-order restrictions on light verb constructions can also be captured by the two Precedence Rules annotated on the head of an S in (35) in Chapter 3 (sec. 3.3.4), restated here as (47).

- (47) a.  $(\uparrow(\text{GF} - \text{COMP})) < (\uparrow \text{XCOMP})$   
           (i.e., All functions other than a predicative complement must precede the predicative complement of the same predicate.)  
       b.  $(\uparrow \text{GF}) < \downarrow$   
           (i.e., Non-heads must precede their head.)

The first rule forces all the non-XCOMP arguments and adjuncts of the main predicate to precede the XCOMP, and the second rule forces the arguments and adjuncts of the predicate of an XCOMP to precede the predicate. As is the case with XCOMP constructions in general, rule (47b) must be fully satisfied, while the status of (47a) is a more subtle one, subject to individual variation.

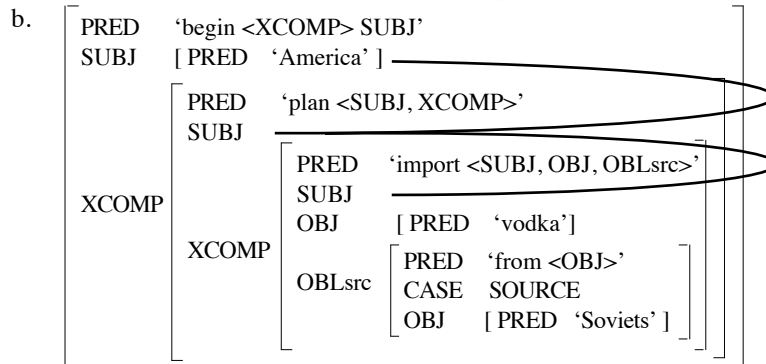
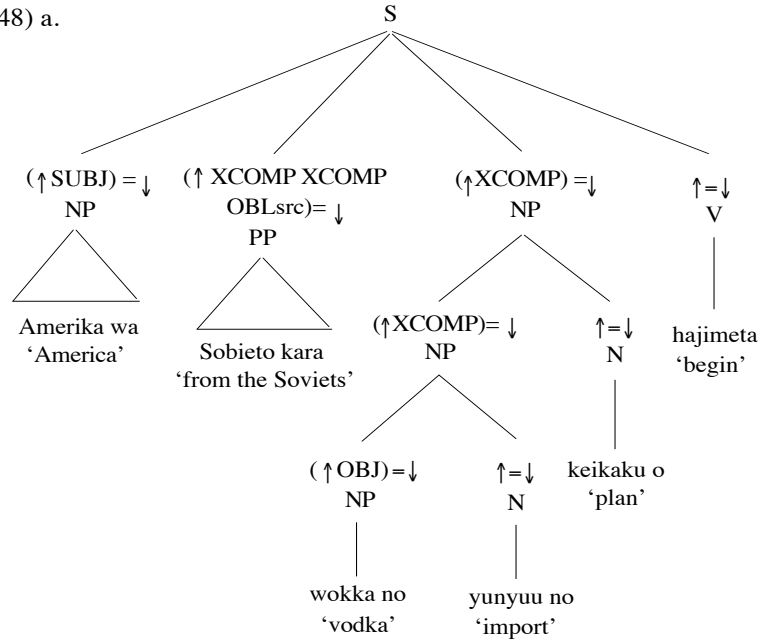
The phrase structure rules in (43) above also explain multiply embedded light verb constructions such as (37) above. The Kleene closure notation “XCOMP\*” in (43a) allows an argument and adjunct of a multiply embedded XCOMP to appear at the top S level. The constituent structure and functional structure of (37a) are (48a) and (48b).<sup>12</sup>

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<sup>12</sup>For those speakers who do not accept sentences like (37a) and (37b), (43a) is replaced by (i) below. This rule allows only those arguments and adjuncts in an immediately embedded XCOMP (as well as those of the main predicate) to appear at the top S level.

$$(i) \quad \begin{array}{ccc} \text{S} & \rightarrow & \text{XP}^* \quad \{V, A\} \\ & & (\uparrow(\text{XCOMP}) \text{GF}) = \downarrow \quad \uparrow = \downarrow \end{array}$$

(48) a.



The present account successfully copes with the problems that the Argument Transfer account could not handle. First, the “detachment” of phrases from the predicative complement NP expressed in the formulation in (43a) is not limited to arguments, and therefore the “transfer” of adjuncts creates no problem. Second, both unergative and unaccusative verbal nouns can occur in light verb constructions, with unaccusative verbal nouns excluded from control-type light verb constructions because of semantic incompatibility. Third, the obligatoriness of “subject transfer” follows from the assumption that the verbal noun is the head of an XCOMP.

### 4.3.3 The *Suru* Construction Revisited

The light verb phenomena of *suru*, too, can be accounted for in just the same way if one can analyze *suru* as a control verb. In this analysis, the so-called light verb *suru* will subcategorize for a thematic subject (associated with the agent role in the argument structure) and a predicative complement (associated with an event). The lexical form of *suru* in this analysis is represented in (49).

- (49) *suru* <SUBJ, XCOMP>  
           |          |  
       agent      event

There is independent evidence for the control use of *suru*. One example is (50), in which *suru* has quite a general meaning, as in the light verb construction. (Note also that in 3.3.1 two uses of *suru* as a control verb were considered, in which this verb has a specific meaning of ‘try’ and ‘make’.)

- (50) Kare wa [PRO jibun no kangae o hyoogen *suru* koto] o  
       he Top self Gent hought Acc express do Comp Acc  
       shi-nai.  
       do-Neg  
       ‘He does not express his thoughts.’

The verb *suru* can be used with a verbal noun and with this kind of *koto* complement clause at the same time, as shown in (51). This suggests that *suru* in the light verb construction is identical with *suru* with a *koto* complement.

- (51) Kare wa soko ni iku koto nomi narazu,  
       he Top there Goal go Comp only Neg  
       soko ni busshi no yuusoo sura shi-nakat-ta  
       there Goal goods Gen shipping even do-Neg-Past  
       ‘Not only did he not go there but he did not even ship any goods there.’

In this analysis, the exclusion of unaccusative verbal nouns in the *suru* construction can be attributed to the agentivity restriction that this verb inherently imposes on its subject (cf. Miyagawa 1987a, Terada 1990); unaccusative verbal nouns subcategorize for a non-agentive theme as their subject, which is incompatible with the non-agentivity restriction of *suru*. One advantage of this account is that it also predicts the unnaturalness of transitive verbal nouns with a non-agentive subject in the *suru* construction, which we observed in (22) above.

This account is also consistent with the way the double-*o* constraint

works with respect to the light verb *suru* construction. In 4.1.4.3 I pointed out that the double-*o* constraint involved in the light verb construction is the surface double-*o* constraint, not the deep double-*o* constraint prohibiting two direct objects governed by the same predicate. Given that the verbal noun is a predicative complement governed by *suru* and the other (potentially) accusative NP is an object of a verbal noun, it is expected that there is no violation of the deep double-*o* constraint.

The present analysis explains the properties of the *suru* construction without appealing to any mechanism specific to *suru*. In addition, the problems with the Argument Transfer account that I pointed out with respect to *suru* in 4.1.4 above are avoided: adjuncts can be transferred; obligatory subject transfer can be explained without imposing empirically false restrictions; arguments can occur inside or outside the complement NP without the strict thematic restriction that G&M posit; and the word order restriction is explained.<sup>13</sup>

In this analysis, the “light” verb *suru* differs from heavy *suru* in the grammatical function of its non-subject argument. The lexical form of heavy *suru* is given in (52).

- (52) *suru* <SUBJ, OBJ, (OBJrecip) >  
                   |          |          |  
                  agent  theme  recipient

Here, the accusative NP is an OBJ, not an XCOMP. The phrase structure rule (43a) does not allow any detachment of a phrase out of an OBJ, and therefore no phrase can be detached from the object NP of heavy *suru*.

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<sup>13</sup>The verb *suru* differs from most of raising/control light verbs in that it can form an “incorporated” periphrastic verb form. This might suggest that *suru* has some closer relationship with its accompanying verbal noun than do most of raising/control light verbs. However, the fact that a verb can be used in a periphrastic verb form does not mean that it cannot also be used as an independent control verb. The verb *dekiru* is another example of a control light verb that has both these uses. In (ia) *dekiru* is used as a part of a periphrastic verb, while in (ib) it is used as a control verb.

- (i) a. Jon wa soko ni shuppatsu dekiru.  
       John Top there Goal departure can.do  
       ‘John can depart for the place.’  
       b. Jon wa [PRO soko ni shuppatsu suru koto] ga dekiru.  
       John Top there Goal departure do Comp Nom can.do  
       ‘John can depart for the place.’

In a recent paper, Uchida & Nakayama (1993) argue that the light verb *suru* is in fact no different from heavy *suru*. They claim that the recipient NP ‘the villagers’ in (53) is selected when *keikoku o* and *suru* occur together, in just the same way as heavy *suru* can select a recipient NP when it occurs together with a certain type of object NP, as in (15) above.

- (53) Jon wa murabitotachi ni [ookami ga kuru] to no  
 John Top villagers Dat wolf Nom come Comp Gen  
 keikoku o shita.  
 warning Acc did  
 ‘John warned the villagers that a wolf was coming.’

This analysis might work for cases like (53), in which a recipient argument occurs in verbal case marking—the only type that Uchida & Nakayama consider. It is not clear how this account could explain verbal case marking of an argument other than a recipient goal (i.e., an argument not subcategorized by heavy *suru*). In my analysis, a sentence like (53) can be assigned either of two structures. In one case it is a light verb construction, with a recipient argument of *keikoku* ‘warning’ occurring outside the NP; in the other it is a heavy *suru* construction, with a recipient argument licensed by *suru*.

#### 4.4 More on Verbal Nouns and Case Marking

In this section, I will further discuss certain assumptions made in the present account concerning the nature of verbal nouns and case marking in Japanese.

##### 4.4.1 Grammatical Functions of the Arguments of Verbal Nouns

The account of light verb phenomena proposed in this paper presupposes that a verbal noun governs the grammatical function of SUBJ as one of its arguments, since only those missing arguments having the function of SUBJ can be functionally controlled. This assumption requires justification, especially in view of recent studies on English deverbal nouns.

Studies on English “process deverbal nouns” or “complex event nouns” (Grimshaw 1990) have suggested that such nouns have an argument structure identical or at least similar to that of the corresponding verbs, but that the syntactic nature of the arguments of this kind of noun differs from that of the arguments of a verb (see Grimshaw 1990, Rappaport 1983, Zubizarreta 1987, etc.). In LFG, it has been suggested that such differences can be captured by the difference in the grammatical functions that arguments bear in an S and in an NP (Rappaport 1983)<sup>4</sup> namely, English deverbal nouns govern grammatical functions such as POSS and OBL<sup>th</sup> (as

in the case of *examination*, for instance) rather than SUBJ and OBJ (as in the case of *examine*). Grimshaw (1990) has further argued that the possessive (subject) NP in a deverbal NP is not even an argument but an adjunct. She assumes that this is also true of Japanese verbal nouns (Grimshaw 1990:112).

However, Japanese verbal nouns are different from English deverbal nouns in this regard. Japanese verbal nouns govern “verbal” grammatical functions—i.e., they govern the same grammatical functions as their corresponding verbs (Saiki 1987, Iida 1987). This point has been discussed in relation to sentences like (54).

- (54) [Jon ga koojoo o shisatsu-chuu] ni, jiko ga okotta.  
 John Nom factory Accinspection-middle in accident Nom occurred  
 ‘An accident occurred while John was inspecting the factory.’

As this sentence shows, arguments of a verbal noun can appear without genitive marking when the verbal noun takes an aspectual suffix such as *-go* ‘after’ and *-chuu* ‘in the middle of’, without any verb occurring in the subordinate structure (Saiki 1987, Iida 1987, Miyagawa 1990, Tsujimura 1992a). In fact, a verbal noun in this construction appears to assign a theta role and case to its arguments just like a verb. Iida (1987) and Tsujimura (1992a) argue that the bracketed chunk in (54) is an S. I will assume this to be correct (see the next section for evidence), and will therefore use the term *sentential verbal noun construction* to refer to this construction.<sup>14</sup>

Unlike the subject of an English deverbal noun (cf. Grimshaw 1990),

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<sup>14</sup>Shibatani & Kageyama (1988) note that verbal nouns can also assign verbal case marking when they are followed by *no* and a temporal noun, as in (ia), which might seem similar to the kind of sentence under discussion here. In fact, however, the noun that follows *no* does not have to be temporal, as shown in (ib).

- (i) a. [Sensei ga Tookyoo ni shuppatsu no] sai, ...  
 teacher Nom Tokyo Goal departure Cop occasion  
 ‘on the occasion of the teacher’s departure to Tokyo, ...’  
 b. [kyoo Tookyoo ni go-shuppatsu no] kata  
 today Tokyo Goal Hon-departure Cop person  
 ‘the person who departs for Tokyo today’

The grammaticality of (ib) suggests that the *no* in these cases is a copula, and the bracketed chunks in (ia) and (ib) are relative clauses modifying the nouns *sai* ‘occasion’ and *kata* ‘person’, respectively. See footnote 10 for a copula functioning as a light predicate.

the subject of a verbal noun in a sentential verbal noun construction is grammatically obligatory (i.e., its deletion is governed only by pragmatics), suggesting that it is an argument. Furthermore, as argued by Iida (1987), such a subject has the full set of properties of a grammatical subject. First, it can be the antecedent of the reflexive *jibun*.

- (55) Jon<sub>i</sub> ga [jibun<sub>i</sub> ga keiei shite iru] koojoo o  
 John Nom self Nom manage Asp factory Acc  
 shisatsu-chuu ni, jiko ga okotta.  
 inspection-middle-in accident Nom occurred  
 ‘An accident occurred while John was inspecting the factory he managed.’

Second, subject honorification is possible.

- (56) Sensei ga sono koojoo o go-shisatsu-chuu ni, ...  
 teacher Nom the factory Acc Hon-inspection-middle-in  
 ‘While the teacher is inspecting the factory, ...’

Third, it can control the missing subject of an adverbial clause. (57a) involves a *nagara*-clause, and (57b), a purposive *ni*-clause.

- (57) a. Jon ga [PRO tabako o sui-nagara]  
 John Nom cigarette Acc smoke-while  
 koojoo o shisatsu-chuu ni, ...  
 factory Acc inspection-middle-in  
 ‘while John was inspecting the factory, smoking a cigarette, ...’  
 b. Jon ga [PRO eiga o mi ni] gaishutsu-chuu ni, ...  
 John Nom movie Acc see Pur going.out-middle in  
 ‘while John was out to see a movie, ...’

Note that the controller in these examples is clearly an individual and not an event, unlike what some have claimed to be the case with the control of a purposive clause in passive sentences and nominals in English (Grimshaw 1990, Lasnik 1988, Williams 1985, cf. Jaeggli 1986, Roeper 1987).

Finally, the subject of a verbal noun can itself be controlled by an upper subject. For example, a verbal noun can occur in the purposive construction,

with its subject obligatorily controlled by an upper subject (Iida 1987).<sup>15</sup>

- (58) Jon wa Tookyoo e [PRO sono koojoo o shisatsu] ni itta.  
 John Top Tokyo Goal the factory Acc inspection Pur went  
 'John went to Hokkaido to inspect the factory.'

Thus, verbal nouns can indeed govern verbal grammatical functions such as SUBJ. There is therefore nothing unreasonable in the assumption that the subject of the complement NP in the light verb construction is functionally controlled.

It should be noted that verbal nouns are the *only* nouns that can govern the function of SUBJ (Saiki 1987). The subject properties observed above are not found with non-verbal (non-process) nouns, such as *shukkoo-shiki* 'departure ceremony'. Although it is possible to modify this noun by an NP representing a departing person, this NP is not obligatory, suggesting that it is not a subject. In addition, such an NP representing the departing persons in (59) cannot function as a natural antecedent of *jibun*, or as an obligatory controller of a *nagara*-clause. (In (59b) the subject of *kinisuru* 'worry' is optionally controlled and does not have to be coreferential with the departing people.)

- (59) a. ?Jon-tachi; no [jibun-tachi; no minato] kara no shukkoo-shiki  
 John-Pl Gen self-Pl Gen port Src Gen dept.-ceremony  
 'the ceremony of the departure of John's group from their port'  
 b. [ame o kinishi-nagara] no Jon-tachi no shukkoo-shiki  
 rain Acc worry-while Gen John-Pl Gen departure-ceremony  
 'the ceremony of the departure of John's group during which  
 people worried about the rain.'

Given this fact, the present account provides a natural explanation of why only verbal nouns may appear in the light verb construction. Since verbal nouns are the only nouns that can govern the function of SUBJ, only

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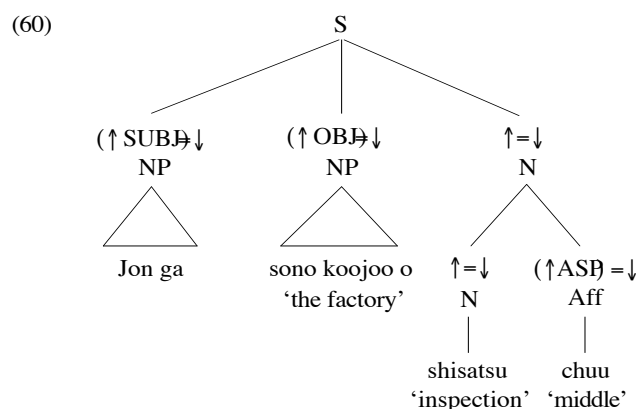
<sup>15</sup>In the following example, the verbal noun *koonyuu* 'purchase' is used as the head of a predicative complement of *itadaku* 'receive', which is the humble form of *morau* 'receive' (cf. the *morau* construction in Chapter 3). In this case, too, the subject of a verbal noun is controlled by a dative argument of the main predicate.

- (i) Wareware wa sensei ni sono hon o go-koonyuu itadaita.  
 we Top teacher Dat the book Acc Hon-purchase received  
 'We received the honor of the teacher purchasing the book (from us).'

they can be the head of an XCOMP, which requires a controlled subject.

#### 4.4.2 An Alternative Account of Light Verb Phenomena

Verbal case marking in the sentential verbal noun constructions like (54) raises the possibility of an alternative account of the absence of genitive marking on “transferred” arguments in the light verb constructions. I have been assuming that the bracketed chunk in (54) above is an S. Given the above discussion of the grammatical functions of the arguments appearing in this construction, the annotated constituent structure of the sentential verbal noun construction in (54) is as shown in (60) below.



This means that a verbal noun can occur in place of V or A in the phrase structure rule (43a) above (when the verbal noun is suffixed by an aspectual suffix).

An alternative possibility is that the structure given in (60) is in fact an NP rather than an S. This alternative analysis, if correct, would imply that a verbal noun could allow the absence of genitive marking within the NP of which it is the head. In that case, there is no reason that the arguments and adjuncts of a verbal noun should not be able to assume verbal case marking even within a predicative complement NP. One would therefore not have to assume that they occur outside the predicative complement NP (cf. Sells 1989).

However, this alternative account of case marking in the light verb constructions cannot be maintained. One piece of evidence against verbal case marking within an NP comes from the restrictions on the occurrence of such case marking. The alternative view cannot explain why *only* light verbs should allow the absence of genitive marking on the arguments and adjuncts of a verbal noun. If verbal nouns simply allowed their arguments to appear without a genitive within any sort of NP, this should also hold true

when the verbal noun was the head of the object NP of a verb such as *enki suru*. But this is not the case.

Furthermore, a close examination of the sentential verbal noun construction reveals that the structure given in (60) is indeed an S, and therefore this construction provides no evidence for genitiveless case marking within an NP. The clearest evidence for this comes from adverbial modification (Iida 1987). In (61), for example, the adverb *tetteiteki-ni* ‘thoroughly’ can modify the verbal noun *soosa* ‘search’. The nominal adjective *tetteiteki-na* ‘thorough’ in contrast cannot be used.<sup>16</sup>

<sup>16</sup>Sells (1989), Dubinsky (1990), Miyagawa (1990), and Tsujimura (1992a) have noted some examples of “split case marking” in sentential verbal noun constructions. Examples include (i). (In my judgment (i) is not fully acceptable.)

- (i) ?Jon ga musen de kokumushoo toangoobun no  
 John Nom radio Inst State.Dept with coded.message Gen  
 kooshin-chuu ni denpa-boogai ga okotta.  
 communication-middle in radio-interference Nom happened  
 ‘Radio interference occurred while John was in the midst of exchanging coded messages with the State Department by radio.’

This kind of example might suggest that the verbal noun is not directly dominated by an S in this construction but is mediated by an NP node. Alternatively, examples like (i) have different sources, given that the split case marking is limited in some peculiar ways. First, it is allowed only when the verbal noun is suffixed by *-chuu*. It is not possible, for example, if the verbal noun is followed by *-go* ‘after’.

- (ii) Karera {no/\*ga} Koobe-koo kara no shukkoo-go (ni), Jon wa ...  
 they {Gen/Nom} Kobe-port Src Gen departure-after in John Top  
 ‘After they departed from the port of Kobe, John ...’

Nor is the split case marking possible when *-chuu* is followed by something other than *ni*:

- (iii) Iku nara Biruga angooobun {o/?no} kaidoku-chuu ga ii.  
 go if Bill Nom coded.message {Acc/Gen} decoding-middle Nom good  
 ‘If you go (at all), the time during which Bill is decoding a coded message would be good.’

One possibility of analysis is that *ni* in (i) is a copula, and that the source of the embedded clause in (i) is (iv) below. (Note that *-go* could not be followed by a copula in a sentence analogous to (iv).)

- (iv) Jon wa musen de kokumushoo to angooobun no  
 John Top radio Inst State.Dept with coded.message Gen  
 kooshin-chuu da.  
 communication-middle Cop  
 ‘John is in the middle of exchanging coded messages with the State Department by radio.’

- (61) keisatsu ga sono ie o {tetteiteki-ni/\*tetteiteki-na}  
 police Nom the house Acc thoroughly / thorough  
 soosa-chuu ni ...  
 search-middle-in  
 ‘while the police thoroughly search(ed) the house, ...’

One question that naturally arises here is why light verb constructions and the sentential verbal noun construction should be similar in that both allow verbal case marking of the arguments of a verbal noun (though not in the same way). This similarity results from the functional nature of verbal nouns. Verbal nouns are the only nouns that can govern verbal grammatical functions such as SUBJ (Iida 1987, Saiki 1987). As such they can be the head of an S (as in the sentential verbal noun construction) or an XCOMP (as in light verb constructions). Given the phrase structure rule (43a) above, only arguments of the head of an S or an XCOMP can be immediately dominated by an S and be verbally case marked.

Thus, the similarities between the two constructions can be attributed to the functional nature of verbal nouns, and the differences can be attributed to the structural differences of the two constructions.

## 4.5 Conclusion

In this chapter, I have shown that the Argument Transfer account cannot adequately explain the properties of Japanese light verb constructions. I have shown this by examining both *suru* and a newly identified class of raising and control light verbs, such as *hajimeru* ‘begin’ and *kokoromiru* ‘attempt’, which I showed also allow the arguments of a verbal noun to appear without genitive marking.

Instead, I proposed a syntactic analysis of “transfer” in these raising and control light verb constructions. In this analysis these constructions in

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Note that *-chuu ni* can also be suffixed to a non-verbal noun, and in this case too it has a corresponding *-chuu da* form.

- (v) Boku no daigaku ga kimatsu-shiken-chuu ni kare no daigaku wa ...  
 I Gen college Nom final-exams-middle he Gen college Top  
 ‘While my college was still in the middle of final exams, his college ...’
- (vi) Boku no daigaku wa kimatsu-shiken-chuu da.  
 I Gen college Top final-exams-middle Cop  
 ‘My college is in the middle of final exams.’

fact involve two independent predicates, the verbal noun representing the head of the predicative complement of a raising or control verb, whose other argument controls or binds the missing subject of the complement. This analysis can also be extended to *suru*, which functions as a control verb.

This account avoids the problems that I pointed out with respect to the Argument Transfer account. The present account is also superior to the Argument Transfer account in terms of descriptive simplicity, since it does not require any rule or mechanism specifically designed for light verbs. In this sense it is a more desirable solution.

In G&M's account, a light verb and its accompanying verbal noun have argument structures that are not fully independent, and the Noun + Verb complex is listed as a whole in a derived lexical entry. In this respect the sequence is in a sense one word. However, the present analysis suggests that a verbal noun and a light verb are two fully independent words at all levels, c-, f- and a-structure. The sequence of a verbal noun and a light verb is therefore not a complex predicate at all as the term is defined in this book.

## CHAPTER 5

### Desiderative Predicates

In this chapter I will discuss the syntactic properties of desiderative predicates with the suffix *-ta(-i)*. This morpheme is suffixed to a base verb and forms an adjective, as in *yomi-ta(-i)* ‘read-want’. The resulting desiderative predicate as a whole is morphologically a single word. It is not possible to separate the two morphemes by inserting a particle, or coordinate only the base verbs, etc. *V-ta(-i)* can also participate in further morphological word formation (e.g., *mise-ta-gari-ya* (show-want-Vbz-person) ‘a person who wants to show something’; see 5.2.1 below for the verbalizer *-gar(-u)*).

In spite of this morphological one-word status, sentences with a desiderative predicate have been claimed to have a complex structure at some abstract level of representation (e.g., Inoue 1976a, Shibatani 1978, Kuno 1983). Kuno (1983), for example, treats *-ta(-i)* as a “transitive” Deep Structure predicate; it creates a biclausal control-type Deep Structure, which is reduced to a monoclausal Surface Structure by Predicate Raising and Tree Pruning. In LFG, this idea has been recast as the desiderative morpheme creating a biclausal functional structure and a monoclausal constituent structure (Ishikawa 1985).

In this chapter, I argue that the desiderative morpheme *-ta(-i)* is in fact ambiguous. It can take a full syntactic complement (XCOMP) in f-structure, but it can also constitute a single predicate with its base verb in f-structure. Building on the analysis proposed, I will also discuss alternative analyses involving restructuring (Sugioka 1984) and Incorporation (Inoue 1989a, b). The nature of the nominative case on the object of stative predicates will also be discussed.

#### 5.1 The Two Types of Desiderative Predicate

The major claim of this chapter is, as mentioned above, that there are two types of desiderative predicate. The two types that I would like to establish are correlated with the difference in the case marking of the base object when the base verb is transitive. This is exemplified in (1).

- (1) a. Boku wa hon o yomi-tai.  
 I Top book Acc read-want  
 'I want to read a book.'
- b. Boku wa hon ga yomi-tai.  
 I Top book Nom read-want  
 'I want to read a book.'

As (1) shows, the object argument of the base verb can be marked either in the accusative (as is normally true of the object of a non-stative predicate in Japanese) or in the nominative (as is true of the object of a stative predicate). I will call transitive desiderative predicates of the former type *the accusative-marking desiderative predicates*, and the latter, *nominative-marking desiderative predicates*.

I argue that these two types of desiderative predicate are functionally different. Desiderative sentences with an accusative object map a biclausal argument structure onto an equi type biclausal functional structure. That is, (1a) has the argument structure of (2a) and the functional structure of (2b).

- (2) a. 
$$\left[ \begin{array}{l} \text{REL} \quad \text{'want <EXPERIENCER, EVENT>'} \\ \text{EXPERIENCER} \quad [ \text{REL} \quad \text{'I'} ] \\ \text{EVENT} \quad \left[ \begin{array}{l} \text{REL} \quad \text{'read <AGENT, PATIENT>'} \\ \text{AGENT} \quad \text{PATIENT} \quad [ \text{REL} \quad \text{'book'} ] \end{array} \right] \end{array} \right]$$
- b. 
$$\left[ \begin{array}{l} \text{PRED} \quad \text{'want <SUBJ, XCOMP>'} \\ \text{SUBJ} \quad [ \text{PRED} \quad \text{'I'} ] \\ \text{XCOMP} \quad \left[ \begin{array}{l} \text{PRED} \quad \text{'read <SUBJ, OBJ>'} \\ \text{SUBJ} \quad \text{OBJ} \quad [ \text{PRED} \quad \text{'book'} ] \end{array} \right] \end{array} \right]$$

By contrast, desiderative sentences with a nominative object map a biclausal a-structure onto a monoclausal f-structure. The proposed a-structure and f-structure for (1b) are as follows.

- (3) a. 
$$\left[ \begin{array}{l} \text{REL} \quad \text{'want <EXPERIENCER, SUBEVENT>'} \\ \text{EXPERIENCER} \quad [ \text{REL} \quad \text{'I'} ] \\ \text{SUBEVENT} \quad \left[ \begin{array}{l} \text{REL} \quad \text{'read <AGENT, PATIENT>'} \\ \text{AGENT} \quad \text{PATIENT} \quad [ \text{REL} \quad \text{'book'} ] \end{array} \right] \end{array} \right]$$

- b. 
$$\left[ \begin{array}{ll} \text{PRED} & \text{'want-to-read <SUBJ, OBJ>'} \\ \text{SUBJ} & [ \text{PRED} \text{ 'I'} ] \\ \text{OBJ} & [ \text{PRED} \text{ 'book'} ] \end{array} \right]$$

Instead of EVENT in (2a), a-structure (3a) has a SUBEVENT argument (see sec. 2.1.3.2). Due to the transparency of a SUBEVENT argument for the purpose of mapping, the PATIENT of the lower structure is mapped into the same f-structure as the upper EXPERIENCER argument.

Desiderative predicates with an intransitive base verb should similarly be classified into these two types. As will be seen below, however, it is difficult to test this functional complexity difference when the base verb is intransitive. In the following, I will mainly discuss desiderative predicates with a transitive base.

## 5.2 Functional Structures of Desiderative Sentences

### 5.2.1 Passivization

One test for the functional complexity of a desiderative predicate is passivizability of the whole desiderative predicate. There are two major problems in applying this test. One is that desiderative predicates are adjectives, and therefore they cannot be passivized by themselves. Even if they can be passivized, there is another problem: how to tell whether a given passive sentence is the passive of a nominative-marking or an accusative-marking desiderative, given that the nominative/accusative case-marking difference is gone, once the object becomes the subject of a passive.

A solution to the first problem is to consider whether the verbalized desiderative forms with *-ta-gar(-u)* 'show signs of wanting' can be passivized. The nature of this verbalizing morpheme *-gar* must be carefully understood in order to see how passivization applies to verbalized desideratives. This morpheme can be attached to adjectives that denote the mental state of a person, and forms a non-stative verb meaning 'show signs of being ...'. For example, it can be suffixed to adjectives like *hoshi(-i)* 'want' in (4b) and *urayamashi(-i)* 'envious' in (5b) (see Abe 1981, Sugioka 1984). Note that the objects of the base adjectives obligatorily occur in the nominative as in (4a) and (5a), like the objects of other simple stative predicates, but with the verbalized forms the objects obligatorily occur in the accusative, as in (4b) and (5b). (I will come back to this case marking pattern in 5.5 below.)

- (4) a. Boku wa sono hon {ga/\*o} hoshikat-ta.  
 I Top the book Nom/Acc want-Past  
 'I wanted the book.'
- b. Jon wa sono hon {\*ga/o} hoshi-gat-ta.  
 John Top the book Nom/Acc want-Vbz-Past  
 'John wanted the book.'
- (5) a. Boku wa Hanako {ga/\*o} urayamashikat-ta.  
 I Top Hanako Nom/Acc envious-Past  
 'I was envious of Hanako.'
- b. Jon wa Hanako {\*ga/o} urayamashi-gat-ta.  
 John Top Hanako Nom/Acc envious-Vbz-Past  
 'John was envious of Hanako.'

Due to a certain point-of-view constraint with which I will not concern myself here (see Kuno & Kaburaki 1977, Ohye 1980, etc.), mental state adjectives such as *hoshi(-i)* and *urayamashi(-i)* typically take a first person subject, while the verbalized forms typically take a non-first person subject.

These verbalized *-gar* predicates can undergo passivization, as shown in (6) (Sugioka 1984:150).

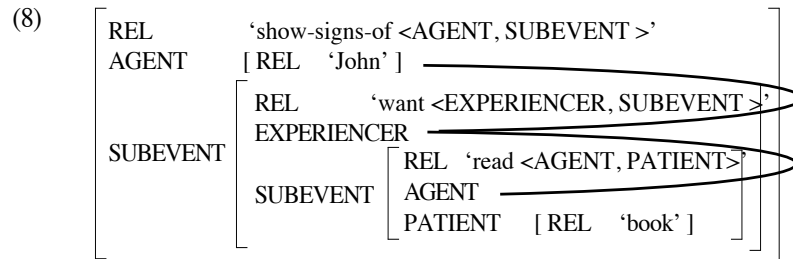
- (6) a. Sono hon wa minna ni hoshi-gar-arete iru.  
 the book Top all by want-Vbz-Pass Asp  
 'The book is desired by everyone.'
- b. Hanako wa minna ni urayamashi-gar-arete iru.  
 Hanako Top all by envious-Vbz-Pass Asp  
 'Hanako was envied by everyone.'

This means that the verbalizer *-gar* subcategorizes for a SUBEVENT, and therefore the whole complex predicate can be passivized and the object of the adjective can be the subject of the passive.

Now consider the verbalized desiderative predicate in (7). Note that the object NP of such a predicate must be marked in the accusative, as in the case of the verbalized stative predicates above in (4b) and (5b).

- (7) Jon wa hon {\*ga/o} yomi-ta-gatte i-ta.  
 John Top book Nom/Acc read-want-Vbz Asp-Past  
 'John wanted to read the book.' ('John showed the signs of wanting to read the book.')

The above observation about the argument structure of *-gar* (i.e., it subcategorizes for a SUBEVENT) yields the following predictions about the passivizability of verbalized desiderative predicates. Since *-gar* takes a SUBEVENT complement in argument structure, an argument of the base verb can be affected by passivization if *-ta(-i)* itself also selects a SUBEVENT complement. That is, if the argument structure of a verbalized desiderative predicate is like (8) below, with both *-gar* and *-ta(-i)* subcategorizing for a SUBEVENT, then passivization applied to this complex argument structure as a whole should make the PATIENT in the innermost argument structure into the subject of the passive. By contrast, if *-ta(-i)* involves an EVENT (rather than a SUBEVENT), then passivization of the whole desiderative predicate should not be able to make the PATIENT into a subject.



In this regard, Sugioka (1984) notes that sentence (9a) cannot be passivized, as shown in (9b).

- (9) a. Taro wa Hanako o sasoi-ta-gatte iru.  
 Taro Top Hanako Acc ask.out-want-Vbz Asp  
 'Taro wants to ask Hanako out (e.g. for a date).'

- b. \*Hanako wa Taro ni sasoi-ta-ga-rarete iru.  
 Hanako Top Taro by ask.out-want-Vbz-Pass Asp

Here the question arises of how to tell whether (9b) is the passive of a verbalized accusative-marking desiderative predicate or a verbalized nominative-marking desiderative predicate (cf. the second of the two problems posed at the beginning of this section). The solution to this question lies in the difference in the kinds of verbs that can be used in the two types of desiderative predicates.

There is a certain semantic constraint on the kind of verb that can be used in a nominative-marking desiderative predicate. Consider the sentences in (10).

- (10) a. Boku wa sono hon {ga/o} {yomi-tai / kai-tai / mi-tai}.  
 I Top the book Nom/Acc read-want / buy-want / look-want  
 'I want to {read / buy / look at} the book.'
- b. Boku wa kanojo {??ga/o} {sasoi-tai / tasuke-tai / nagusame-tai}.  
 I Top she Nom/Acc ask.out-want/help-want/console-want  
 'I want to {ask out / help / console} her.'
- c. Boku wa kare {\*ga/o} machi-tai.  
 I Top he Nom/Acc wait-want  
 'I want to wait for him.'
- d. Boku wa Biru ni purezento {?ga/o} {watashi-tai / age-tai}.  
 I Top Bill Dat present Nom/Acc hand-want / give-want  
 'I want to give a present to Bill.'

While all of these desiderative predicates can take an accusative object, only some can take a nominative object. It appears that those verbs whose meaning allows the object of the base verb to be the target of the desire to obtain something (e.g., wanting to buy a book means wanting the book itself) sound better with a nominative object than do other verbs (cf. (10a) versus (10b), (10c), (10d)). The reason for the unnaturalness of nominative object marking with ditransitive verbs (cf. (10d); see Abe 1981) can also be attributed to this factor.

Nominative-marking desiderative predicates differ from accusative-marking desiderative predicates in that they allow passivization of their verbalized form. Consider the following sentences (11), in which the verbalized forms of the predicates in (10) above are passivized.<sup>1</sup>

- (11) a. Sono hon wa minna ni {yomi / kai / mi}-ta-gar-arete iru.  
 the book Top all by read / buy / look-want-Vbz-Pass Asp  
 'The book is in such a state that everyone wants to {read/buy/look at} it.'
- b. ??Kanojo wa minna ni {sasoi / tasuke / nagusame}-ta-gar-arete iru.  
 she Top all by ask.out / help / console-want-Vbz-Pass Asp

<sup>1</sup>The acceptability of sentences like (11a) has been independently noted by Nishigauchi (1993). He states that his account predicts that such passivization is possible whenever the passive subject is a non-human noun. However, note the unacceptability of (11d).

- c. \*Kare wa minna ni machi-ta-gar-arete iru.  
       he Top all by wait-want-Vbz-Pass Asp
- d. ??Sonohon wa minna ni Biru ni {age / watashi}-ta-gar-arete iru.  
       the book Top all by Bill Dat give/hand-want-Vbz-Pass Asp

As these sentences suggest, passivization of the whole verbalized desiderative predicate is possible only when the non-passivized plain desiderative can take a nominative object. (Note that the ungrammaticality of (9b) is consistent with this, given (10b).) In other words, nominative-marking desiderative predicates but not accusative-marking desiderative predicates are passivizable. This observation supports the above analysis, whereby the accusative-marking desiderative morpheme subcategorizes for an EVENT, creating a biclausal f-structure, while the nominative-marking desiderative morpheme subcategorizes for a SUBEVENT, creating a monoclausal f-structure.

It should also be noted that the base verb to which *-ta(-i)* is suffixed can itself be a passive verb, as in (12).

- (12) Boku wa chichi ni sono toki soko de omoikiri  
       I Top father Dat that time there with.all.might  
       nagur-are-takat-ta.  
       beat-Pass-want-Past  
       ‘I wanted to be beaten by my father with all his might there at that time.’

This sentence can be identified as a functionally biclausal desiderative sentence (like an accusative-marking desiderative sentence), given that a full range of adverbs can modify the base verb alone, as in (12); this is the pattern with accusative-marking desiderative predicates, as we will see in the next section.

### 5.2.2 Adjunct Interpretation

The differing pattern of adjunct modification in the two types of desiderative predicates provides further support for the analysis in which the two types differ in their functional complexity. With an accusative-marking desiderative predicate it is possible to use a full range of adjuncts to modify the base verb or *-ta(-i)*; with a nominative-marking desiderative predicate it is not. For example, note the difference between (13a) and (13b) (cf. Sugioka 1984, Sells 1990).

- (13) a. {Hontoo ni / Ashita kara / Tonari no heya de}  
 truly tomorrow from next Gen room Loc  
 eigo o hanashi-tai.  
 English Acc speak-want  
 'I want to speak English {truly / from tomorrow / in the next room}.'
- b. {Hontoo ni / ??Ashita kara / ??Tonari no heya de }  
 truly tomorrow from next Gen room Loc  
 eigo ga hanashi-tai.  
 English Nom speak-want  
 'I want to speak English {truly / \*from tomorrow / \*in the next room}.'

Of the three adverbs, *hontoo ni* 'truly' modifies *-ta(-i)*, while the others are intended to modify *hanashi* 'speak'. The contrast between (13a) and (13b) suggests that adverbs modifying the base verb alone are restricted in the case of nominative-marking desideratives, but not in the case of accusative-marking desideratives. In the present account, this restriction can be attributed to the functional monoclausality of nominative-marking desideratives, which do not involve a full syntactic complement structure.

The same point can be made using adverbial clauses. Nominative-marking desiderative predicates do not allow a full range of adverbial clauses to modify the base verb. For example, (14a) and (14b) are not fully acceptable with nominative marking of the object, though there is no problem with accusative marking.

- (14)a. Boku wa [Jon ga kite kara] koohii {?ga/o} nomi-tai.  
 I Top John Nom come after coffee Nom/Acc drink-want  
 'I want to drink coffee after John comes.'
- b. Boku wa [Marii ga ki-tara] koohii {?ga/o} nomi-tai.  
 I Top Mary Nom come-when coffee Nom/Acc drink-want  
 'I want to drink coffee (together) when Mary comes.'

The restriction on adverbial modification of the base verb is also reflected in the lack of the ambiguity of adverb interpretation in nominative-marking desiderative sentences. (15a), for example, is ambiguously interpreted, with *zutto* 'for a long time' modifying either the action of embracing a child or the desire to do so. On the other hand, the corresponding nominative-marking desiderative sentence (15b) does not allow such ambiguity; the time adverb can only be interpreted as indicating the duration of the desire to embrace the child.

- (15) a. Boku wa zutto sono ko o dakishime-takat-ta.  
 I Top for.a.long.time the child Acc embrace-want-Past  
 'I wanted to embrace the child for a long time.' (ambiguous)
- b. Boku wa zutto sono ko ga dakishime-takat-ta.  
 I Top for.a.long.time the child Nom embrace-want-Past  
 'For a long time, I wanted to embrace the child.' (unambiguous)

### 5.2.3 Verbal Anaphora

Further evidence for the present analysis comes from the variable patterning of verbal anaphora. Consider the following sentence pair.

- (16) a. Boku wa sono hon o kai-takat-ta.  
 I Top the book Acc buy-want-Past  
 Marii mo soo shi-takat-ta rashii.  
 Mary too so do-want-Past seem  
 'I wanted to buy that book, and Mary seems to have wanted to do so, too.'
- b. Boku wa sono hon ga kai-takat-ta.  
 I Top the book Nom buy-want-Past  
 ?Marii mo soo shi-takat-ta rashii.  
 Mary too so do-want-Past seem  
 'I wanted to buy that book, and Mary seems to have wanted to do so, too.'

Desiderative predicates with an accusative object freely allow the replacement of a complement predicate and its arguments by *soo suru*, but this is not fully possible with those when there is a nominative object.<sup>2</sup> This pattern of limited acceptability is what is observed generally in the predicates having a monoclausal functional structure and a biclausal argument structure (sec. 2.2.4).

<sup>2</sup>Note the reverse anaphoric possibility with *soo datta* 'be so', as in (i) below.

- (i) Boku wa sono hon {ga/o} kai-takat-ta.  
 I Top that book Nom/Acc buy-want-Past  
 OK/?Marii mo soo dat-ta rashii.  
 Mary too so Cop-Past seem  
 'I wanted to buy that book. So did Mary, it seems.'

The second sentence is acceptable with *ga* in the first sentence, but somewhat unacceptable with *o*. The anaphoric expression *soo datta* appears to replace one functional predicate *and* its (non-subject) arguments and adjuncts.

### 5.2.4 Summary

The above observations lend support to the view that accusative-marking desiderative predicates have biclausal functional and argument structures, while nominative-marking desiderative predicates have a biclausal argument structure but a monoclausal functional structure.

The semantic motivation for assigning the status of SUBEVENT to the complement of nominative-marking desiderative predicates is the fact that here the object of the embedded verb represents the direct target of the subject's desire to obtain something, as I pointed out above. In this sense, SUBEVENT and the predicate 'want' are more intimately related in nominative-marking desiderative predicates than are EVENT and 'want' in accusative-marking desiderative predicates.

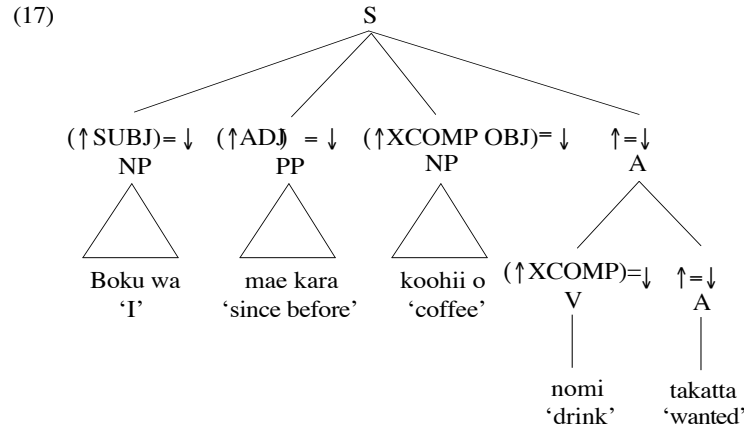
The functional difference between the two types of desiderative predicates has an important implication for the status of nominative object marking in Japanese. In nominative-marking desiderative sentences, the object is governed by the whole desiderative predicate in f-structure (e.g., *yomi-ta(-i)*), while in accusative-marking desiderative sentences, it is governed by the non-stative embedded predicate (e.g., *yomi*), which is the head of the XCOMP of *-ta(-i)* (see the f-structures in (2b) vs. (3b) above). Thus, the nominative/accusative case marking of an object in desiderative sentences is determined by the stativity of the predicate that governs this object in f-structure. The generality of this statement will be discussed in Section 5.5 below.

## 5.3 Constituent Structure of Desiderative Sentences

The above analysis suggests that desiderative sentences have a constituent structure characterized in the following way.

First, consider the accusative-marking desiderative predicates. Morphologically, an accusative-marking desiderative predicate has a sublexical XCOMP position to the left side of the head *-ta(-i)*. One morphological word thus corresponds to two functional words.

The phrase structure of XCOMP constructions, discussed in the previous two chapters, allows the arguments and adjuncts of the XCOMP to occur directly under the top S. One example of such a c-structure is given in (17) (cf. (18a) below).



As predicted, the object NP under the top S can scramble freely with the arguments and adjuncts of the main predicate, as suggested by the sentences in (18).

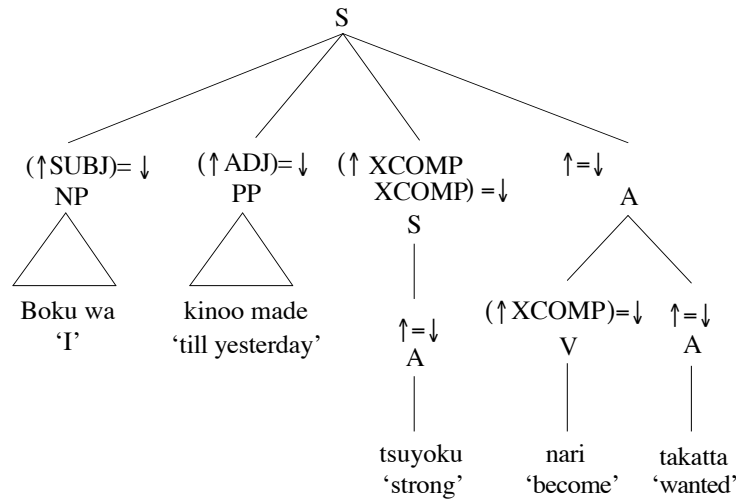
- (18) a. Boku wa mae kara koohii o nomi-takat-ta.  
 I Top before since coffee Acc drink-want-Past  
 'I have long wanted to drink coffee.'
- b. Boku wa koohii o mae kara nomi-takat-ta.  
 I Top coffee Acc before since drink-want-Past
- c. Koohii o boku wa mae kara nomi-takat-ta.  
 coffee Acc I Top before since drink-want-Past

When the XCOMP of *-ta(-i)* itself takes an XCOMP, then the head of the embedded XCOMP must occur adjacent to the desiderative predicate, as shown in (19).

- (19) a. Boku wa kinoo made (wa) [PRO tsuyoku] nari-takat-ta.  
 I Top yesterday till strong become-want-Past  
 'Till yesterday, I wanted to be strong.'
- b. ??Boku wa [PRO tsuyoku] kinoo made (wa) nari-takat-ta.  
 I Top strong yesterday till become-want-Past  
 'Till yesterday, I wanted to be strong.'

This too is as predicted, given one of the Precedence Rules discussed in the preceding two chapters concerning predicative arguments and non-predicative arguments (see (35) in Chapter 3 and (47) in Chapter 4). The c-structure for (19a) is given in (20).

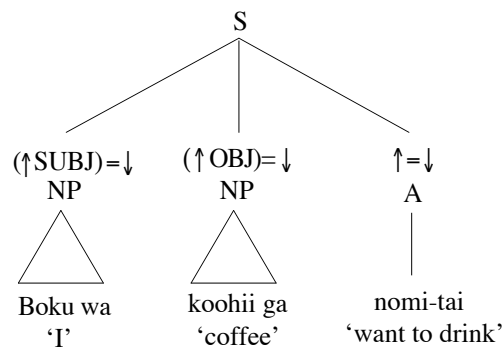
(20)



(Instead of XCOMP XCOMP S in (20), our phrase structure rules may alternatively place an XCOMP S, which is expanded further to another XCOMP S.)

By contrast, there is no reason to assume a complex c-structure for nominative-marking desiderative sentences. The c-structure of such sentences can be exemplified in (21).

(21)



## 5.4 Alternative Accounts

### 5.4.1 Restructuring and Constituent Structure

One alternative analysis of desiderative predicates is provided by Sugioka (1984). She claims that the morpheme *-ta(-i)* is suffixed to a V' as an instance of syntactic suffixation, thereby producing an accusative-marking

desiderative predicate. She also notes certain monoclausal properties of nominative-marking desiderative predicates regarding adjunct interpretation (discussed below), and proposes that the nominative case marking results from the restructuring of a complex complement structure to a simplex structure at surface structure. This restructuring converts a structure like (22a) into one like (22b).

- (22) a. [<sub>V'</sub> [<sub>V'</sub> eigo o hanashi ] -tai ]  
b. [<sub>V'</sub> eigo ga [<sub>V'</sub> hanashi-tai]]

This account is similar to mine in that it assumes a complex structure for accusative-marking desideratives, and a simplex structure for nominative-marking desideratives.

One thing that is missing in this account is a statement of the semantic restriction noted in 5.2.1: nominative-assigning desideratives are possible only with verbs whose object is itself the target of the desire to obtain something. It is not clear how such a constraint could be stated in the restructuring account. In the present account, it is attributed to a semantic correlation involving the distinction between EVENT and SUBEVENT.

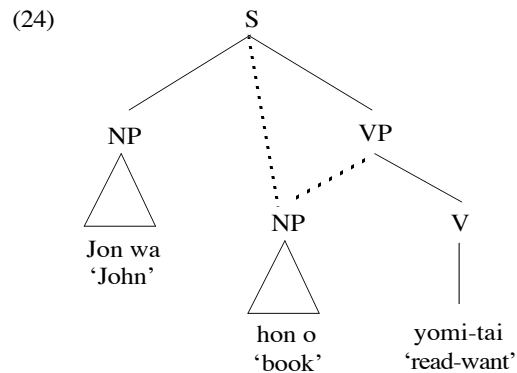
In Sugioka's account, it is also not clear whether this restructuring occurs with verbs that do not subcategorize for an accusative NP. In this respect, one might observe that it is possible to passivize a verbalized desiderative predicate with a dative object (e.g., *ai-ta-gar(-u)* (meet-want-Vbz) 'want to meet'), which suggests that the presence of an accusative NP is not crucial. It is difficult to test whether there are cases of monoclausal intransitive desiderative predicates, since the positive test for monoclausality used above (i.e., passivization) cannot be applied to intransitive desiderative predicates. (By contrast, it is possible to prove that there are functionally biclausal intransitive desiderative predicates, using the adjunct interpretation test, for example (a positive test for biclausality). See (12) above.)

Sugioka (1984) observes that adjuncts that modify the base verb alone cannot be placed between a nominative NP and a desiderative predicate. Consider the following examples taken from Sells 1990:328 (also recall (13)).

- (23) a. Ego o            {hontoo ni / ashita kara / tonari no heya de}  
 English Acc truly tomorrow from next Gen room Loc  
 hanashi-tai.  
 speak-want  
 'I want to speak English {truly / from tomorrow / in the next room}.'
- b. Ego ga            {hontoo ni /\*ashita kara / \*tonari no heya de}  
 English Nom truly tomorrow from next Gen room Loc  
 hanashi-tai.  
 speak-want  
 'I want to speak English {truly / \*from tomorrow / \*in the next room}.'

The adjuncts that cannot occur between the nominative object and the desiderative predicate (i.e., *ashita kara* 'from tomorrow' and *tonari no heya de* 'in the next room') are modifiers of the base verb, whereas the one that can intervene (i.e., *hontoo ni* 'truly') is a modifier of the desiderative as a whole.

This observation, together with other considerations, has led Sells (1990) to propose an account in which the two kinds of desiderative predicates may differ in the phrase-structure position of their object NP. According to him, an accusative object NP in Japanese can appear in two different positions: under a VP or under an S, as indicated in (24).



By contrast, Sells claims that a nominative marked object can only appear within a VP, governed by a stative predicate.<sup>3</sup> This analysis, he argues, can

<sup>3</sup>This claim is partly based on the observation that (ia) below is acceptable, in contrast to the unacceptable (ii) with *ga* marking on *Jon* (Tonoike 1980a, Kuno 1980a, Ishikawa 1985). Note also that (ib) with *wa* marking on *Jon* is acceptable.

explain the above adverb facts. He assumes that adjuncts such as *ashita kara* ‘from tomorrow’ and *tonari no heya de* ‘in the next room’ are S-level adjuncts; the reason they cannot intervene between a nominative object and a stative predicate is because the nominative object occurs only under a VP.

However, the contrast found in (23) cannot be attributed to such a constituent difference. First, those adjuncts that are excluded in (23b) cannot appear even in sentences where they do not intervene between an object NP and a stative predicate, as I pointed out in (13) above.<sup>4</sup> The

- 
- (i) a. Jon ga eigo ga wakaru  
       John Nom English Nom understand  
       ‘John understands English.’  
       b. Eigo ga Jon { \*ga/wa } wakaru  
       English Nom John Nom/Top understand

Sells (1990) interprets the unacceptability of (ib) with *ga* as showing that a nominative-marked object NP must appear inside VP. The acceptability of (ib) with *wa* is attributed to the possibility of a focused NP appearing inside VP.

However, if this is the case, the same pattern should also hold with a dative-marked subject, which this stative predicate can also have. Here, however, there is no clear contrast like the one above. It is true that (iia) sounds better with *wa*, but this is also true of the case when the subject and the object are reversed, as shown by (iib). The strangeness of (iia) and (iib) without *wa* appears to be non-syntactic in nature. In fact, (iiia) and (iiib) are perfectly acceptable to me.

- (ii) a. Eigo ga Jon { ??ni/ni wa } wakaru.  
       English Nom John Dat/Dat Top understand  
       ‘John understands English.’  
       b. Jon ( ??ni/ni wa ) eigo ga wakaru.  
       John Dat/Dat Top English Nom understand  
       (iii) a. Eigo ga Jon ni wakaru monka!  
       English Nom John Dat understand Sfp  
       ‘How can John speak English?!’  
       b. Jon ni eigo ga wakaru monka!  
       John Dat English Nom understand Sfp

These observations suggest that there is something specific to the nominative marking of a subject that makes (ib) with *ga* unacceptable. One possible factor is the semantic/pragmatic properties of the subject nominative marking. The subject of a stative predicate is usually marked with the topic marker *wa*; nominative marking, if it appears, is interpreted only in the “exhaustive listing” reading. This reading is typically assigned to the first nominative NP in a sentence (e.g., Kuno 1973). However, the nominative subject NP in (ib) above is not the first nominative NP in this sentence.

<sup>4</sup>It appears that there is a slight difference in the acceptability of the adjuncts in (13b) and (23b); some adjuncts are more clearly ruled out in (23b). This can be

exclusion of such adjuncts in (13b) and (23b) is attributed to functional monoclausality. Moreover, the following sentence shows that it is possible to place similar time adverbs between a nominative object and a desiderative predicate if the adjunct modifies the whole desiderative predicate.

- (25) Boku wa sono hon ga kyonen kara kai-takat-ta.  
 I Top the book Nom last.year from buy-want-Past  
 'I have wanted to buy the book since last year.'

(Note that *kyonen kara* 'since last year' in (25) modifies the whole desiderative predicate, while *ashita kara* 'since yesterday' in (23b) modifies the base verb only.) In my account, the nominative object NP in (25) occupies a position directly dominated by the top S (cf. (21)), thereby allowing an adverb to intervene between it and the desiderative predicate.

#### 5.4.2 Incorporation Analysis

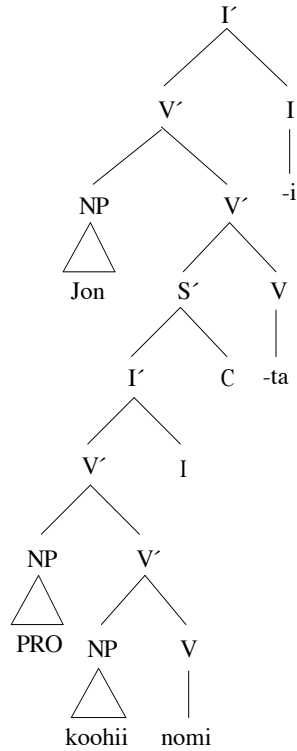
Baker (1988) proposes that complex predicates such as desideratives and causatives are formed by the process of Verb Incorporation (head movement). An analysis of Japanese desideratives involving Incorporation has been proposed by Inoue (1989a, b) and Nishigauchi (1993). In Inoue's analysis, the two patterns of object case marking are accounted for in terms of two different types of Incorporation processes, plus the ability of *-ta(-i)* to absorb the Case-marking ability of the verb that it governs, and the status of nominative as the default case that appears when an NP does not receive any case.

Inoue (1989a, b) proposes that both types of desiderative sentences share the same D-structure, namely (26a). The desideratives with an accusative object are derived from this structure by moving V by Baker's V-to-C movement and then incorporating it at the position which is sister to *-ta(i)*, as in (26b). In this case, the NP *koohii* 'coffee' receives accusative case from the verb *nomi* 'drink', and then gets Incorporated into the desiderativizing *-ta*. The desiderative *-ta* absorbs the case-assigning ability of the verb *nomi* at this stage, but since the NP *koohii* is not governed by *-ta*, she claims, its case is not absorbed. Therefore the NP is marked in the accusative. (The way this account works is not entirely clear; she seems to make the unusual assumption that accusative case has been assigned to an NP before incorporation.)

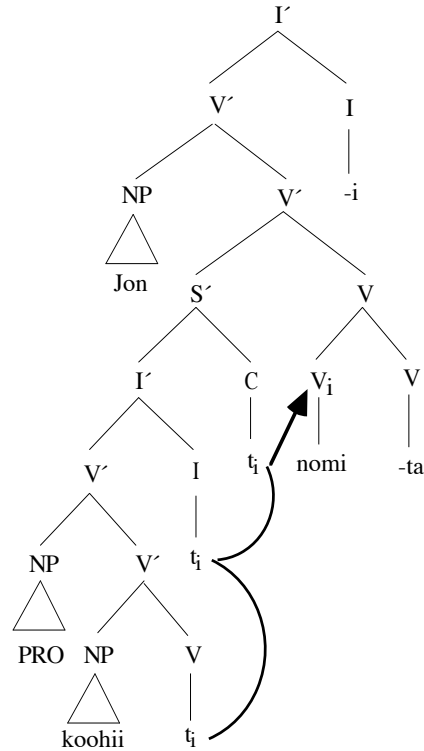
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attributed to a surface constraint disfavoring a long distance between a nominative object and a desiderative predicate (Shibatani 1978).

(26) a. D-structure of both acc- and nom-marking desideratives

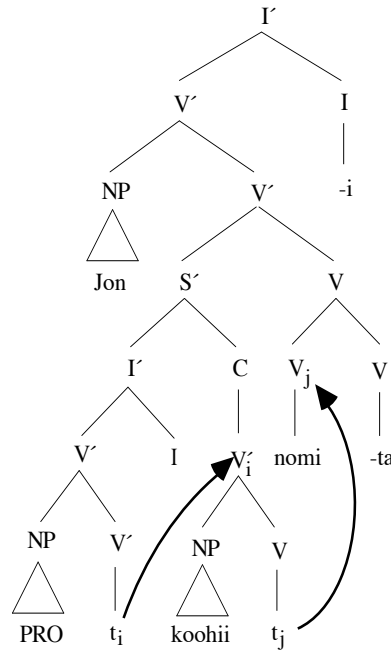


b. S-structure of acc-marking desideratives



On the other hand, the desideratives with a nominative object are derived by another type of derivation, in which the whole V' is first moved to C position (Baker's VP-to-Comp movement), and then V alone moves to be incorporated (the derivation from (26a) to (27)). In this case, Inoue argues, the case-assigning ability of the verb *nomi* is absorbed by *-ta(-i)* after V' is raised to the C position (cf. (27)), and therefore no case is assigned to the object NP and so it receives the default nominative.

## (27) S-structure of nom-marking desideratives



One problem with this view is the constituent structure for desideratives with a nominative object. Baker's Uniformity of Theta Assignment Hypothesis requires that the two cases of desiderative sentences share the same D-structure. This complex biclausal structure at the level of D-structure, moreover, must be maintained throughout the syntactic derivation due to the requirement of the Projection Principle. This is strikingly different from the present analysis, in which the two types of desiderative predicates differ in functional complexity: accusative-marking desideratives are functionally biclausal, while nominative-marking desideratives are functionally monoclausal. One false prediction resulting from this complex constituent structure view of both kinds of desiderative predicates is that both types of desideratives should allow the same range of adjuncts to be modifiers of the base verb. For example, the same place and time adverbial phrases or clauses should be able to appear under  $I'$  or  $V'$  in an embedded clause in (26b) and (27) to modify the base verb in accusative-marking and nominative-marking desideratives, respectively. However, as pointed out in 5.2.2 above, such adjuncts are restricted in the case of nominative-marking desiderative predicates.

## 5.5 Nominative Object and Morphologically Complex Predicates

In the above discussion, I have argued that the nominative case marking of an object in desiderative sentences is not in free variation with accusative marking; which pattern appears is determined by the stativity of the predicate that governs the object in f-structure. In this section, I will argue that in Japanese this can be generalized to the case marking of an object by stative predicates in general. The proposed generalization for the nominative-marking of an object in Japanese is as follows.

- (28) An object is marked in the nominative if and only if it is governed by a stative predicate in f-structure.

(This means that there is no long-distance quirky case marking of object in Japanese.) This generalization is certainly consistent with the obligatory nominative case marking of the object of simple stative predicates such as *urayamashii* ‘envious’.<sup>5</sup> In what follows, I will show that it also holds with a variety of complex predicates involving stative predicates.

### 5.5.1 Potential Predicates and Verbalized Stative Predicates

The above generalization holds of the nominative object marking of potential predicates with the suffix *-(ra)re(-ru)* or *e(-ru)*, such as *tabe-(ra)re(-ru)* (eat-can) ‘can eat’ and *yom-e(-ru)* (read-can) ‘can read’. These, like desiderative predicates, allow both nominative and accusative marking of their object; and, like desideratives, there is evidence suggesting that potential predicates are functionally monoclausal when the object is marked in the nominative. For example, adjunct modification of the base verb alone is semantically restricted with a nominative object. Consider (29).

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<sup>5</sup>There are certain apparent exceptions. Some speakers accept an accusative-marked object with predicates like *suki-da* ‘be fond of’ (Sugioka 1984). For such speakers these predicates are optionally biclausal. Note that *suki-da* consists of two predicates, *suki* (the nominalized form of the verb *suku*) and the copula *da*. Also, some predicates are ambiguously stative and non-stative. Sugioka (1984) provides evidence suggesting that the stative verb *wakaru* ‘understand’ can also be used as a non-stative verb (‘come to understand’), assigning an accusative case to its object.

- (29) Kare wa ik-kagetsu mo sono hon {ga/o} yom-e-nakat-ta.  
 he Top one-month even the book Nom/Acc read-Pot-Neg-Past  
 ‘For as long as one month, he was not able to read the book.’  
 (both *o* and *ga*)  
 ‘It was not possible for him to spend as long as one month reading the  
 book.’  
 (*o* only)

(29) is ambiguous with an accusative object: *ik-kagetsu* ‘one month’ can indicate the duration of reading or of possibility. With a nominative object, however, it can only modify the duration of possibility.<sup>6</sup> This suggests that there is no full complementation at f-structure when the object is nominative-marked.<sup>7</sup>

The above generalization is also consistent with the accusative case marking of the object of verbalized stative predicates, such as *urayamashi-gar(-u)* ‘show signs of being envious’. Since *-gar* selects for SUBEVENT (see 5.2.1 above), the whole verbalized stative predicate is mapped onto a single f-structure. The object, accordingly, is governed in f-structure by the verbalized stative predicate as a whole (which is non-stative) rather than the stative predicate. Therefore it is marked in the accusative.

In the case of verbalized desiderative predicates, such as *yomi-ta-gar(-u)* ‘show signs of wanting to read’, the ambiguity of *-ta(-i)* creates two possible f-structures, exemplified by (30a) and (30b). The former is the f-structure of a verbalized nominative-marking desiderative predicate; the latter, of a verbalized accusative-marking desiderative predicate.

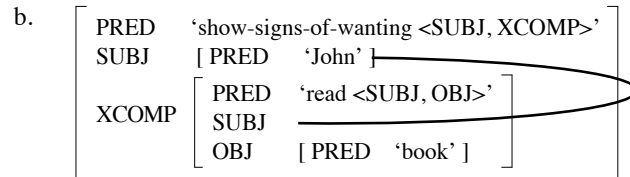
- (30) a. 
$$\left[ \begin{array}{ll} \text{PRED} & \text{'show-signs-of-wanting-to-read <SUBJ, OBJ>'} \\ \text{SUBJ} & [ \text{PRED} \text{ 'John'} ] \\ \text{OBJ} & [ \text{PRED} \text{ 'book'} ] \end{array} \right]$$

<sup>6</sup>Note also a difference noted by Tada (1992), exemplified here by my example below.

- (i) Sono suri wa kyasshu-kaado dake {ga/o} nukitor-e-ru.  
 the pickpocket Top cash-card only Nom/Acc pick-Pot-Prs.  
 ‘The pickpocket has a technique of picking cash cards alone (from among  
 many things in a wallet.’ (preferred with *o*)  
 ‘The cash card is the only thing that the pickpocket can pick.’ (preferred with  
*ga*)

This semantic difference might also be explained by the presence/lack of syntactic complementation.

<sup>7</sup>Dubinsky (1992) proposes an Incorporation analysis of potential predicates, similar to that suggested for desiderative sentences by Inoue 1989a, b. The adjunct patterning discussed here cannot, however, be explained in such an account, as was the case with desideratives.



In neither case is the object NP governed by a stative predicate in f-structure, and therefore it should be accusative-marked in both cases. This prediction is correct, as was seen in (7) above.

### 5.5.2 More Complex Cases

The nominative marking of objects, however, is potentially a much more complex issue, especially when various stative and non-stative morphemes coexist in a single morphologically complex expression (see Kuno 1973, Shibatani 1978, Kageyama 1982, Sugioka 1984, Miyagawa 1989b, Tada 1992). I argue that the above generalization for nominative object marking holds in these cases, too. I will not be able to present the entire argumentation in this section, however, since that would involve the full analysis of several complex predicates which will be discussed in the coming chapters. My purpose here is simply to contrast my own view with previous proposals, in order to convey a better idea of what my account involves.

Kuno (1973) has proposed that the case marking of the object of a morphologically complex predicate is determined in the following way:

- (31) a. If the rightmost item in the complex predicate is a bound morpheme,
- i) if it is stative, then the object is either accusative or nominative.
  - ii) if it is non-stative, then the object is accusative.
- b. If the rightmost item is a free morpheme,
- i) if the preceding item is stative, then the object is nominative.
  - ii) if the preceding item is non-stative, then the object is accusative.

Kuno argues that this view correctly handles the case marking of desiderative predicates and their verbalized forms. Since *-ta(-i)* is a bound morpheme and stative, the object is marked either in the nominative or accusative (his case (a-i) above). (Here he regards accusative and nominative assignment of *-ta(-i)* and *-(ra)re(-ru)* as optional variations.) The morpheme *-gar(-u)*, on the other hand, is a bound morpheme and non-stative, and so a verbalized stative predicate (including verbalized desideratives) has its object marked in the accusative (the case of (a-ii)

above).

Cases like these might suggest that object case marking is determined by the stativity of the rightmost (i.e., head) item of the complex (cf. Kageyama 1982, Sugioka 1984). However, Kuno recognizes cases in which this is not true, thus motivating his statement in (31b). Consider the sentences in (32).

- (32) a. Taro wa sore {ga/\*o} wakaru.  
 Taro Top that Nom/Acc understand  
 'Taro understands it.'
- b. Boku wa Taro ni (muriyari) sore {\*ga/o} wakar-ase-ta.  
 I Top Taro Dat forcefully it Nom/Acc understand-Caus-Past  
 'I made Taro understand it.'
- c. Taro wa sono-go nihongo {ga/\*o} wakari-hajime-ta.  
 Taro Top that-after Japanese Nom/Acc understand-begin-Past  
 'Taro began to understand Japanese after that.'

The morphologically complex predicates in (32b) and (32c), *wakar-ase(-ru)* 'cause to understand' and *wakari-hajime(-ru)* 'begin to understand', both have a non-stative morpheme as their rightmost item, though the base verb *wakaru* 'understand' is a stative verb, as shown by the case marking of (32a). However, these two complex predicates differ in that the former cannot mark its object with nominative, while the latter can (and in fact must). Kuno attributes this difference to the free/bound difference of *-(s)ase(-ru)* and *hajime(-ru)*. Because of the status of *hajime(-ru)* as a free morpheme, he claims, the object's case marking is determined by the stativity of the preceding verb (case (b-i)). In the case of *wakar-aseru*, on the other hand, the rightmost item is a bound morpheme, and so this rightmost item is what determines the case marking of the object (case (a-ii)).

There are problems with this view, however. First, it is not clear to me conceptually why the free/bound difference should have anything to do with case marking. Second, the free/bound distinction does not seem empirically to be the right distinction, as suggested by the following data. In all three sentences in (33), a complex predicate made up of two non-stative verbs is suffixed by a bound stative morpheme, and therefore Kuno's account would predict that both accusative and nominative should be possible in all three examples. However, this is not the case.

- (33) a. Boku wa nakanaka sono hon {ga/o} yomi-hajime-rare-nai.  
 I Top easily the book Nom/Acc read-begin-Pot-Neg  
 'I cannot begin to read the book easily.'

- b. Boku wa sono keeki {??ga/o} tabe-sobire-taku nakat-ta.  
 I Top the cake Nom/Acc eat-miss-want Neg-Past  
 'I did not want to miss eating the cake.'
- c. Boku wa sore {\*ga/o} tabe-sugi-taku nakat-ta.  
 I Top it Nom/Acc eat-overdo-want Neg-Past  
 'I did not want to eat too much of it.'

Another proposal has been made by Miyagawa (1989b:191-194). He claims that a stativizing morpheme like *-ta(-i)* and *-(ra)re(-ru)* absorbs the case-assigning ability of the transitive verb to which it is attached, and therefore the default nominative case is assigned to the object.<sup>8</sup> However, this account cannot neatly explain why *ga* is possible in (33a); in order to explain the nominative marking, the accusative-assigning property of *yom* would have to be absorbed in spite of the fact that *yom* is not the verb to which the stativizing morpheme is suffixed. Miyagawa's account would require a rather ad hoc stipulation as to which morpheme can be transparent for the purpose of absorbing the case-assigning property.<sup>9</sup>

In my account, by contrast, the differences observed among the sentences in (32) and (33) are attributed to differences in the functional structures of these morphologically complex predicates. As stated above, my claim is that an object is case-marked in the nominative if the predicate that governs it in f-structure is stative. In my account, then, the object NP *sore* in (32b) is governed by the whole non-stative predicate *wakar-ase(-ru)*, which constitutes a single predicate in f-structure at least in this case (i.e., this kind of coercive causative is functionally monoclausal). Therefore the

<sup>8</sup>Miyagawa (1989b) supports his claim concerning the adjacency of the verb subcategorizing for an object and the stativizing morpheme with examples like (i), in which *tai* is not adjacent to *yom*. However, the very similar example (ii) is acceptable to me. (See chapter 6 for more on causatives.)

- (i) ??Boku wa kono hon ga yom-ase-tai.  
 I Top this book Nom read-Caus-want  
 'I want to make (someone) read this book.'
- (ii) Boku wa kodomo ni wa konna hon ga yom-ase-tai.  
 I Top child Dat Foc like.this book Nom read-Caus-want  
 'I want to make my child read this kind of book.'

<sup>9</sup>Miyagawa (1989b:186, 194) claims that aspectual verbs like *hajimeru* are transparent for the purpose of case absorption by the passive morpheme *-rare* (see sec. 6.2.3.3), but they are not in the case absorption by stativizers (contrary to what (33a) shows). In Chapter 7 I will show that some desiderativized aspectual compound verbs allow *ga* marking of the base object, while others do not.

object is marked in the accusative. (Or alternatively, *wakar(-u)* in (32b) might be a non-stative predicate, meaning ‘come to understand’ (Sugioka 1984).)<sup>10</sup> On the other hand, the object NP in (32c) is functionally governed by the stative verb *wakar(-u)*, which is the head of the XCOMP of *hajime(-ru)*; here *wakar(-u)* and *hajime(-ru)* form an aspectual compound which has a biclausal functional structure when the subject is interpreted as non-agentive, as in this example. Therefore the object is marked in the nominative. In Chapters 6 and 7, I will argue that these analyses of coercive causatives and of non-agentive aspectual compounds, respectively, are correct.

In (33a) through (33c), a stative morpheme appears in the rightmost position, and therefore my account predicts that the object of the base verb will be marked in the nominative only when the whole complex predicate is a single functional predicate; otherwise it will be marked in the accusative. In my account, the potential *-(ra)re(-ru)* selects either SUBEVENT or EVENT (see above), and so does *hajime(-ru)* when the subject is agentive (i.e., *hajime(-ru)* can create either “Type I” or “Type II” aspectual compounds). In (33a), therefore, the whole predicate can be mapped onto a monoclausal, biclausal, or tricolausal f-structure. When it is mapped onto a monoclausal f-structure, the object is governed by the stativized predicate as a whole and marked in the nominative; otherwise the object will be governed by a non-stative predicate and marked in the accusative. My account also states that *sobire(-ru)* and *sugi(-ru)* in (33b) and (33c) will select for a syntactic complement (XCOMP); therefore it is the embedded non-stative verb that governs the object NP, regardless of how the stative *-ta(-i)* affects the f-structure of *sobire(-ru)* or *sugi(-ru)*. In Chapter 7, I will argue that these analyses of aspectual compounds and of *sobire(-ru)* and *sugi(-ru)* compounds are correct.

## 5.6 Conclusion

In this chapter, I made the argument that there are two types of desiderative predicates in Japanese. In the one case, the predicate is functionally one

<sup>10</sup>In this view, the causative *-sase*, which does not usually occur with a stative verb, would in fact force the non-stative reading of *wakaru*. In this analysis, the functional complexity of causatives would have nothing to do with the case marking of the object of this verb. The evidence for non-stative *wakaru* comes from sentences like the following.

- (i) Boku ni ["sore {\*ga/o} wakare!"] to itte mo muri-da.  
 I Dat it Nom/Acc understand Comp say even impossible Cop  
 ‘It is impossible, even if you say that I should understand it.’

word; in the other, two words. An account that does not recognize such functional complexity, such as an Incorporation approach to these predicates, cannot explain the differences between the two types. I have also argued for a simple and plausible generalization regarding nominative case marking of an object.

## CHAPTER 6

### Morphological Causatives

In this chapter, I will discuss the syntactic and semantic nature of Japanese morphological causative predicates, in which the morpheme *-(s)ase(-ru)* is suffixed to the Renyookei form of a verb (base verb). Japanese morphological causatives have been discussed extensively in the literature (e.g., Kuroda 1965a, 1981, 1990, Shibatani 1973a, 1976a, 1976b, 1978, Kuno 1973, 1983, Inoue 1976a, 1989a, b, McCawley 1976, 1978, Tonoike 1978, Farmer 1980, 1984, Miyagawa 1980, 1984, 1987b, 1989b, Teramura 1984a, Marantz 1984, Ishikawa 1985, Dubinsky 1985, 1994, Kitagawa 1986, Mihara 1987, Gunji 1987, Di Sciullo & Williams 1987, Baker 1988).

One major issue involved in the Japanese causative construction is the biclausal properties it exhibits in spite of its morphological one-word status of the causative predicate. The traditional analysis proposed in Transformational Grammar treated morphological causatives as having a biclausal Deep structure which was reduced to a monoclausal Surface Structure. In LFG, a similar proposal was made by Ishikawa (1985) to the effect that Japanese morphological causatives are biclausal in f-structure and monoclausal in c-structure. In this chapter, I will provide evidence suggesting that these causatives are not always functionally biclausal, but are functionally monoclausal in some readings and biclausal in other readings. I will discuss the implications of this analysis for evaluating several recent proposals concerning causativization, including Baker's and Inoue's Incorporation analysis and Alsina's cross-linguistic parameterization of morphological causatives.

Another issue that has frequently been discussed in connection with Japanese morphological causatives is the semantic differences between morphological and lexical causatives (Shibatani 1973a, 1976a, b; etc.). I will discuss some of the observations made by Shibatani, which will be of some relevance in my treatment of the semantic constraints on predicates in Chapter 10.

## 6.1 Causative Predicates

### 6.1.1 Causative Predicates and Causation Types

Japanese morphological causative expressions are illustrated in (1). (In these examples the initial *s* of the causative morpheme *-(s)ase* has dropped out as is generally the case when suffixed to a verb stem ending in a consonant).

- (1) a. Jon wa    Biru o    hashir-ase-ta.  
      John Top Bill Acc run-Caus-Past  
      ‘John made Bill run.’
- b. Jon wa    Biru ni    hashir-ase-ta.  
      John Top Bill Dat run-Caus-Past  
      ‘John made Bill run.’

These sentences involve the causativization of an intransitive verb, and in this case two different case marking patterns on the causee argument are possible. The causee is marked with the accusative *o* in (1a) and with the dative *ni* in (1b). I will call cases like (1a) *o*-causatives, while cases like (1b) will be termed *ni*-causatives.

There are certain semantic differences between the two types of causatives. The distinction has often been treated in terms of the difference between *make*-causation and *let*-causation (Kuroda 1965a, Kuno 1973), or between inducing (ordinary) causation and permissive causation (cf. Shibatani 1976a, 1978). Inducing causation is initiated by a causer, who causes some event to happen by persuading, ordering, psychologically pressuring, or physically manipulating a causee. Permissive causation is initiated by a causee, whose action or change is approvingly or tacitly permitted by a causer (permitter). Shibatani (1976a, 1978, 1990), however, observes that both *o*-causatives and *ni*-causatives can represent inducing as well as permissive causation, with slight differences in meaning. *O*-causatives represent coercive inducing causation as well as implicit permissive causation, while *ni*-causatives represent persuasive (non-coercive) inducing causation and explicit permissive causation. Inducing causation is *persuasive* when a causer appeals to the will of the causee to bring about the caused event (i.e., the caused event is causee-controlled), while it is *coercive* when a causer brings about a caused event by force, authority, psychological pressure, or physical manipulation, without appealing to the causee’s will or cognitive decision (i.e., the caused event is causer-controlled). Permissive causation is *explicit* when a causer willingly approves the permitted process via some sort of permission-granting act; it is *implicit* when a causer unwillingly gives tacit consent to the permitted

process, refraining from some potential interfering act. This taxonomy is laid out below.<sup>1</sup>

- (2)
- |           |   |            |   |            |                       |
|-----------|---|------------|---|------------|-----------------------|
| causative | { | inducing   | { | persuasive | <i>ni</i> -causatives |
|           |   |            | { | coercive   | <i>o</i> -causatives  |
|           |   | permissive | { | explicit   | <i>ni</i> -causatives |
|           |   |            | { | implicit   | <i>o</i> -causatives  |

There are several ways to disambiguate a potentially ambiguous causative sentence. Often the choice of a particular adjunct or modifier forces a particular reading. Consider the two readings of *ni*-causative sentences first. Sentence (3) can only be interpreted in the persuasive inducing causation reading, because the modifier on the causee NP is incompatible with a permissive causation reading.

- (3) Jon wa [shiburu Marii] ni mo soko ni ik-ase-ta.  
 John Top hesitate Mary Dat too there go-Caus-Past  
 ‘John made hesitant Mary go there.’

Explicit permissive causation is initiated by a causee’s willingness to do something, which is contradicted by the relative clause modifier *shiburu* ‘(who) hesitate’. Therefore this sentence is interpretable only in the persuasive inducing causation reading. (Some speakers find it somewhat difficult to get this reading, unless *ni* is stressed or is followed by particles like *mo* ‘too’ or *sura* ‘even’)

Sentence (4), on the other hand, is most naturally interpreted in the explicit permissive causation reading (Shibatani 1978). The persuasive inducing causation reading is ruled out because the quoted expression used by the causer can be interpreted as an act of permission but not of persuasion.

- (4) Jon wa [“iidaroo!” to itte] Marii ni soko ni ik-ase-ta.  
 John Top good Comp say Mary Dat there go-Caus-Past  
 ‘John let Mary go there, saying “It is OK.”’

*O*-causatives can be disambiguated in a similar way. (5) can only be

<sup>1</sup>The terms “inducing causation” and “permissive causation” are terms that Shibatani (1990) uses; the terms “persuasive causation”, “explicit permissive causation”, and “implicit permissive causation” are my own (cf. Ishikawa 1985). Permissive causatives subsume what Dubinsky (1994) calls agentless causatives (cf. Kuno 1978b).

interpreted in the coercive causation reading, given that the unwillingness on the part of the causee expressed in this sentence is inconsistent with the reading of implicit permissive causation, which is initiated by a willing causee. The same effect can be achieved in a different way by modifying the causative predicate with the adverb *muriyari* ‘forcibly’.

- (5) Jon wa [shiburu Marii] o (muriyari) soko ni ik-ase-ta.  
 John Top hesitate Mary Acc forcibly there go-Caus-Past  
 ‘John (forcibly) made hesitant Mary go there.’

Sentence (6), on the other hand, can be interpreted only in the implicit permissive causation reading, due to the meaning of the *-te* adverbial clause involved, which fits the implicit permissive causation reading (Shibatani 1978). The coercive causation reading is bizarre, since a *-te* adverbial clause is usually interpreted in the means reading in coercive causative sentences, and (6) would indicate John’s coercive action by pretending not to notice his own action of coercion.

- (6) Jon wa [mite mi-nu huri o shite]  
 John Top look look-Neg manner Acc do  
 Marii o soko ni ik-ase-ta.  
 Mary Acc there go-Caus-Past  
 ‘John let Mary go there, pretending not to notice it.’

Another way to force a permissive causation reading is to put the whole causative verb in the *oku* construction, which is semantically compatible only with the (explicit or implicit) permissive causation reading. An example is given in (7).<sup>2</sup>

- (7) Jon wa Marii {o/ni mo} soko ni ik-asete oita.  
 John Top Mary Acc/Dat too there go-Causleave-Past  
 ‘John let Mary go there.’ (‘John left Mary to go there.’)

There are some intransitive verbs whose causative does not allow a choice between the two case-marking patterns. As Kuno (1973), Shibatani (1978), Teramura (1984a), Dubinsky (1985), and others have noted, certain intransitive verbs cannot take *ni*-causatives (when interpreted as inducing causatives). Such verbs include *bakuhatu suru* ‘explode’, *huru* ‘fall, rain’, *shisshin suru* ‘faint’, and *warau* ‘laugh’.<sup>3</sup> Moreover, as Inoue (1976a) and

<sup>2</sup>The *oku* construction in sentences like (7) suggests repetitiveness of a permitted process. Thus, (7) suggests that John let Mary make a repetitive visit there.

<sup>3</sup>Kuno (1973) attributes this observation to a personal communication from James D. McCawley.

Dubinsky (1985) observe, causatives of other intransitive verbs such as *enzetsu suru* ‘give a speech’ and *denwa suru* ‘make a telephone call’, do not allow accusative marking of the causee. These restrictions are predictable from the semantic correlates of causee case marking noted above (Dubinsky 1985).<sup>4</sup> Those verbs whose causatives do not allow *ni*-marking of a causee represent processes that a person does not (usually) initiate by his or her own will, and therefore they are incompatible with persuasive causation. Those verbs whose causatives do not allow *o*-marking of the causee, on the other hand, represent processes that a person cannot perform without his or her own decision to do so, and therefore they are incompatible with coercive causation, in which the caused event is causer-controlled.

The causativization of transitive verbs presents different case-marking patterns: in this case, it is not possible to mark the causee in the accusative. This has been attributed to the double-*o* constraint (Harada 1973, Tonoike 1978, Poser 1983), as mentioned in Chapter 2 (sec. 2.2.2.2). The causative of a transitive base verb with a dative causee can represent the meanings that *o*-causatives with an intransitive base verb represent, as I will discuss in 6.2.3 below.

### 6.1.2 Morphology of Causative Predicates

It is clear that a causative predicate is morphologically a single word. The causative morpheme cannot be separated from its base verb. For example, the causative morpheme alone cannot be repeated in the repetitive constructions, as shown in (8)

- (8) \*Boku wa Jon ni pan o tabe-sase-ta koto wa saseta.  
 I Top John Dat bread Acc eat-Caus-Past thing Foc Caus-Past  
 ‘I did make John eat the bread.’

To be sure, it is possible to say (9a), as noted by Kuroda (1981).

- (9) a. Boku wa Jon ni pan o tabe wa s-ase-ta ga ...  
 I Top John Dat bread Acc eat Foc do-Caus-Past but  
 ‘I did make John eat the bread, but....’  
 b. Jon wa pan o tabe wa shi-ta ga ...  
 John Top bread Acc eat Foc do-Past but  
 ‘John did eat the bread, but....’

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<sup>4</sup>Dubinsky (1985) claims that unaccusative verbs can form only *o*-causatives but that some unergative verbs also form *o*-causatives, thus suggesting that *o*-causatives are not restricted to unaccusative verbs. He terms the relevant semantic feature [ $\bar{7}$  protagonist control] (see also Dubinsky 1994).

(9a) might seem to be a case of a particle separating the base verb and the causative morpheme; but it can also be regarded as the causative form of (9b) (Kato 1985, Miyagawa 1989b).<sup>5</sup>

A causative predicate can also participate as a whole in morphological word formation. For example, it can undergo Renyookei Nominalization (Ishikawa 1985). Examples include *shir-ase* (know-Caus) 'news', *yar-ase* (do-Caus) 'staged action', *maniaw-ase* (be.in.time-Caus) 'makeshift', *o-sawag-ase* (Pol-make.noise-Caus) 'sensation, fuss'. (See also Kitagawa 1986 and Miyagawa 1989b for phonological evidence for the one-word status of morphological causatives.)

However, it must be noted that a predicate can be causativized without itself being a single morphological word. For example, periphrastic *suru* verbs, which constitute two morphological words but one functional word, can be causativized (e.g., *benkyoo s-ase(-ru)* 'cause to study'). In this case the causative morpheme forms a single word with the item to which it is directly suffixed (see also Kuno 1987).

*-(S)ase(-ru)* is not the only causative morpheme in Japanese. There are two related and sociolinguistically competing forms. One is *-(s)as(-u)*, which is used only in the coercive causative reading. Recently yet another form *-(a)sase(-ru)* has appeared in the speech of young speakers (e.g., *yom-asase(-ru)* 'cause to read'), apparently limited to the permissive causative reading. These related forms appear to have the same properties as the corresponding readings of *-(s)ase(-ru)*, and therefore they will not be mentioned below.

## 6.2 Functional Structure and Biclausal Analysis

### 6.2.1 The Issue of Biclausality

As I pointed out briefly above, a major issue concerning the Japanese morphological causative has been its biclausal properties. Shibatani (1973a, 1976a, b, 1978) and Kuno (1973, 1983) have claimed that Japanese morphological causatives are biclausal in Deep Structure but monoclausal

<sup>5</sup>It must be noted, however, that Kuroda (1981, 1990) presents the following sentence as a case where the causative morpheme occurs as an independent surface word.

(i) %Jon wa Biru ni hon o yom-e-naku sase-ta.  
 John Top Bill Dat book Acc read-Pot-Neg Caus?-Past  
 'John made Bill not able to read a book.'

Some speakers do accept this sentence, though the causative verb *suru* 'make' is preferred. If *sase* in (i) is in fact the surface realization of the causative morpheme, it must be explained why it does not surface as one word in sentences like (8).

in Surface Structure (see also Marantz 1984). Their arguments are made mostly on the basis of evidence from *ni*-causatives, but they assume that their conclusions are true of all morphological causative expressions in Japanese. The evidence for the biclausality of Japanese morphological causatives includes reflexivization (Kuroda 1965a, Shibatani 1973a, 1976a, 1978, Kuno 1973) and honorification (Kuno 1983), which suggest that the causee argument has subject properties, as well as verbal anaphora and the ambiguity of adverb interpretation (Shibatani 1973a, 1976a, 1978). Shibatani (1973a, 1976a, 1978) carefully contrasts these morphological causatives with lexical causatives (semantically causative verbs that do not have a causative morpheme),<sup>6</sup> which do not exhibit these biclausal properties. In the Transformational Grammar in which Shibatani and Kuno were working at the time, the biclausal structure was reduced to a monoclausal Surface Structure by Predicate Raising and subsequent Tree Pruning of an S with no predicate.

A central task confronting later analyses of Japanese causatives has been how to represent this kind of dual status of causative predicates in various frameworks. Ishikawa (1985), for example, has proposed an LFG analysis of this construction, and suggested that Japanese morphological causatives are biclausal in f-structure (involving an XCOMP) and monoclausal in c-structure. Working within Government and Binding Theory, Kitagawa (1986) treats morphological causatives as monoclausal in D- and S-Structure, but complex in LF. Dubinsky (1985, 1994) has proposed a Relational Grammar account involving Clause Union or Predicate Union.

The dual status of causatives has also been treated in terms of a GB analysis in which two different phrase structures are available to a sentence at the same time (e.g., Zubizarreta 1987). Such proposals about Japanese causatives have been made by Di Sciullo & Williams (1987) and by Miyagawa (1987b). In this approach, Japanese morphological causatives have a simplex structure in one structure (Di Sciullo & Williams' morphological structure) and a complex structure in the other (Di Sciullo & Williams' syntactic structure). This approach is similar to Ishikawa's LFG analysis in the sense that two distinct structures are co-descriptions of the same sentence and are simultaneously available.

One major point at which the present work diverge from these previous works is that it does not treat all morphological causatives uniformly as regards their biclausal properties. I will argue that coercive causatives are functionally monoclausal, while permissive causatives and persuasive

<sup>6</sup>There has been some confusion about the use of this term in the literature. Givón (1976), for example, uses the term lexical causative to refer to morphological (affixal) causatives.

causatives are functionally biclausal (although the data concerning persuasive causatives are somewhat murky). In other words, sentence (1a) in its coercive causative reading has a monoclausal f-structure with both John and Bill governed by the predicate ‘cause to go’ (cf. (11a) in Chapter 2). By contrast, sentence (1a) in its implicit permissive reading and sentence (1b) in both persuasive and explicit permissive readings involve a biclausal f-structure in which the base verb heads the XCOMP of the causative morpheme (cf. (10a) Chapter 2).

### 6.2.2 Causativization of Intransitive Verbs

In support of this analysis, let us first consider evidence from the causativization of an intransitive base verb. The first three pieces of evidence concern the grammatical subject properties of a causee argument: subject honorification, reflexivization, and control. The fourth and the fifth involve adjunct interpretation and verbal anaphora.

#### 6.2.2.1 Subject Honorification

First, consider subject honorification in the *o-V ni naru* form (2.2.1.2). The relevant question is whether the causative predicate as a whole or just the base verb gets the honorific marking  $\lambda$  i.e., whether we have *o-V-(s)ase ni naru* or *o-V ni nar-aseru*. If the base verb alone can get honorific marking, such marking suggests that the logical subject of the base verb (causee) is functionally a grammatical subject.

In the case of permissive causation, as Kuno (1983) has pointed out, it is possible to place honorific marking on the base verb alone, whether the causee is marked in the accusative or the dative; the causative morpheme will then appear on *naru* and not on the base verb. In (10a) and (10b) below honorific marking is placed on the base verb of *yasum-ase(-ru)* ‘cause to have a rest’. These sentences are both acceptable to me, showing that both dative- and accusative-marked causees can be the target of respect with regard to subject honorification, and hence that they are functionally subjects.

- (10) a. Sensei ni wa [manzoku ga iku made] o-yasumi ni  
 teacher Dat Top satisfaction Nom go till H-rest Cop  
 nar-asete oku no ga ii deshoo.  
 become-Caus leave Nmz Nom good Cop  
 ‘It would be good to leave the teacher to have a rest till he/she is satisfied.’

- b. Sensei o [manzoku ga iku made] o-yasumi ni  
 teacher Acc satisfaction Nom go till H-rest Cop  
 nar-asete oku no ga ii deshoo.  
 become-Caus leave Nmz Nom good Cop  
 'It would be good to leave the teacher to have a rest till he/she is satisfied.'

In the case of inducing causation, it has generally been regarded as impossible to place honorific marking on the base verb (see Shibatani 1978, Kuno 1983). For example, (11) below, which is intended to represent persuasive inducing causation, is unacceptable.

- (11) \*Karera wa [shiburu] sensei ni mo soko made  
 they Top hesitate teacher Dat too there as.far.as  
 o-hashiri ni nar-ase-ta.  
 H-run Cop become-Caus-Past  
 'They made the hesitant teacher run there.' (intended)

A large part of the problem with this honorific marking, however, appears to be the pragmatic infelicity of a non-honorable person making an honorable person do something. Much of this strangeness is removed when honorific marking is also placed on the causative morpheme, so that the causer as well as the causee is honored. An example is (12a). The corresponding coercive *o*-causative in (12b) is much less acceptable.

- (12) a. ?Kantoku wa kinori shi-nai Tanaka-sensei ni mo  
 manager Top unwilling Tanaka-teacher Dat too  
 soko made o-hashiri ni nar-ase-rare-mashi-ta.  
 there as.far.as H-run Cop become-Caus-Hon-Pol-Past  
 'The manager made the unwilling teacher Tanaka run there, too.'
- b. \*Kantoku wa muriyari Tanaka-sensei o  
 manager Top forcibly Tanaka-teacher Acc  
 soko made o-hashiri ni nar-ase-rare-mashi-ta.  
 there as.far.as H-run Cop become-Caus-Hon-Pol-Past  
 'The manager forcibly made the teacher Tanaka run there, too.'  
 (intended)

The placing of honorific marking on the causativized verb as a whole presents the reverse situation. Consider the sentences below, in which the whole entire causative verb receives *o-V ni naru* honorific marking.

- (13) a. Sensei wa Jon o muriyari o-hashir-ase ni nat-ta.  
 teacher Top John Acc forcibly H-run-Caus Cop become-Past  
 ‘The teacher forcibly made John run.’
- b. ??Sensei wa shiburu Jon ni mo o-hashir-ase ni natta.  
 teacher Top hesitate John Dat too H-run-Caus Cop become-Past  
 ‘The teacher made hesitant John run, too.’
- c. ??Sensei wa [“iidaroo!” to itte] Jon ni mo  
 teacher Top good Comp say John Dat too  
 o-hashir-ase ni nat-ta.  
 H-run-Caus Cop become-Past  
 ‘The teacher made John run, too, saying “It is OK.”’
- d. ??[PRO mite mi-nu huri o shite] sensei wa  
 look look-Neg manner Acc do teacher Top  
 Jon o o-hashir-ase ni nat-ta.  
 John Acc H-run-Caus Cop become-Past  
 ‘Pretending not to see it, the teacher let John run.’

The coercive *o*-causative sentence (13a) is acceptable; the persuasive *ni*-causative sentence (13b) is unacceptable, as are both the explicit permissive causative sentence (13c) and the implicit permissive causative (13d). This is consistent with the present analysis (whereby coercive causatives are functionally monoclausal but the other types are biclausal) if subject honorific marking cannot be placed on a unit that corresponds to two or more PREDs at f-structure (i.e., a unit having two or more SUBJs).<sup>7</sup> Whatever the reason, however, such differences in the pattern of honorific marking can be used to disambiguate causative sentences (see below).

#### 6.2.2.2 Reflexivization

The next piece of evidence comes from reflexivization. First, both implicit and explicit permissive causatives clearly allow the *jibun* = causee reading, as shown in (14).

<sup>7</sup>Cf. Dubinsky’s (1994:73) Subject Honorification Condition: in order to trigger subject honorification, an NP must be a final 1 [=surface subject] in the P-sector [=initial division] of the predicate on which the morphology is realized.

- (14) Jon<sub>i</sub> wa Marii<sub>j</sub> {ni/o} jibun<sub>i,j</sub> no ie de hatarak-asete oita.  
 John Top Mary Dat/Acc self Gen house Loc work-Caus left  
 ‘John let Mary work in his/her house.’

The same appears to be true of persuasive inducing causatives, but not of coercive inducing causatives. Consider the sentences in (15).

- (15)a. Jon<sub>i</sub> wa [PRO muri o itte ] Marii<sub>j</sub> ni mo  
 John Top difficulty Acc say Mary Dat too  
 jibun<sub>i,j</sub> no ie de hatarak-ase-ta.  
 self Gen house Loc work-Caus-Past  
 ‘John made Mary work in his/her house by asking a big favor.’
- b. Jon<sub>i</sub> wa muriyari Marii<sub>j</sub> o jibun<sub>i,?j</sub> no ie de  
 John Top forcibly Mary Acc self Gen house Loc  
 hatarak-ase-ta.  
 work-Caus-Past  
 ‘John forcibly made Mary work in his/?her house.’
- c. Jon-sensei<sub>i</sub> wa Marii-sensei<sub>j</sub> o go-jibun<sub>i,??j</sub> no ie de  
 John-teacher Top Mary-teacher Acc H-self Gen house Loc  
 o-hatarak-ase ni nari-mashi-ta.  
 H-work-Caus Cop become-Pol-Past  
 ‘The teacher John had the teacher Mary work in his/\*her house.’

(15a), an example of persuasive causation, shows that the reflexive *jibun* can have a causee as well as a causer as its antecedent when the causee is marked in the dative. (15b), on the other hand, shows that the accusative-marked causee cannot naturally function as antecedent of *jibun* when the sentence is interpreted as coercive causation. The contrast is especially clear when the causativized verb as a whole receives honorific marking as in (15c), which reinforces the coercive causation reading.

Thus, just as with subject honorification, reflexivization patterns show that the causee of the coercive causative is not a grammatical subject and hence that the coercive causative is functionally monoclausal; the causee of the other causative types is a grammatical subject, and hence they are functionally biclausal.

### 6.2.2.3 Control

The third type of evidence involves control. First, both implicit and explicit permissive causatives readily allow the subject of an adverbial clause to be controlled by a causee as well as a causer. This is true in (16), in which the subject of a *-nagara* clause is controlled.

- (16) [PRO oogoe o            dashi-nagara] sensei wa  
          loud.voice Acc utter-while    teacher Top  
      sono seito-tachi {ni/o} hashir-asete oita.  
      the student-Pl Dat/Acc run-Caus left  
      ‘The teacher made the students run, shouting in a loud voice.’

The same is also true (though somewhat less clearly) of persuasive inducing causatives but it is not true of coercive causatives. This is shown in (17a) and (17b).

- (17) a. [PRO oogoe o            dashi-nagara] sensei wa  
          loud.voice Acc utter-while    teacher Top  
      shiburu seito-tachi ni mo hashir-ase-ta.  
      hesitate student-Pl Dat too run-Caus-Past  
      ‘The teacher made hesitant students run, shouting in a loud voice.’
- b. [PRO oogoe o            dashi-nagara] sensei wa  
          loud.voice Acc utter-while    teacher Top  
      (muriyari) shiburu seito-tachi o hashir-ase-ta.  
      forcibly hesitate student-Pl Acc run-Caus-Past  
      ‘Shouting in a loud voice, the teacher forcibly made hesitant students run.’

In my judgment sentence (17a) allows the controller of the subject of the embedded clause to be either a causer or a causee, consistent with the biclausal analysis of this construction. (The controller = causee reading is more clearly available when the adverbial clause is stressed.) (17b), on the other hand, is not ambiguous: the embedded subject can only be interpreted as controlled by the causer. Again, coercive causatives stand apart from the other types; the control data support a biclausal analysis of all types except coercive causatives.

It should be noted that the control of the subject of *-nagara* clause by the causee in the coercive reading is relatively more acceptable when the adjunct clause is adjacent to the main predicate, as in the following sentence.

- (18) Sensei wa muriyari [shiburuseito-tachi] o  
      teacher Top forcibly hesitate student-Pl Acc  
      [PRO oogoe o            dashi-nagara] hashir-ase-ta.  
          loud.voice Acc utter-while    run-Caus-Past  
      ‘The teacher forcibly made the hesitant students run, shouting in a loud voice.’

This observation, however, is not inconsistent with the functional monoclausality of this sentence. As pointed out in Chapter 2 (sec. 2.2.1.3), the subject of a *-nagara* clause can be controlled by the *logical* subject when the *-nagara* clause is adjacent to the predicate. The control pattern seen in (18) is available because of the logical subject status of the causee argument.

#### 6.2.2.4 Adjunct Interpretation

We turn next to adjunct interpretation. Adverbial modification of the base verb or the causative morpheme alone is restricted in coercive causatives, while the other causatives (especially permissive causatives) readily allow adverbials to modify either verb. First, consider manner adverbials. Permissive causatives allow a manner adverbial to modify the base verb alone, as shown in (19).

- (19) Jon wa yukkuri sono uma {o/ni mo} hashir-asete oita.  
 John Top slowly the horse Acc/Dat too run-Caus left  
 ‘John let the horse run slowly.’

The adverbial *yukkuri* in (19) can readily be interpreted as modifying the base verb alone (especially when the adverb is stressed). The same pattern is observed in persuasive inducing causatives, but not in coercive inducing causatives. Consider the causatives in (20). (20a) is interpreted in the persuasive causation reading, and (20b), the coercive causation reading.

- (20) a. Jon wa yukkuri [shiburu] Biru ni (mo) hashir-ase-ta.  
 John Top slowly hesitate Bill Dat too run-Caus-Past  
 ‘John made hesitant Bill run slowly.’  
 b. ?Jon wa yukkuri muriyari Biru o hashir-ase-ta.  
 John Top slowly forcibly Bill Acc run-Caus-Past  
 ‘John forcibly made Bill run slowly.’

The adverbial *yukkuri* in (20a) can be interpreted as modifying Bill’s running. In (20b), on the other hand, the same adverbial can be only marginally interpreted as modifying the caused process. (The modification of the causation event is semantically strange.)

It is not true, however, that manner adverbials can never modify the base verb alone in coercive causatives. Such modification is possible when the adverbial is placed in certain positions (cf. Miyagawa 1980, Ishikawa 1985). An example is (21), in which the manner adverbial occurs adjacent to the causative verb.

- (21) Jon wa muriyari kodomo o yukkuri aruk-ase-ta.  
John Top forcibly child Acc slowly walk-Caus-Past  
'John forcibly made the child walk slowly.'

This reading is possible because such a manner adverbial is interpreted with respect to the logical subject of the base verb, just as in the *-nagara* clause above.

A somewhat different pattern of adverbial modification obtains with time and place adverbials. Shibatani (1976a) claims that, in morphological causatives in general, time and place adverbials are interpreted as modifying the caused event if the causing and the caused events take place at two different times or locations, or as modifying both causing and caused events if they both take place at the same time or location. This means that such adverbials cannot be interpreted as indicating the time or location of the causing event only. This observation is consistent with the unacceptability of (22a) and (22b) below as coercive causative sentences. The unacceptability is not simply due to semantic factors, since it is possible to say (23a) and (23b), in which the time or location of the causing event is expressed within an adverbial clause, not as an adjunct of the causative predicate.

- (22) a. ??Jon wa muriyari sono heya de  
John Top forcibly the room Loc  
urusai sono ko o tonari no heya de asob-ase-ta.  
noisy the child Acc next Gen room Loc play-Caus-Past  
'In the room John forcibly made the noisy child play in the next room.'
- b. ??Oo wa kinyoobi ni muriyari  
King Top Friday Loc forcibly  
doyoobi ni meshitsukai o ie ni kaer-ase-ta.  
Saturday Time servant Acc house Goal return-Caus-Past  
'On Friday, the King forcibly made the servant go back home on Saturday.'

- (23) a. Jon wa [sono heya de kitsuku shikaritsukete]  
 John Top the room Loc severely scold  
 urusai sono ko o tonari no heya de asob-ase-ta.  
 noisy the child Acc next Gen room Loc play-Caus-Past  
 'Scolding him/her severely in the room, John made the noisy  
 child play in the next room.'
- b. Oo wa [kinyoobi ni meirei o dashite] muriyari  
 King Top Friday Loc order Acc issue forcibly  
 doyoobi ni meshitsukai o ie ni kaer-ase-ta.  
 Saturday Time servant Acc house Goal return-Caus-Past  
 'Issuing an order on Friday, the King forcibly made the servant  
 go back home on Saturday.'

This restriction on the adverbial modification of the causative morpheme only is consistent with the functional monoclausal analysis of coercive causatives.

However, the restriction does not hold for all types of causatives. Permissive causatives appear to allow time and place adverbials to modify either the causing or the caused event, as long as such a reading is pragmatically plausible. For example (24a) and (24b) below are possible in the permissive causative reading. This suggests that such causatives have biclausal f-structure.

- (24) a. Sono heya de Jon wa kodomo o  
 the room Loc John Top child Acc  
 omouzonbun tonari no heya de asob-asete i-ta.  
 satisfactorily next Gen room Loc play-Caus Asp-Past  
 'In the room, John allowed the child to play in the next room as  
 much as he/she likes.'
- b. ?Sono toki, Jon wa Marii ni mo  
 the time John Top Mary Dat too  
 tsugoo no ii toki ni kaer-ase-ta.  
 convenient time Time return-Caus-Past  
 'At that time, John let Mary go home whenever was convenient to  
 her.'

#### 6.2.2.5 Verbal Anaphora

Finally, consider verbal anaphora. Shibatani (1976a:249) claims that

anaphoric *soo suru* ‘do so’ can replace the complement of the causative morpheme. In my judgment, this replaceability subtly depends on the type of causatives, in a way predicted by the present analysis. With permissive causatives, *soo suru* replacement is completely possible regardless of the case marking of the causee.

- (25) Jon wa    Marii {o/ni}    hashir-asete    oi-ta.  
       John Top Mary Acc/Dat run-Caus    leave-Past  
       Biru {mo/ni mo} soo s-asete    oi-ta.  
       Bill too/Dat too    so    do-Caus leave-Past  
       ‘John let Mary run. He let Bill do so, too.’

Persuasive causatives are similar to permissive causatives in this respect; but coercive causatives are somewhat different. Consider (26a) and (26b).

- (26) a. Jon wa    shiburu    Marii ni mo    soko made    hashir-ase-ta.  
       John Top hesitate Mary Dat even there as.far.as run-Caus-Past  
       Biru ni mo    soo s-ase-ta.  
       Bill Dat too    so    do-Caus-Past  
       ‘John made hesitant Mary run there. He made Bill do so, too.’  
       b. ?Jon wa    muriyari    Marii o    hashir-ase-ta.  
       John Top forcibly Mary Acc run-Caus-Past  
       Biru mo    soo    s-ase-ta.  
       Bill too    so    do-Caus-Past  
       ‘John forcibly made Mary run. He made Bill do so, too.’

What (26) shows is that a *ni*-causative involving persuasive causation allows the replacement of a complement by *soo suru*, while this is not possible with a coercive *o*-causative without some loss of acceptability.<sup>8</sup>

In sum, the arguments presented in 6.2.2.1 through 6.2.2.5 above all support the functional monoclausality of coercive causatives and biclausality of the other types.

### 6.2.3 Causativization of Transitive Verbs

As has been mentioned, accusative case marking of a causee is not possible

<sup>8</sup>The following sentence is acceptable, though stylistically awkward.

- (i) Jon wa    soko ni    itta. Nani ga    kare o    soo    s-ase-ta no ka.  
       John Top there Goal went what Nom he Acc so    do-Caus-Past Q  
       ‘John went there. What made him do so?’

Presumably this sentence is not a case of coercive causation but of persuasive causation.

with causatives formed from a transitive base verb. This does not mean, however, that there are no cases of coercive causatives (or implicit permissive causatives) with a transitive base verb; rather, coercive causation is expressed with *ni* marking on the causee. That is, the semantic contrast between *o*-causatives and *ni*-causatives is neutralized when the base verb is transitive (Kuroda 1965a).

This is most clearly seen in the *ni* marking of an inanimate causee. In the case of causatives with an intransitive base verb, a non-sentient entity cannot be a *ni*-marked causee, as it does not possess any will of its own to which a causer might appeal in persuasive (and explicit permissive) causatives. However, *ni* marking of an inanimate causee is possible with a coercive causative formed from a transitive base verb, as in (27).<sup>9</sup>

- (27) Jon wa sono kikai ni gasu o hunshutsu s-ase-ta.  
 John Top the machine Dat gas Accspout-Caus-Past  
 'John made the machine spout out the gas.'

Some transitive-based causatives with a human causee can also be regarded as coercive. In coercive causation, the caused event is causer-controlled (6.1.1 above). The sentences in (28) are coercive causatives by this definition.

- (28) a. Sensei wa seito ni kyookasho o yom-ase-ta.  
 teacher Top pupil Dat textbook Acc read-Caus-Past  
 'The teacher made the pupils read the textbook.'
- b. Hahaoya wa akanboo ni zubon o hak-ase-ta.  
 mother Top baby Dat pants Acc put.on-Caus-Past  
 'The mother made the baby put on the pants (dressed the baby in the pants).'

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<sup>9</sup>It is not entirely clear whether the semantic distinction between *ni*-causatives and *o*-causatives is completely neutralized in causatives with a transitive base verb. Ishikawa (1985) cites the unacceptability of (i) below to suggest that causatives with a transitive base verb must have a sentient causee, unlike *o*-causatives with an intransitive base verb.

- (i) \*Jon wa sono hiitaa ni heya o atatame-sase-ta.  
 John Top the heater Dat room Acc warm-Caus-Past  
 'John made the heater warm the room.' (intended)

However, this is not convincing, given that (ii) is awkward to begin with.

- (ii) ?Sono hiitaa ga heya o atatame-ta.  
 the heater Nom room Acc warm-Past  
 'The heater warmed the room.' (intended)

In (28a), the teacher exercises his/her authority as a teacher to bring about the caused event, so that the caused event does not depend on the will of the causees. In (28b), the mother acts on the pants as well as the baby to bring about the caused event, so that the caused event can be accomplished without appealing to the will (decision) of the causee. A reading similar to (28b) is possible with causative predicates such as *tabe-sase(-ru)* (eat-Caus) ‘make ... eat, feed’, *nom-ase(-ru)* (drink-Caus) ‘make ... drink, feed’, *shir-ase(-ru)* (know-Caus) ‘let ... know, inform’, and *kik-ase(-ru)* (hear-Caus) ‘let ... hear’. In all of these cases, the causee is in some sense the recipient of the whole action. (Certain ditransitive lexical causatives like *kise(-ru)* ‘put ... on (someone’s body), dress’, *mise(-ru)* ‘show’, and *oshie(-ru)* ‘teach’ have similar meanings.) I will call this subtype of coercive causatives the *hak-aseru* type.

In what follows, I will present evidence showing that coercive inducing causatives formed from a transitive base verb are functionally monoclausal, while persuasive inducing causatives and permissive causatives are functionally biclausal <sup>4</sup> just as was the case with causatives formed from an intransitive base verb.

#### 6.2.3.1 Subject Honorification

The first type of evidence comes from honorific marking with *o-V ni nar(-u)*. Honorific marking can be placed on the transitive base verb to which the causative morpheme is suffixed, i.e., *o-V ni nar-ase(-ru)* (Kuno 1983). In this case, the causative is interpreted as a permissive causative, or (though not totally naturally) as a persuasive inducing causative. (29a) is a case of permissive causation and (29b) is a case of persuasive inducing causation. However, coercive inducing causation reading is not available with honorific marking on the base verb, as shown in (29c).

- (29) a. Sensei ni wa [manzoku no iku made] sono hon o  
 teacher Dat Top satisfaction Gen go till the book Acc  
 o-yomi ni nar-asete oki-mash-oo.  
 H-read Cop become-Caus leave-Pol-Hor  
 ‘Let’s let the teacher read the book till he/she is satisfied.’
- b. ?Daijin wa [PRO shikiri ni susumete] oosama ni mo  
 minister Top eagerly recommend King Dat too  
 sono hon o o-yomi ni nar-ase-rare-mashi-ta.  
 the book Acc H-read Cop become-Caus-Hon-Pol-Past  
 ‘Recommending it eagerly, the minister made the King read the book.’

- c. \*Sono sensei wa Yamada sensei ni sono hon o  
 the teacher Top Yamada teacher Dat the book Acc  
 muriyari o-yomi ni nar-ase-rare-mashi-ta.  
 forcibly H-read Cop become-Caus-Hon-Pol-Past  
 ‘The teacher forcibly made the teacher Yamada read the book.’

The mirror-image difference is observed when honorific marking is placed on the causativized verb as a whole, i.e., *o-V-(s)ase ni nar(-u)*. Such forms must assume the coercive causation reading. One example is (30).

- (30) Sensei wa Jon ni sono hon o o-yom-ase ni natta.  
 teacher Top John Dat the book Acc H-read-Caus Cop became  
 ‘The teacher made John read the book.’

This sentence can be interpreted only as a coercive causative; it goes naturally with an adverbial like *muriyari* ‘forcibly’, but it cannot take adjuncts that are compatible only with persuasive inducing causation or permissive causation, as shown in (31).

- (31) a. ?Sensei wa [PRO shikiri ni susumete] nantoka kare ni mo  
 teacher Top eagerly recommend somehow he Dat too  
 sono hon o o-yom-ase ni nari-mashi-ta  
 the book Acc H-read-Caus Cop become-Pol-Past  
 ‘Recommending it eagerly, the teacher managed to make him read the book, too.’  
 (persuasive causation)
- b. ??Sensei wa [PRO “iidaroo!” to itte] Jon ni mo  
 teacher Top OK Comp say John Dat too  
 sono hon o o-yom-ase ni nari-mashi-ta  
 the book Acc H-read-Caus Cop become-Pol-Past  
 ‘Saying, “It is OK”, the teacher let John read that book.’  
 (explicit permission)
- c. \*Sensei wa [PRO mite mi-nu huri o shite] Jon ni  
 teacher Top look look-Neg manner Acc do] John Dat  
 sono hon o o-yom-ase ni nari-mashi-ta  
 the book Acc H-read-Caus Cop become-Pol-Past  
 ‘Pretending not to notice it, the teacher let John read that book.’  
 (implicit permission)

This pattern of subject honorification is identical with that observed in causatives formed from intransitive base verbs.

### 6.2.3.2 Adjunct Interpretation, Reflexivization, and Control

The functional monoclausality of coercive causatives with a transitive base verb is also evidenced by the facts of adjunct interpretation. Consider (32).

- (32) a. Sensei wa Jon ni odayakana hyoojoo de  
 teacher Top John Dat mild expression Inst  
 sono hon o yom-ase-ta.  
 the bookAcc read-Caus-Past  
 ‘The teacher had John read the book with a mild expression.’  
 (ambiguous)
- b. Sensei wa Jon ni odayakana hyoojoo de  
 teacher Top John Dat mild expression Inst  
 sono hon o o-yom-ase ni natta.  
 the book Acc H-read-Caus Cop become-Past  
 ‘With a mild expression, the teacher made John read the book.’

Sentence (32b) is a coercive causative, given the honorific marking on the whole causativized verb, while (32a) need not. In (32a) the adverbial phrase *odayakana hyoojoo de* ‘with a mild expression’ is interpreted as ambiguous. In (32b), however, the adverbial phrase is readily interpreted with respect to the causative morpheme, but not naturally with respect to the caused event. This suggests that, as observed in 6.2.2.4, when a causative sentence is interpretable only in the coercive reading, the interpretation of adjunct modification is restricted <sup>Δ</sup> a sign of functional monoclausality.

The evidence of reflexivization is also consistent with the monoclausal analysis of coercive causatives. While both a causer and a causee can be an antecedent of *jibun* in (33a), only the causer is fully natural as an antecedent when honorific marking is placed on the causative predicate as a whole, as in (33b).

- (33) a. Joni wa Marii ni hon o jibun i j no heya de  
 John Top Mary Dat book Acc self Gen room Loc  
 yom-ase-ta.  
 read-Caus-Past  
 ‘John made Mary read a book in his/her room’

- b. Koochoo-sensei<sub>i</sub> wa Mariko-sensei<sub>j</sub> ni hon o  
 president Top Mariko-teacher Dat book Acc  
 go-jibun<sub>i,??</sub> no heya de o-yom-ase ni natta.  
 H-self Gen room Loc H-read-Caus Cop became  
 ‘The president made the teacher Mariko read a book in his/??her  
 room.’

The same pattern holds true of control. The causee can be a controller naturally in (34a) but not in the coercive causative (34b).

- (34) a. Sensei<sub>i</sub> wa Jon<sub>j</sub> ni [PRO<sub>i,j</sub> terebi o mi-nagara]  
 teacher Top John Dat television Acc watch-while  
 hon o yom-ase-ta.  
 book Acc read-Caus-Past  
 ‘The teacher made John read a book while watching TV.’  
 (ambiguous)
- b. Sensei<sub>i</sub> wa Jon<sub>j</sub> ni [PRO<sub>i,??</sub> terebi o mi-nagara]  
 teacher Top John Dat television Acc watch-while  
 hon o o-yom-ase ni natta.  
 book Acc H-read-Caus Cop became  
 ‘Watching TV, the teacher made John read a book.’  
 (unambiguous)

### 6.2.3.3 *Desiderativization and Passivization*

Further evidence for the present proposal comes from desiderativization and passivization of causative predicates. In Chapter 5 (sec. 5.5) I argued that nominative case marking of an object is permitted only when the predicate that governs it in functional structure is stative. This means that if the placement of the stativizing desiderative *-tai* on the causative morpheme permits the nominative marking of an object NP, then the causative predicate must be functionally monoclausal. The object case marking of desiderativized causative predicates is in fact consistent with the present analysis of causatives as well as desideratives. Here nominative marking of the object is allowed only in the case of coercive causation, as shown in (35a) and (35b).

- (35) a. Boku wa kodomo ni konna hon {ga/o} yom-ase-takat-ta.  
 I Top child Dat like.this book Nom/Acc read-Caus-want-Past  
 ‘I wanted to make my child read this kind of book’  
 (‘I wanted to buy (borrow) this kind of book for my child to read.’)

- b. Boku wa Jon ni wa manzoku ga iku made  
 I Top John Dat Foc satisfaction Nom go till  
 sono hon { \*ga/o } yom-ase-takat-ta.  
 the book Nom/Acc read-Caus-want-Past  
 'I wanted to let John read the book till he got satisfied.'

Sentence (35a), which can be interpreted as a coercive causative, allows the nominative case marking of the object. Given the meaning of (35b), on the other hand, this sentence cannot be interpreted as coercive, and nominative marking is excluded.

Nominative-marking desiderativized coercive causatives exhibit other properties of functionally monoclausal predicate. For example, the *jibun* = causee reading is not acceptable in nominative-marking desiderativized causatives such as (36). This reading is acceptable if nominative marking on the object NP is replaced by accusative marking.

- (36) Boku<sub>i</sub> wa musume<sub>j</sub> ni jibun<sub>i,\*j</sub> no hon ga yom-ase-takat-ta.  
 I Top daughter Dat self Gen book Nom read-Caus-want-Past  
 'I wanted my daughter to read his/\*her book.'

Finally, consider the passivizability of the causative of a transitive verb. Since Harada (1973), it has often been claimed that the object of the base verb cannot be the subject of the passivized causative verb, though the causee can. Consider sentences (37b) and (37c), which are passive counterparts of (37a). The difference between (37b) and (37c) is that the passive subject is the causee in (37b), while it is the base patient in (37c).

- (37) a. Jon wa Biru ni sono hon o yom-ase-ta.  
 John Top Bill Dat the book Acc read-Caus-Past  
 'John made Bill read the book.'
- b. Biru wa Jon ni sono hon o yom-ase-rare-ta.  
 Bill Top John by the book Acc read-Caus-Pass-Past  
 'Bill was made to read the book by John.'
- c. \*Sono hon wa Jon ni Biru ni yom-ase-rare-ta.  
 the book Top John by Bill Dat read-Caus-Pass-Past  
 'The book was made by John to be read by Bill.' (intended)

As shown, (37b) is acceptable, but (37c) is not. The unacceptability of sentences like (37c) has been related to the biclausality of morphological causatives (e.g., Inoue 1976a, Marantz 1984). However, Ishikawa (1985) has observed that some speakers do accept certain passivized causative sentences with the patient of a base verb as passive subject. (38a) is Ishikawa's example; (38b), my own example, sounds more acceptable than (38a).

- (38) a. ?[PRO Hukei o kanshin s-aseru tame] totemo muzukashii  
 parents Acc admire-Caus Pur particularly difficult  
 ji ga (sensei ni yotte) kodomo-tachi ni kak-ase-rare-ta.  
 letter Nom teacher by child-Pl Dat write-Caus-Pass-Past  
 'In order to impress the parents, particularly difficult (Chinese)  
 characters were made (by the teacher) to be written by the children.'
- b. Sono gohan wa mada dare ni mo tabe-sase-rarete i-nai.  
 the food Top yet anyone Dat too eat-Caus-Pass Asp-Neg  
 'The food has not yet been made to be eaten by anyone.'

For our purpose, the point of interest here is that sentences like these are acceptable only in coercive causation reading. ((38a) represents authority-based causation, while (38b) is the *hak-aseru* type of coercive causative (sec. 6.3.2), in which the causee is the recipient of the whole event). This observation is consistent with the proposed monoclausal analysis of the coercive causative, and biclausal analysis of the other three causatives.

The acceptability of sentences like those in (38) constitutes counterevidence to Miyagawa's (1989b) account of passivization in Japanese. He claims that passive morpheme *-rare* absorbs the case-assigning ability of the verb to which it is directly suffixed, although certain "transparent" morphemes can intervene. (He characterizes a transparent morpheme as one that "does not alter the fundamental lexical properties of its base (i.e., lexical category, case, and thematic role)" (p. 186). Miyagawa claims that the causative morpheme *-(s)ase* cannot be regarded as transparent; therefore, he claims, *-rare* cannot absorb the case-assigning ability of the base verb, and hence the base patient cannot be a passive subject. The existence of sentences in (38), however, suggests that this account cannot be maintained. The functional complexity determined by each morpheme in a complex predicate must be taken into account.

6.2.3.4 The Case Marking of the Causee and the Double-*o* Constraint

One problematic issues involved in Japanese morphological causatives is how to rule out the accusative marking of a causee in the causativization of a transitive verb. As mentioned in 2.2.2.2, this prohibition has been explained in terms of the double-*o* constraint, which in this case is the “deep” prohibition against two direct object NPs being governed by a single predicate rather than the “surface” prohibition against two cooccurring *o*-marked NPs (Kuroda 1978, Poser 1983). This double-*o* constraint, however, is difficult to accommodate in a functional biclausal analysis of causatives in Japanese (see Ishikawa 1985, Miyagawa 1987b). If Japanese morphological causatives are functionally biclausal, then the two object NPs (i.e., the patient of causation (i.e., causee) and the patient of the base verb) will appear in two different clauses in f-structure, and so the deep double-*o* constraint (which checks the number of direct objects in a single clause) does rule out such a case. To handle this situation, Ishikawa (1985:100) had to resort to a rather ad hoc operation of Object Function Sharing, by which the OBJ of an XCOMP (headed by the base verb) is shared by the upper causative verb (*s)ase*.

In the present analysis this problem is solved in the following way. Causatives in which a causee is marked in the accusative are coercive inducing causatives and implicit permissive causatives. In the case of coercive causation, I have argued that causative predicates are functionally monoclausal. Therefore at the level of f-structure the two would-be direct object (the causee and the patient of the base verb) would both be in the same clause, and accordingly such a sentence would be ruled out by the deep double-*o* constraint. Instead, the causee is realized as an indirect object, and marked with *ni*.

The deep double-*o* constraint as formulated herein does not rule out the two accusative NPs appearing in an implicit permissive causative, given that such causatives are functionally biclausal. In fact, this appears to be consistent with the facts: implicit permissive causatives do not rule out the occurrence of two accusative NPs, at least not as clearly as do coercive causatives. For example, (39a) sounds somewhat better than (39b).

- (39) a. ??Jon wa Biru o sono-mama hon o yom-asete oita.  
           John Top Bill Acc as.it.is book Acc read-Caus leave-Past  
           ‘John let Mary continue to read a book.’
- b. \*Jon wa Marii o muriyari sono hon o yom-ase-ta.  
           John Top Mary Acc forcibly the book Acc read-Caus-Past  
           ‘John forcibly made Mary read the book.’ (intended)

Furthermore, some speakers find that the replacement of *o* by *mo*

significantly improves double-*o* permissive causative sentences, indicating that what is involved here is the “surface” double-*o* constraint, while this is not the case with coercive causatives, as shown in (40).

- (40) a. (?)Jon wa    Marii mo sono-mama    hon o    yom-asete oita.  
           John Top Mary too as.it.is        book Acc read-Caus left  
           ‘John left Mary to continue to read a book, too.’
- b. \*Jon wa    Marii mo muriyari    sono hon o    yom-ase-ta.  
           John Top Mary too forcibly    the    book Acc read-Caus-Past  
           ‘John forcibly made Mary read the book.’ (intended)

These observations suggest that permissive causatives are in fact not subject to the deep double-*o* constraint. This is consistent with the current analysis, in which permissive causatives are functionally biclausal.<sup>10</sup>

<sup>10</sup>The present account of causativization in Japanese is also consistent with the patterns evidenced by multiple causativization. Examples (i) and (ii), first of all, suggest that coercive inducing causatives allow double but not triple causativization of an intransitive verb (Farmer 1984; cf. Miyagawa 1980, Shibatani 1976a).

- (i) Taro wa    (muriyari) Jiro ni    Hanako o    ik-ase-sase-ta.  
       Taro Top forcibly Jiro Dat Hanako Acc go-Caus-Caus-Past  
       ‘Taro (forcibly) made Jiro make Hanako go.’
- (ii) ??Taro wa    (muriyari) Jiro ni    Hanako ni    Mari o    ik-ase-sase-sase-ta.  
       Taro Top forcibly Jiro Dat Hanako Dat Mari Acc go-Caus-Caus-Past  
       ‘Taro (forcibly) made Jiro make Hanako make Mari go.’

By contrast, permissive causatives much more readily accept double and even triple causativization, as suggested by the following sentences.

- (iii) Sensei wa    okusan ni kodomo o    asob-ase-sasete oita.  
       teacher Top wife Dat child Acc play-Caus-Caus left  
       ‘The teacher let his wife let the child play.’
- (iv) Mihari wa sono    otoko ni mo    okusan ni kodomo o  
       guard Top the man Dat wife Dat child Acc  
       asob-ase-sase-sasete oita.  
       play-Caus-Caus-Caus left  
       ‘The guard let the man let his wife let the child play.’

Given the independent, XCOMP status of complementation in permissive causatives, this kind of productive multiple causativization is not surprising.

The reduced acceptability of (ii) above might be attributed to the cooccurrence of two indirect objects in one f-structure. This view is consistent with Farmer’s (1984) observation (based on coercive inducing causative sentences) that a transitive verb yields reduced acceptability when doubly causativized, and a ditransitive verb, even when singly causativized.

### 6.3 Argument Structure of Japanese Causatives

In the previous sections, I have argued that Japanese morphological causatives are functionally biclausal or monoclausal, depending on the type of causation they represent. The question I now turn to is their argument structure. It has been proposed that various readings of Japanese causatives are to be distinguished by differences in their argument structure or some analogous structure. For example, Kuroda (1965a), Kuno (1973), Shibatani (1973), Harada (1973), and Inoue (1986a) have claimed that *ni*-causatives (which they assume to be only permissive or *let*-causatives) are raising predicates, and the causative morpheme in this case has a causer and a caused event as its thematic arguments. The *o*-causatives (which they assume to be only coercive or *make* causatives), on the other hand, are claimed to be control (equi) predicates, and the causative morpheme in this case takes a causer, a causee, and a caused event as its thematic arguments (cf. Alsina 1992; see Nakau 1973 and Tonoike 1978 for a different view). Shibatani (1978) argues that the four types of causatives (my persuasive, coercive, explicit permissive, and implicit permissive) have different thematic role assignment patterns, as represented in (41).

- (41) a. persuasive                      Cause <agent, event <agent, ... >>  
      b. coercive                      Cause <agent, patient, event <agent, ... >>  
      c. explicit permissive      Cause <agent, event <agent, ... >>  
      d. implicit permissive      Cause <experiencer, event <theme, ... >>

In this account, persuasive causatives and explicit permissive causatives (i.e., *ni*-causatives) do not differ in the thematic roles of their arguments.

In my view, the argument structures of the four types of causatives can be characterized as follows. First, consider the persuasive and coercive causatives. The causative morpheme (*s*)*ase* takes causer, causee, and event as its arguments in both readings. This view differs sharply from Shibatani's view of persuasive causatives, in which the causative morpheme does not subcategorize for a causee. The evidence for the presence of a causee argument in persuasive causatives is that the causative morpheme in this reading clearly places a semantic restriction on what can be a causee (Tonoike 1978): it must be a volitional entity, which can exercise its control over the caused event.

Shibatani's analysis, in which the causative morpheme does not assign a thematic role to a causee in the persuasive causative, is motivated by his treatment of the *ni* case marking of the causee: he proposes to treat it in the same way as a demoted agent in a passive sentence, which is also *ni*-marked. However, the *ni*-marking of a causee is clearly different from the *ni*-marking of a demoted subject in passive sentences. For example,

*ni*-marking of a causee is replaced by *e no* or *ni taisuru* when the causative predicate is nominalized, as in (42). This is the pattern that dative/goal *ni* exhibits. The *ni*-marking on a passive agent appears, by contrast, as *ni yoru* in nominals.

- (42) Marui no Jon {e no/ni taisuru} hon no yom-ase-kata  
 Mary Gen John Goal Gen/against book Gen read-Caus-way  
 'Mary's way of making John read a book'

In my view, one central difference between the argument structures of coercive and persuasive inducing causatives is that the former selects for a SUBEVENT, while the latter selects for an EVENT. This difference is a reflection of the fact that the embedded event in coercive causatives is causer-controlled, and in this sense the caused event is not independent of the causing event but is closely interwoven with it. This can be most clearly seen in the *hak-aseru* type of coercive causative, in which the causer acts on the patient of the base verb as well as on the causee. The difference between SUBEVENT and EVENT results in a difference in the complexity of the f-structures onto which these two causatives are mapped.

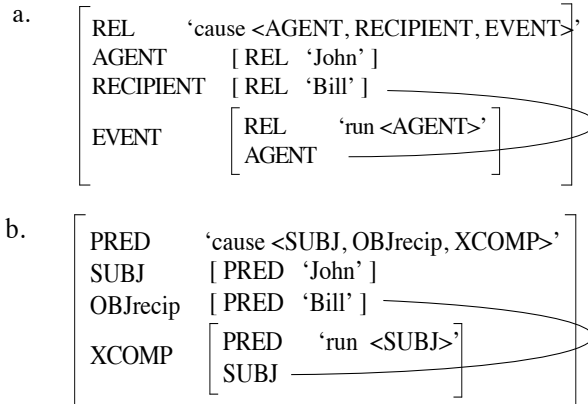
Another difference is that the causee in persuasive causatives is purely Recipient, while the causee in coercive causatives has characteristics of Patient as well. The evidence for this comes from the following Patient test (cf. Jackendoff 1972): a coercive causative sentence (43b) can be an answer to the Patient-frame question (43a), but a persuasive causative sentence (43c) cannot.

- (43) a. John wa Biru ni nani o shi-mashita-ka  
 John Top Bill Dat what Acc do-Pol-Past Q  
 'What did John do to Bill?'  
 b. Kare o soko ni ik-ase-mashi-ta.  
 he Acc there go-Caus-Pol-Past  
 'He made him go there.' (coercive causative)  
 c. Kare ni soko ni ik-ase-mashi-ta.  
 he Dat there go-Caus-Pol-Past  
 'He made him go there.' (persuasive causative)

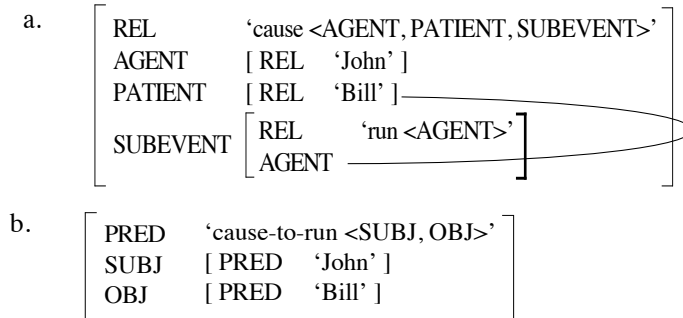
The argument structure of (1b) above when interpreted as a persuasive causative sentence can be represented as (44a), which would be mapped onto the functional structure (44b). The argument structure of (1a) as a coercive causative sentence is represented as (45a), which would be mapped onto the functional structure (45b). (Following Ishikawa (1985) who treats

the *ni*-marked causee as OBJ2, I will treat it as OBJrecipient).<sup>11</sup>

(44)persuasive causative



(45)coercive causative



In the case of functionally biclausal (i.e., persuasive) causatives, the subject of the embedded clause is functionally controlled by the object of the upper clause. In the case of functionally monoclausal (i.e., coercive) causatives, the logical subject of the embedded clause is linked to the patient of the upper clause by argument “fusion” in a-structure (Alsina & Joshi 1991, Alsina 1992, 1993).

In the present analysis, the case-marking difference between persuasive and coercive causatives with an intransitive base verb is a reflection of the above difference between Recipient and Recipient-Patient causee. The pure

<sup>11</sup>Recipient objects in Japanese can be marked either in the dative (e.g., the objects of *kisu suru* ‘kiss’, *kamitsuku* ‘bite at’, *hantai suru* ‘oppose’, etc.) or in the accusative (e.g., the object of *nagusameru* ‘console’); either kind of recipient object can become a passive subject.

Recipient is marked with *ni*. With an intransitive base verb the Recipient-Patient realizes as a direct object with *o* marking; with a transitive base verb, it realizes as an indirect object with *ni* marking in the presence of a more prototypical patient (base patient).<sup>12</sup>

The two types of permissive causatives also have different argument structures. Explicit permissive causatives place a restriction on the causee and thus subcategorize for a causee argument, while implicit causatives do not. For example, (46a) is acceptable, while (46b) is not.

- (46) a. Jon wa sono yasai o kusar-asete oita.  
 John Top the vegetable Acc go.bad-Caus leave-Past  
 'John let the vegetables go bad.' (implicit permissive)

<sup>12</sup>Lexical mapping with coercive causatives in Japanese is essentially the same as with Kichaga causatives, or in fact with any ditransitive predicate in an "object-symmetrical" language (Alsina 1992). In the Lexical Mapping Theory of Alsina (1992) and Bresnan & Zaenen (1990), this mapping would be as follows. (Here I will assume, with Alsina, that the "indirect" object in ditransitive verbs is OBJ, and the "direct" object is OBJpt.) The Recipient-Patient of the causative is intrinsically classified as  $[-r]$ , whereas the Patient of the base verb is classified as  $[-r]$  or  $[+o]$  (see 2.1.3.2). This would make (i) a valid mapping, while (ii) is ruled out because of the violation of the Function-argument Biuniqueness Condition.

(i)

	Cause	<Agent, Recipient-Patient, <Agent, Patient>>	
Intrinsic		$[-o]$	$[-r]$
Mapping Principles		$[-r]$	$[+o]$
		SUBJ	OBJ
			OBJpt

(ii)

	Cause	<Agent, Recipient-Patient, <Agent, Patient>>	
Intrinsic		$[-o]$	$[-r]$
Mapping Principles		$[-r]$	$[+o]$
		* SUBJ	OBJ
			OBJ

On the other hand, when passivization applies and the Agent is suppressed, either role with  $[-r]$  may become the subject, as in (iii).

(iii)

	Cause	<Agent, Recipient-Patient, <Agent, Patient>>	
Intrinsic	$\phi$	$[-r]$	$[-r]$
Mapping Principles		$[-o]$ or $[+o]$	$[+o]$ or $[-o]$
		SUBJ/OBJ	OBJ/SUBJ

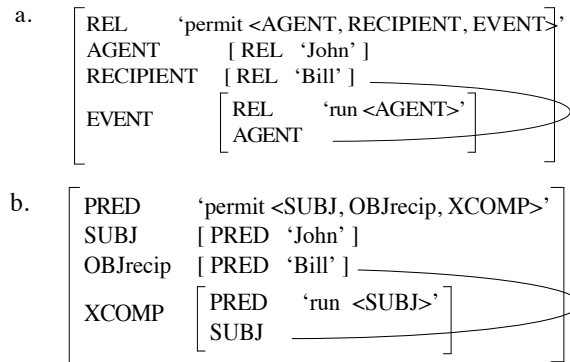
In this account, accusative marking is assigned to OBJpt, or when OBJpt is absent, to OBJ. OBJ is marked with dative in the presence of OBJpt.

- b. ??Jon wa sono yasai ni kusar-asete oita.  
 John Top the vegetable Dat go.bad-Caus leave-Past  
 'John let the vegetables go bad.' (intended; explicit permissive)

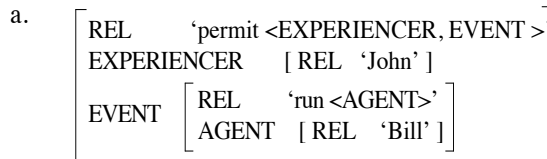
This analysis is consistent with the meanings of these two causative types. As I pointed out in 6.1.1, explicit permissives involve some action of granting permission to a person, while implicit permissives do not. The causee in explicit permissives *receives* permission, and the *ni* marking of the causee reflects this Recipient-like nature. Thus, explicit permissive causatives thematically subcategorize for a causer (permitter), a causee (recipient of permission), and an EVENT argument, while implicit causatives thematically subcategorize only for a causer (permitter) and an EVENT argument.

As I argued above, both of these causatives have a biclausal f-structure. The functional difference between them is that explicit permissives constitute a control (equi) structure, while implicit permissives constitute a raising structure. The a-structure and f-structure of (1a) and (1b) when interpreted as explicit and implicit causatives are described in (47) and (48).

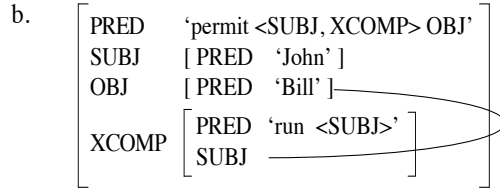
(47) explicit permissive causative



(48) implicit permissive causative<sup>13</sup>



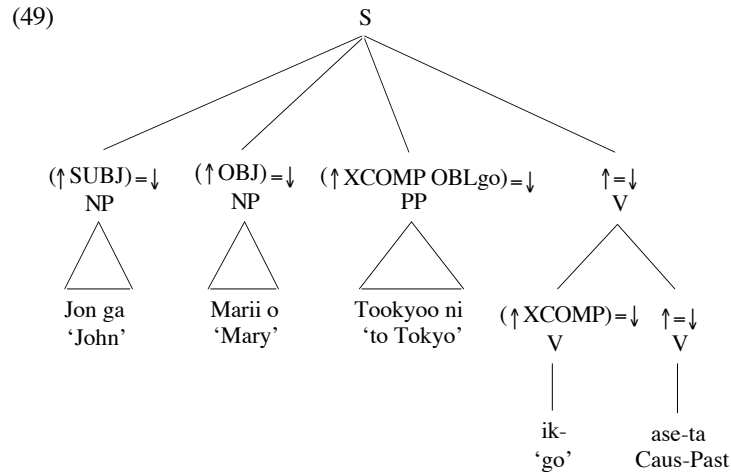
<sup>13</sup>It is not entirely clear whether EXPERIENCER is an appropriate label for the permitter argument of implicit permissive causatives. I will use this term for lack of a better one.



Note that this analysis is consistent with the Fused Argument Condition on SUBEVENT introduced in Chapter 2 (sec. 2.1.3.2): the causative morpheme in implicit permissive causatives does not have any argument fused with an argument of the base predicate, and therefore the base predicate heads EVENT, not SUBEVENT.

## 6.4 Constituent Structure of Causatives

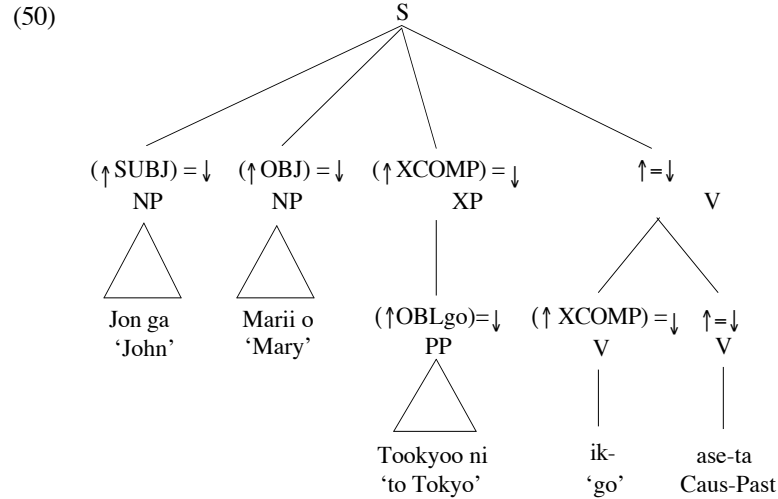
Functional Uncertainty in the phrase structure of Japanese, introduced in Chapter 3 (sec. 3.3.3) and elaborated in Chapter 4 (sec. 4.3.2), allows all the arguments and adjuncts of an XCOMP to appear at the matrix S level. This suggests that the constituent structure of a functionally biclausal causative sentence should look like (49) below. (There is an alternative possibility, with the OBLgo PP dominated by an XCOMP S dominated by the matrix S in (49))



This analysis is supported by the fact that the PP in (49) (an argument of the base verb) can scramble freely with the two NPs (the arguments of the causative morpheme).

This constituent structure is an improvement over Ishikawa's (1985).

His c-structure for the above causative sentence is (50); the same type of c-structure, he claims, holds for all causatives.



In Ishikawa's analysis, all the arguments and adjuncts of the base verb appear under the XCOMP XP node. This node was necessary in his analysis in order to associate the embedded PP with OBLgo of XCOMP in f-structure, given the absence of the device of functional uncertainty.

Ishikawa (1985) claims that this XP node is independently motivated by certain alleged restrictions on the position of adjuncts of the embedded XCOMP. He argues that an adjunct modifying the base verb must appear in such a position that no arguments or adjuncts of the causative morpheme may intervene between it and the causative predicate. For example, Ishikawa (1985:194) judges (51) as an ungrammatical sentence  $\perp$  though the adjunct clause in (51) could occur naturally in a position adjacent to the causative predicate.

- (51) ?Gakkoo wa [junbitaisoo o shi-naide] seito o oyog-ase-ta.  
 school Top warm-up Acc do-Neg student Acc swim-Caus-Past  
 'The school caused the students to swim without doing any warm-up.'

This would be accounted for by a phrase structure like (50) on the assumption that a precedence rule forcing the XCOMP XP (dominating the adjunct clause) to be adjacent to the causative predicate, and that only one XP node is permitted  $\perp$  as Ishikawa claims.

This analysis poses several problems. First, it cannot explain why the goal PP in (49) can scramble freely with the arguments of the causative.

Second, permissive causatives, which are true examples of functionally biclausal causatives, exhibit no such restriction on the distribution of base adjuncts. The following sentence, almost the same as (51) but unambiguously an implicit permissive causative, is acceptable in the reading in which the embedded clause is an adjunct of the base verb.

- (52) Gakkoo wa [junbitaisoo o shi-naide] seito o oyog-asete oita.  
 school Top warm-up Acc do-Neg student Acc swim-Caus left  
 'The school let the students swim without doing any warm-up.'

By contrast, (51) above is a coercive causative in its primary reading, which is monoclausal. Ishikawa's observation above reflects the pattern of the adverbial modification of the base verb in monoclausal causatives discussed in 6.2.2.4.

Thus, in a truly functionally biclausal causative, the arguments and adjuncts of a base verb can occur at the top S level, and can be scrambled with arguments and adjuncts of the causative morpheme, with this matrix-clause position licensed by the functional uncertainty of a phrase immediately dominated by an S.

## 6.5 Alternative Analyses

### 6.5.1 Incorporation Analysis

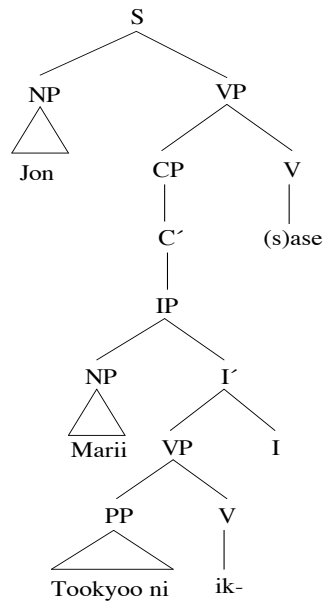
Causative verbs are one type of predicate that has been analyzed in terms of Baker's (1988) theory of Incorporation. In this approach morphological causatives are derived from a structure similar to a periphrastic causative by the Head-Movement (or Incorporation) of a base verb to a sublexical position which is sister to the causative morpheme (cf. an Incorporation analysis of desideratives discussed in 5.4.2). An Incorporation analysis of Japanese morphological causatives was proposed by Baker (1988:177-178, 212); Inoue (1989a, b) recapitulates Baker's analysis, assuming that the subject appears within VP, and makes a few comments on the difference between *ni*-causatives and *o*-causatives. In this section, I will be discussing Baker's proposal, though my criticism also applies to Inoue's.

In Baker's analysis, there are two major types of morphological causatives. In some cases, he claims, morphological causatives involve the derivation from a D-structure like (53a) to a D-structure like (53b) (see the next page). In this derivation, the base verb first moves to C (V-to-C movement) and then to a position sister to the causative morpheme by Incorporation. This causative formation is said to occur in the type of causative that exhibits the following two properties: 1) the causee is the

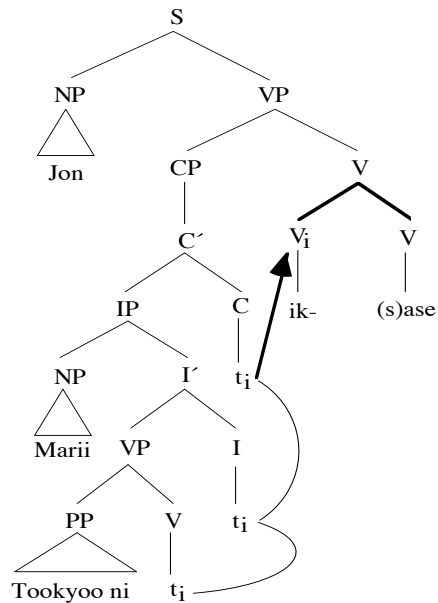
object of the whole causativized verb, while the object of the base verb (if any) becomes some sort of secondary object, and 2) the causee functions as a subject for anaphoric purposes. This is the case, he asserts, in languages like Japanese, Chimwiini, and Chamorro. The subject properties of the causee are explained by the fact that it still c-commands any anaphor or pronoun that appears as a base argument or adjunct, which remains unmoved (see (53b)).

Baker also recognizes another type of morphological causative formation, which involves the derivation from (53a) to (53c). In this case, the whole VP of the base verb first moves to the specifier of C' position (V-to-Comp movement), and the base verb then moves to a position sister to the causative morpheme. He claims that this is how causatives are derived in languages like Malayalam, in which 1) the causee does not function as a subject for anaphoric purposes (see K. P. Mohanan 1982a, 1983) and 2) the object of the base verb is the primary object of the causative. The non-subject status of the causee is explained by the fact that the causee NP does not c-command an anaphor/pronoun that appears within the moved VP, since any such anaphor/pronoun will have moved as part of the VP (see (53c)). Given that the causee argument of the coercive causative in Japanese does not exhibit grammatical subject properties, this causative, too, can be analyzed as being derived this way.

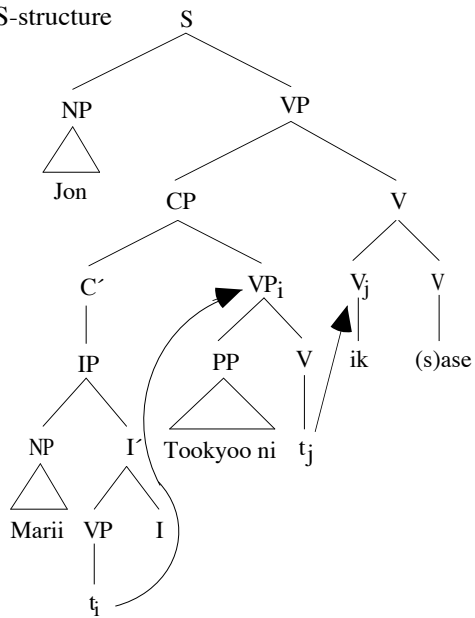
(53) a. D-structure



b. S-structure



c. S-structure



Problems with this analysis have already been pointed out by Alsina (1992), especially with respect to the status of the causee in Chichewa. Another problem lies in its treatment of mono/biclausal properties of a causative predicate.

For Baker, in both functionally monoclausal and biclausal causatives, the Uniformity of Theta Assignment Hypothesis requires the initial structure to be a complex biclausal structure just as with periphrastic causatives, and the Projection Principle requires this complex structure to be maintained at all syntactic levels. That is, his theory requires a complex constituent structure at all levels in both biclausal and monoclausal causatives, in spite of the fact that they differ in the subject status of the causee.

Baker's approach can distinguish between functionally biclausal causatives and functionally monoclausal causatives as far as the subjecthood of the causee is concerned. However, it cannot explain other differences such as those concerning adjunct modification, as we have seen in the case of desiderative predicates (sec. 5.4.2). In Incorporation theory, adjunct phrases and clauses modifying a base verb or the causative morpheme are allowed to appear freely in either the embedded clause (IP) or the embedding clause in both monoclausal and biclausal causatives. However, as I pointed out earlier in 6.2.2.4 and 6.2.3.2, such adjunct modification is in fact restricted in the case of monoclausal causatives. In other words, in some cases Japanese causatives do not have the complex constituent structure that Baker assumes for all causatives.

The restriction on the modification of a base verb alone is clearer in the morphological causatives of other languages. Malayalam and Chichewa causatives, which are clearly functionally monoclausal (K. P. Mohanan 1982b, 1983, Alsina 1992), allow very restricted adverbial phrases to modify the base verb alone (T. Mohanan, personal communication, Alsina, personal communication).

One reason that Baker assumes a biclausal complex D-structure for morphological causatives is to be able to treat them in the same way as periphrastic causatives, which appear to have the same pattern of thematic role assignment as morphological causatives. Baker's Uniformity of Theta Assignment Hypothesis requires the two kinds of causatives (morphological and periphrastic) to have the same D-structure, from which morphological causatives are then derived by Head-Movement (Incorporation). In this respect the theory of Incorporation is an attempt to create a uniform treatment of causative sentences in language, with all variations derivable from independent principles.

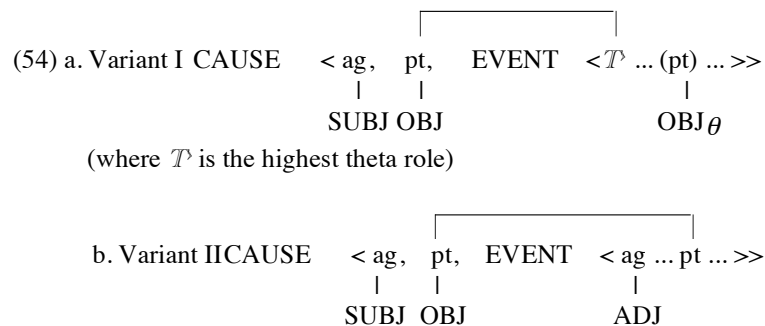
What is missing in this approach, it would seem, is the recognition that causatives can vary in complexity. In this regard, a comparison of

periphrastic and morphological causatives is instructive. As Baker notes, many languages including Chichewa have a bound causative morpheme that can also be used as an independent causative verb, creating biclausal periphrastic causatives just like English causatives. In many cases, such a situation represents the co-existence of two different stages in the historical process of grammaticalizing an independent verb into a grammatical morpheme (Givón 1976), which is a very general phenomenon in language change (Givón 1971, 1979, Heine & Reh 1983, Lehmann 1985, Heine, Claudi & Hünemeyer 1991, Matsumoto & Takata 1995; cf. Matsumoto 1988b). Such a change is not simply a formal change from a free morpheme to a bound morpheme but, as Givón (1976) argues, is associated with a gradual loss of regularities and of syntactic and morphological complexity.

Thus, causatives in language do not appear to be as uniform as Incorporation theory might suggest, and they can vary in functional and constituent complexity even within a single language, as the Japanese data above suggest.

### 6.5.2 Alsina's Cross-linguistic Parameterization

Another important study of morphological causatives is Alsina's work on the cross-linguistic parameterization of causative predicates (Alsina 1992, 1993, Alsina & Joshi 1991). Alsina claims that causative predicates can vary cross-linguistically according to a parameter specifying the possible patterns of argument fusion in a composite argument structure. He argues that the causative morpheme is a three-place predicate, subcategorizing for agent, patient, and event, and that the patient of the causative morpheme is fused with one argument of the base verb in a composite argument structure. There are two possibilities for such fusion. The patterns of argument fusion, and the mapping of thematic roles onto grammatical functions in each case, are represented in (54) below.



In Variant I, the patient of the causative morpheme is fused with the logical subject of the base verb. Semantically, this means that the causer brings

about the event by acting on an individual who is in control of that event (the logical subject of the base verb). In Variant II, the patient of the causative morpheme is fused with the patient of the base verb. Semantically, this means that the causer brings about an effect on the base patient by acting on it, with the logical subject of the base verb as an intermediary. Alsina & Joshi claim that Variant I is realized in causatives in Chamorro, while Variant II is realized in Marathi. They argue that both occur in Chichewa (see also Alsina 1992).

Alsina argues that in both these cases a composite argument structure is mapped onto a simplex lexical form of a functionally monoclausal predicate. In Variant I, the patient of the causative is mapped onto OBJ, with the base patient (if present) mapped onto OBJ<sub>θ</sub> (a secondary object). In Variant II, the patient of the causative is mapped onto the OBJ and the agent of the base verb is demoted to an adjunct (Grimshaw's (1990) argument adjunct). The regularities of mapping are explained by the theory of Lexical Mapping (sec. 2.1.3.2).

Alsina (1992) argues that these two cases of causative predicates allow the following passivization possibilities. In both Variants I and II, the patient of the causative can be a passive subject. Whether the base patient in Variant I can be a passive subject is dependent on the general nature of the language in allowing or not allowing a secondary object to be a passive subject. If the language is an object-symmetrical language (Bresnan & Moshi 1990), in which both direct and indirect object (i.e., two patient or patient-like arguments) can be a passive subject, the base patient can be a passive subject in Variant I causatives. If it is an object asymmetrical language, in which only a direct object can be a passive subject, the base patient cannot be a passive subject. By comparing Chichewa and Kichaga, Alsina (1992) argues that this independently motivated parameter of object symmetry predicts whether the base patient in Variant I causatives can be a passive subject.

It might seem that the *hak-ase(-ru)* type of coercive causative (sec. 6.3.2), in which the causer acts on the base patient as well as the causee, corresponds to Alsina's Variant II causatives. However, there are both semantic and syntactic differences between *hak-aseru* causatives in Japanese and Chichewa Variant II causatives. First, in Chichewa Variant II causatives, the agent of the base verb (the causee) is not affected, but is an intermediary of causation. In *hak-ase(-ru)* causatives the agent of the base verb is the recipient of the entire action and is in this sense affected. Second, in *hak-aseru* causatives the agent of the base verb is an argument, and not (as argued for Chichewa) an adjunct, as can be seen from the fact that it can be passive subject.

One problem with Alsina's account that the present study reveals is its

failure to recognize that a composite argument structure can be mapped onto a composite functional structure, as is the case with Japanese permissive causatives and persuasive inducing causatives. The present study suggests that causatives can vary cross-linguistically in their functional complexity, and that this must be recognized as another parameter of variation (see also K.P. Mohanan 1983, T. Mohanan 1988; see also Marantz 1984). Causative predicates in different languages do not seem to be as uniform as Alsina's account might suggest <sup>4</sup> the same problem that Baker's account faces.

This point is particularly relevant as regards the treatment of passivization. In Alsina's analysis the passivization facts of Japanese causatives are difficult to explain. He observes that Japanese morphological causatives are Variant I, and that Japanese is an object-symmetrical language (e.g., both direct and indirect object of *ataeru* 'give' can be a passive subject). He claims, however, that Japanese does not allow the base patient to be a passive subject, and appeals to the ad hoc solution of imposing a limitation on the activation of the object symmetry parameter (Alsina 1992: note 18).

As observed in 6.2.3.3 above, contrary to Alsina's claim, coercive inducing causatives do allow the patient of the base verb to be a passive subject. In this respect, Alsina's ad hoc solution is in fact unnecessary as far as coercive causatives are concerned. However, it is indeed true that the patient of the base verb cannot be a passive subject in the other three causative types. This fact remains unexplained in Alsina's account unless a very ad hoc limitation to the object symmetry parameter is devised. In the present account of Japanese causatives, by contrast, the above difference in passivization possibilities follows naturally from the distinction between EVENT and SUBEVENT and the reflection of this distinction in functional structure.

## 6.6 Semantics of Morphological and Lexical Causatives

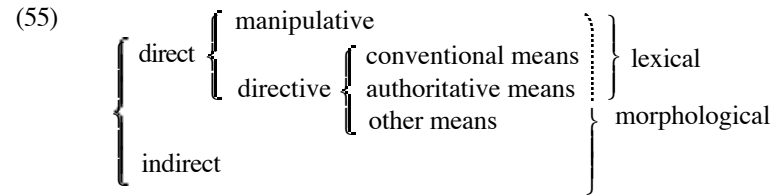
In addition to productive morphological causative predicates, Japanese has lexical causatives, which are mono-morphemic predicates having a causative meaning. In this section, I will discuss certain semantic differences between morphological and lexical causatives.

Morphological and lexical causatives have been claimed to differ in that the former is purportedly biclausal in some structure (e.g., Deep Structure, f-structure), while the latter is not. However, our discussion in 6.2 above has shown that coercive causatives are not biclausal in f-structure. The

difference between morphological coercive causatives and lexical causatives in Japanese is therefore to be sought in terms of the difference between the two in the argument structure complexity: coercive causatives are biclausal in argument structure, while lexical causatives are monoclausal. This difference in fact manifests itself in a semantic difference between the two causative predicates.

Shibatani (1976a, b, 1978) has made very interesting observations about the semantic differences between Japanese morphological causatives and lexical causatives with respect to distinctions such as directive versus manipulative causation, and direct versus indirect causation. Manipulative causation is the kind of causation in which a causer physically manipulates a causee to bring about the caused event, while in directive causation a causer directs a causee to bring about the caused event. These two types of causation count as direct causation, in which the causer directly causes the caused event. Direct causation is contrasted with indirect causation, in which a causer brings about an event through some mediating factor.

Shibatani (1976a, b) argues that lexical causatives typically express manipulative causation and particular kinds of directive causation that are executed by conventional or highly authoritative means (e.g., a policeman stopping a car, or a mother sending her children to bed), but that they cannot represent other kinds of directive causation or indirect causation. Morphological causatives, on the other hand, can represent indirect causation and non-authoritative, non-conventional directive causation, and may also express conventional or authoritative directive causation and manipulative causation in cases where there is no appropriate lexical causative available. This situation can be described as in (55).



He also argues that the above characterizations have cross-linguistic validity.

Lexical causatives cannot express a causation event that involves a slight involvement of an intermediate factor. This can be exemplified by the lack of any corresponding lexical causatives to represent the situations described by the following morphological coercive (causer-controlled) causatives.

- (56) a. Piero wa kodomo o waraw-ase-ta.  
 Pierrot Top child Acc laugh-Caus-Past  
 'The Pierrot made children laugh.'
- b. Marii wa purin o katamar-ase-ta.  
 Mary Top pudding Acc harden-Caus-Past  
 'Mary made the pudding harder (e.g. by putting it in the fridge).'

These are cases of indirect causation in which a causer does not directly bring about a caused event; rather, s/he provokes or manipulates factors surrounding or internal to the causee (e.g., children's mental state, temperature, etc.) that then bring about the caused process. This kind of causation in general does not appear to be expressible in a lexical causative.

Note also that the morphological causatives in (56b) have a corresponding lexical causative *katame(-ru)* 'harden (transitive)'. This verb can only be used to represent more direct manipulation (e.g., harden by using one's hands, etc.). This does not seem to be an idiosyncratic lexical fact. The differences between such pairs of lexical causatives and morphological causatives as *sage(-ru)* 'lower' and *sagar-ase(-ru)* (lower-Caus) 'cause to lower', *ukabe(-ru)* 'float' and *ukab-ase(-ru)* (float-Caus) 'cause to float', *korogas(-u)* 'roll' and *korogar-ase(-ru)* (roll-Caus) 'cause to roll' suggest that there is a general condition on the meaning of lexical causatives that makes it impossible to express such indirect causation in a lexical verb.

This observation suggests that lexical causatives must represent the kind of causation in which the causer's act of causation is the sole factor that determines the course of the caused event. In (56) the success or failure in bringing about the intended caused event depends partially on factors external to the causer and therefore this condition is not satisfied. Note that the sentences in (56) are coercive causatives, in which causation is executed without appealing to the will (or decision) of the causee. The meanings of lexical causatives are much more constrained: the caused event must be brought about without any effects of external factors, not just the will of the causee.

This condition on lexical causatives can also be regarded as a constraint on the meaning of what can constitute one predicate in argument structure, given that argument structure complexity is a crucial difference between lexical and morphological causatives. The condition can be formulated as follows.

- (57) The Determinative Causation Condition: In order for causation to be lexically expressed (i.e. expressed in a single predicate at a-structure), the causing event must be the sole factor that determines the course of the caused event.

Since morphological causative predicates do not constitute a single predicate in a-structure (sec. 6.3), they are not subject to this condition.

The Determinative Causation Condition can also explain why only certain kinds of directive causation can be expressed in a lexical causative. As mentioned above, Shibatani (1976a, b) observes that only directive causation that is executed by authoritative or conventional (i.e., socially determined) means can be expressed by a lexical causative. In such cases, the caused event can be solely determined by the causing event.

The above condition is consistent with Pinker's (1989) observations about the semantic constraints on the class of English intransitive verbs that can be converted into causative transitive verbs. He observes that verbs like *laugh*, *rejoice*, *cry*, *shout*, *drink*, *talk*, and *sleep* cannot be lexically causativized (in contrast to *open*, *break*, *slide*, etc.) because causation of these events inherently involves a factor internal to the object that undergoes a change (the causee), which must mediate any effect initiated by an external agent. What is of further interest is that this appears to be true of languages in general. Nedjalkov and Silnitsky (1973) have observed that certain verbs, such as those having the meaning 'laugh', cannot be converted into a lexical causative in any of the over one hundred languages that they investigated. Thus, the semantic constraint on lexical causativization above appears to be a quite general condition on what can constitute a single predicate in a-structure.

In Chapters 1 and 2, I put forward the thesis that what count as a word at argument structure is the word as a semantic unit. The above restriction on Japanese lexical causatives supports this view. That is, a semantic condition such as (57) must be satisfied by what counts as one word at argument structure. Such semantic conditions appear to be much stricter than those imposed on the predicate at f-structure (cf. coercive causatives). I will pursue this issue further in Chapter 10.

## **6.7 Conclusion**

In this chapter, I have examined the syntax and semantics of Japanese morphological causatives. I have pointed out that there is much evidence suggesting that coercive inducing causatives are functionally monoclausal, while other causatives (especially permissive causatives) are functionally biclausal. Although all types of morphological causatives are biclausal at

a-structure. That is, coercive morphological causative predicates are one word at c- and f-structure and two words at a-structure, whereas permissive and persuasive causatives are one word at c-structure, and two words at f- and a-structure.

## CHAPTER 7

### Aspectual and Other Syntactic Compound Verbs

Japanese abounds in V-V compounds. They can be divided into two major types: syntactic compound verbs and lexical compound verbs (Kageyama 1989, 1993, Masuoka & Takubo 1992, Moriyama 1988). Syntactic compound verbs are V-V compounds which involve some kind of complement structure either at a-structure alone or at both a-structure and f-structure. These includes aspectual compound verbs, which are formed by compounding an aspectual verb like *hajime(-ru)* ‘begin’ and *oe(-ru)* ‘finish’ as second verb of the compound (V2) with a base verb (first verb of the compound (V1)). There are also non-aspectual syntactic compound verbs, in which a verb like *sugi(-ru)* ‘exceed (in ... )’ and *sokone(-ru)* ‘fail (to ... )’ is compounded with a base verb. Lexical compound verbs do not involve any complement structure. They include such compounds as *oshi-taos(-u)* (push-topple) ‘push down’ and *hari-tsuke(-ru)* (paste-put) ‘attach by pasting’.

In this chapter I will discuss syntactic compound verbs, leaving lexical compound verbs for Chapter 8. I will argue that there are three types of such verbs, differing in their functional complexity and in the type of argument structure involved. In Sections 7.1 and 7.2 I will examine several compound-forming aspectual verbs, in which only two types of syntactic compounding are realized. In 7.3 I will discuss non-aspectual syntactic compounds, in which all three types of syntactic compounding are realized. In 7.4 I will examine alternative accounts for these compounds.

#### 7.1 Aspectual Compound Verbs

Some examples of aspectual compounds in Japanese are given below.

- (1) a. Jon wa      hon o      kaki-hajime-ta.  
     John Top   book Acc   write-begin-Past  
     ‘John began to write a book.’
- b. Jon wa      hon o      {kaki-owat-ta / kaki-oe-ta}.  
     John Top   book Acc   write-finish-Past   write-finish-Past  
     ‘John finished writing a book.’

- c. Jon wa        hon o        kaki-tsuzukete iru.  
John Top    book Acc write-continue Asp  
'John continues to write a book.'

These compound verbs take *hajime(-ru)* ‘begin’, *tsuzuke(-ru)* ‘continue’, *owar(-u)* ‘finish, cease’, and *oet(-ru)* ‘finish’ as their second verbs. These are not the only aspectual verbs that can form syntactic compounds <sup>4</sup> e.g., *kake(-ru)* ‘be about to’ occurs in several examples in this chapter <sup>5</sup> but I will chiefly restrict myself to these four, which are most commonly discussed in the literature (Shibatani 1973b, Inoue 1976a, Kuno 1983, 1987, Sugioka 1984, Miyagawa 1989b, Nishigauchi 1993). Morphologically, V1 is in the Renyookei form, and V2 inflects for tense. The compound constitutes one morphological word; it satisfies all the criteria for morphological wordhood introduced in Chapter 2. For example, the two compounded verbs cannot be separated from each other by any particles (e.g., *\*kaki wa hajimeru*), and they participate in Renyookei Nominalization as a whole (e.g., *kaki-hajime* ‘the beginning of writing’).

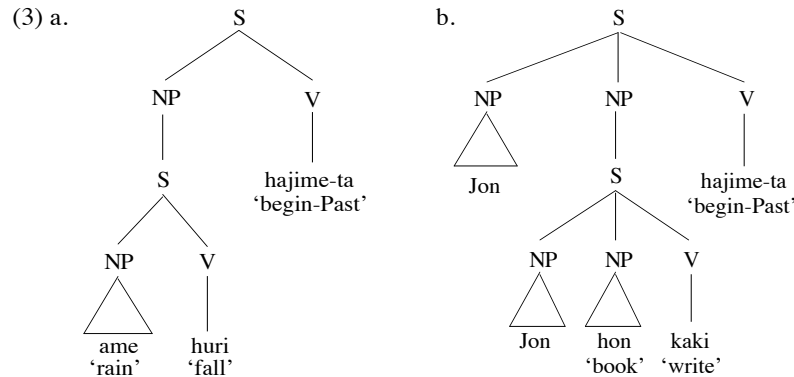
In spite of this morphological one-word status, it has been claimed that these compound verbs have a complex structure at least in some underlying level of representation (Shibatani 1973b, Inoue 1976a, Kuno 1983, 1987, Sugioka 1984, Miyagawa 1989b, Kageyama 1989, Isoda 1991b, Nishigauchi 1993, etc.). In addition, some have claimed that there are two kinds of aspectual compound verbs which differ in their underlying representations (Shibatani 1973b, Kuno 1983, 1987).

Shibatani (1973b) and Kuno (1983, 1987) have argued that there are two types of compound-forming aspectual verbs, which they call “intransitive” and “transitive” aspectual verbs. This analysis was motivated by evidence similar to that motivating the ambiguity of the English verb *begin* (Perlmutter 1970, Ross 1972). They claim that verbs like *hajime(-ru)* are ambiguous between the two readings illustrated by (2a) and (2b).

- (2) a. Ame ga huri-hajime-ta. (intransitive = Type I)  
rain Nom fall-begin-Past  
'It began to rain.'
- b. Jon wa hon o kaki-hajime-ta. (transitive = Type II)  
John Top book Acc write-begin-Past  
'John began to write a book (or books).'

*Hajime(-ru)* 'begin' in sentences like (2a), they argue, does not impose any restriction on its subject so that it can have a non-agentive subject, while the same verb in sentences like (2b) does impose an agentivity restriction on its

subject. Working in the framework of Transformational Grammar, they derived these sentences from Deep Structures like (3a) and (3b), respectively. In (3a) the verb *hajime(-ru)* takes only a sentential subject as its argument, while in (3b) it takes two arguments whence the terms “intransitive” and “transitive” aspectual verbs. These structures are essentially the Deep Structure of raising and control (equi) constructions, respectively.



I will refer to the intransitive type exemplified in (2a) as “Type I aspectual verbs”, and the transitive type exemplified in (2b), “Type II”, although I will later show that “transitive” type in fact has another subtype, called “Type III”.

This distinction between the two types of aspectual verbs described in (3) is correlated with a semantic difference. The intransitive (Type I) aspectual verb represents the non-intentional beginning (continuation, or cessation) of a situation (or event), while the transitive (Type II) aspectual verb represents the subject’s intentionally instigated initiation (continuation, or termination) of a process.

There is a certain complication with this distinction. Since nothing prevents an agentive verb from appearing in the embedded clause of an intransitive aspectual verb, a sentence like (2b) can in principle have a Type I structure as well as a Type II structure. That is, (2b) might represent either the intentionally instigated initiation of an agentive action (Type II) or the non-intentional beginning of (repeated occurrence of) an agentive action (Type I). The following sentences will help clarify the distinction between the two cases.

- (4) a. Jon wa    sono koro kara    ii    ronbun o    kaki-hajime-ta.  
       John Top the    period since good    paper Acc write-begin-Past  
       ‘John’s writing of good papers began around that time.’

- b. Jon wa kinoo ronbun o kaki-hajime-ta.  
 John Top yesterday paper Acc write-begin-Past  
 'John (intentionally) began to write the paper yesterday.'

Sentence (4a) is most naturally interpreted in the non-intentional beginning (Type I) reading, while (4b) can be interpreted in the intentional initiation (Type II) reading. The beginning, continuation, or cessation of multiple or repeated occurrences of a process, as in (4a), is possible only with Type I aspectual compounds.

The evidence for the distinction between these two kinds of aspectual compounds is not always clear-cut. For example, consider the alleged difference between these two types as regards their imperative form (Shibatani 1973b, Kuno 1983). One might argue that intransitive (Type I) aspectual verbs do not involve the subject's control over the event represented by V1, and therefore no imperative form should be possible, while transitive (Type II) aspectual verbs do involve the subject's control over the event, and therefore these compounds can be used in the imperative (Shibatani 1973b, Kuno 1983). Plausibly, then, the contrast found in sentences like (5a) and (5b) might reflect the distinction between these two types of aspectual verbs.

- (5) a. \*Hutori-hajime-nasai.  
 become.fat-begin-Imp  
 'Begin to get fat!' (intended)
- b. Sono hon o yomi-hajime-nasai.  
 the book Acc read-begin-Imp  
 'Begin to read a book!'

A phenomenon like this, however, is not sufficient to justify the distinction between the two types, for the difference between (5a) and (5b) might just as well come from the agentivity of V1; that is, there might be nothing intrinsic to aspectual verbs that produces this difference (Inoue 1976a; cf. Newmeyer 1975).

There is, however, some genuine evidence to support the distinction between two different types of aspectual verbs. As Shibatani (1973b) first observed, some aspectual verbs are restricted to only one of the two types (cf. Ross 1972). An example is *oe(-ru)* 'finish'. As illustrated in (6a), this verb requires a human (intentional) subject, and therefore (6b) is unacceptable. By contrast, another verb *owar(-u)* 'cease, finish', does allow a non-human subject, as shown in (7).

- (6) a. Jon wa hon o yomi-oe-ta.  
 John Top book Acc read-finish-Past  
 'John finished (reading) a book.'
- b. \*Kyookai no kane ga juuni-ji o tsuge-oe-ta.  
 church Gen bell Nom twelve Acc tell-finish-Past  
 'The bell of the church finished ringing twelve.' (intended)
- (7) a. Jon wa hon o yomi-owat-ta.  
 John Top book Acc read-finish-Past  
 'John ceased to read a book.'
- b. Kyookai no kane ga juuni-ji o tsuge-owat-ta.  
 church Gen bell Nom twelve Acc tell-finish-Past  
 'The bell of the church finished ringing twelve.'

Thus, *oe(-ru)* is a Type II aspectual verb, and *owar(-u)* is a Type I aspectual verb.<sup>1</sup> In the sections below, I will further point out that these two verbs exhibit additional differences in their grammatical behavior, and that *hajime(-ru)* and *tsuzuke(-ru)* sometimes behave like *oe(-ru)* (Type II) and sometimes like *owar(-u)* (Type I), depending on whether they are used in the intentional initiation or continuation reading or in the non-intentional beginning or continuation reading. In sum, therefore, there do appear to be

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<sup>1</sup>There are other factors determining what is a possible compound with *owar(-u)* and *oe(-ru)*. In addition to agentivity, the verb *oe(-ru)* requires that its complement clause represent an accomplishment-type event (Nishigauchi 1993; see also Teramura 1984b). Though most verbs that satisfy the agentivity requirement and this aspectual requirement are transitive, transitivity is not really a relevant factor. Intransitive verbs satisfying these two conditions can be compounded with *oe(-ru)* (Nishigauchi 1993), and transitive verbs that do not satisfy both are ruled out (cf. (6b) above).

Teramura (1984b:178) states that *owar(-u)* rarely occurs with a non-agentive verb, citing as unacceptable such examples as *huri-owar(-u)* (fall-cease), (*samuku*) *nari-owar(-u)* (cold become-cease), and *kie-owar(-u)* (go.off-cease). However, these are acceptable in the reading in which multiple or repetitive occurrences of a process cease. Note the examples below.

- (i) Danzokuteki na ame wa gozenchuu ni wa huri-owat-ta.  
 intermittent rain Top morning Loc fall-cease-Past  
 'The intermittent rains ceased to fall in the morning.'
- (ii) Ike no otamajakushi wa sukkari kaeru ni nari-owat-ta.  
 pond Gen tadpole-Pl Top completely frog Dat become-cease-Past  
 'The tadpoles in the pond have all become frogs.' ('The situation of tadpoles becoming frogs ceased.')

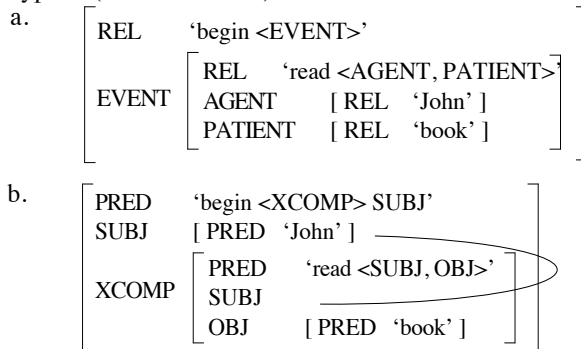
two kinds of aspectual verbs.

The question, then, is how the difference between these two kinds of aspectual verbs is to be represented. Ishikawa (1985), incorporating the above analysis of Shibatani (1973b) and Kuno (1983) into LFG, has claimed that these aspectual verbs create raising or control-type biclausal f-structures: Type I aspectual verbs subcategorize for non-thematic SUBJ and XCOMP, while Type II aspectual verbs subcategorize for thematic SUBJ and XCOMP. Isoda (1991b) has recently made a proposal in which both types are monoclausal in f-structure and biclausal in a-structure, with the difference between them lying in transitivity in a-structure: Type I aspectual verbs select for SUBEVENT (his  $EVENT_T$ ) only, while Type II aspectual verbs select for AGENT in addition to SUBEVENT.

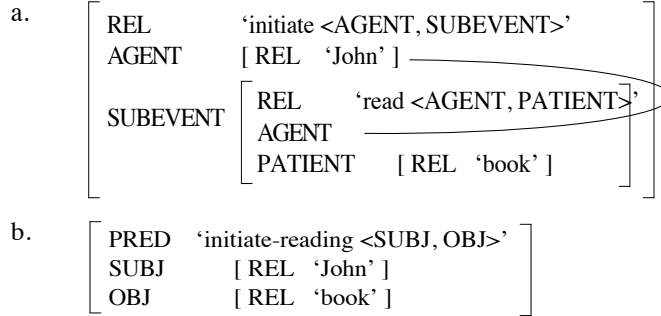
## 7.2 An Analysis of Some Aspectual Compounds

My proposed analysis is that these two types of aspectual verbs differ not only in their transitivity at a-structure, but also in their functional complexity. A Type I aspectual verb, representing the non-intentional beginning, continuation, or cessation of a situation, creates a raising-type biclausal f-structure like (8b) (involving an XCOMP complement headed by V1) from a biclausal a-structure like (8a), in which the aspectual verb subcategorizes for EVENT only. On the other hand, a Type II aspectual verb, representing the intentional initiation, continuation, or termination of a process, creates a monoclausal f-structure like (9b) from a biclausal a-structure like (9a), in which the aspectual verb takes AGENT and SUBEVENT as its arguments, with control-type argument fusion.

(8) Type I (non-intentional)



(9) Type II (intentional)



In what follows, I will show that this analysis can explain the observed differences between the two types of aspectual verbs with respect to passivization, desiderativization, subject honorification, adjunct interpretation, and verbal anaphora.

### 7.2.1 Passivization

The distinction between the two types of aspectual compound verbs is manifested in the passivization patterns of these verbs (Nishigauchi 1993, Kageyama 1993). Passivization of the whole aspectual compound is possible with Type II aspectual compound verbs, while Type I aspectual compound verbs as a whole cannot be passivized.

First, the sentences in (10) show that the Type II aspectual verb *oe(-ru)* allows passivization of the whole compound verb, while the Type I *owar(-u)* does not.

- (10) a. \*Sono hon wa yooyaku kaki-owar-are-ta. (Type I)  
           that book Top finally write-finish-Pass-Past  
           'The book finally was completely written.' (intended)
- b. Sono hon wa yooyaku kaki-oe-rare-ta. (Type II)  
           that book Top finally write-finish-Pass-Past  
           'The book finally was completely written.'

Second, *hajime(-ru)* and *tsuzuke(-ru)* permit passivization of the whole compound only when the verb is interpreted in the intentional initiation or continuation readings. For example, (11a) can only be interpreted as involving a Type I *tsuzuke(-ru)*, since rain cannot intentionally initiate the process of falling on leaves. (11b) shows that the whole verb cannot be passivized in this case.

- (11) a. Ame ga konoha o uchi-tsuzuke-ta. (Type I)  
 rain Nom leaf Acc beat-continue-Past  
 'Rain continued to fall on the leaves.'
- b. \*Konoha ga ame niyotte uchi-tsuzuke-rarete iru  
 leaf Nom rain by beat-continue-Pass Asp  
 'The leaves continued to have rain fall on them.' (intended)

On the other hand, sentence (12a), in which the same compound verb is used in a sentence semantically compatible with a Type II aspectual verb meaning, allows the passivization of the whole verb, as shown in (12b).

- (12) a. Jon wa pisutoru o uchi-tsuzuke-ta. (Type II)  
 John Top pistol Acc shoot-continue-Past  
 'John continued to fire a pistol.'
- b. Pisutoru ga Jon niyotte uchi-tsuzuke-rare-ta.  
 pistol Nom John by shoot-continue-Pass-Past  
 'The pistol continued to be fired by John.'

This phenomenon is predicted by my analysis. Since Type II aspectual compounds involve a SUBEVENT, passivization of the whole predicate can make the patient of V1 into the passive subject. On the other hand, since Type I aspectual compounds involve an EVENT (which forces an independent mapping onto f-structure), passivization cannot apply to the whole verb and make the patient of V1 into the subject.

An additional difference between Type I and Type II aspectual compounds concerns the passivizability of V1. Type I aspectual verbs can be compounded with a passive verb, but Type II aspectual verbs cannot. For example, (13a) is acceptable, but (13b) is not. Note also that (13c), which can only be interpreted as involving *tsuzuke(-ru)* as a Type I aspectual verb, is acceptable.<sup>2</sup>

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<sup>2</sup>Note that the following sentence is also acceptable. This is presumably a case of a Type I compound.

- (i) Pisutoru ga ut-are-tsuzukete iru.  
 pistol Nom shoot-Pass-continue Asp  
 'The pistol continues to be fired (the situation of the pistol being fired continues).'

- (13) a. sono machi ga koogeki s-are-owat-ta (koto) (Type I)  
 the city Nom attack do-Pass-finish-Past fact  
 ‘(the fact that) the city stopped being attacked...’
- b. \*sono machi ga koogeki s-are-oe-ta (koto) (Type II)  
 the city Nom attack do-Pass-finish-Past fact  
 ‘(the fact that) the city stopped being attacked...’ (intended)
- c. Konoha ga ame ni ut-are-tsuzukete iru. (Type I)  
 leaf Nom rain by beat-Pass-continue Asp  
 ‘The leaves continued to have rain fall on them.’

Since Type I aspectual verbs have a full syntactic complement (XCOMP) with no restrictions on the subject of the complement, they can be compounded with any verb, including a passive verb, and therefore sentences like (13a) and (13c) are allowed. On the other hand, a Type II aspectual verb cannot be compounded with a passive verb because its subject must be agentive and a passive verb cannot have an intentional agent as its subject; therefore sentences like (13b) are unacceptable.

### 7.2.2 Desiderativization

The second kind of evidence for my analysis of Type I and Type II aspectual compound verbs concerns desiderativization. Shibatani (1978) has noted that it is not possible to have a nominative object with desiderativized aspectual compounds. However, a closer examination suggests that this possibility depends on the type of aspectual compounds involved. Desiderativized Type I aspectual compounds do not allow nominative marking of the object, but desiderativized Type II aspectual compounds allow it relatively easily, as suggested by the contrast between (14a) and (14b).

- (14) a. Boku wa kono hon {\*ga/o} yomi-owari-takat-ta (Type I)  
 I Top this book Nom/Acc read-finish-want-Past  
 ‘I wanted to finish reading this book’
- b. Boku wa kono hon {?ga/o} yomi-oe-takat-ta (Type II)  
 I Top which book Nom/Acc read-finish-want-Past  
 ‘I wanted to finish reading this book’

This observation is consistent with the proposal above. Since Type II aspectual compounds subcategorize for SUBEVENT, *yomi-oe-ta(-i)* in (14b) is one predicate in f-structure, governing its object as a stative predicate. Type I aspectual compounds, on the other hand, subcategorize for

EVENT and creates a biclausal f-structure; hence *kono hon* 'this book' in (14b) cannot be the object of *yomi-owari-ta(-i)* as a whole, and therefore not the object of a stative predicate.

Consider also (15).

- (15) a. Kare wa sono koro kara yoi hyooka {*\*ga/o*}  
           he Top the period since good evaluation Nom/Acc  
           e-hajime-takat-ta rashii. (Type I)  
           get-begin-want-Past seem  
           'It seems that he wanted to start getting a good evaluation around  
           that time.'
- b. Marii wa sono hon {*?ga/o*} yomi-hajime-takat-ta rashii.  
       Mary Top the book Nom/Acc read-begin-want-Past seem  
       'It seems that Mary wanted to start reading the book.' (Type II)

(15a) is interpreted as involving a Type I aspectual compound (given that the process represented by the compound is not something one can intentionally initiate), while (15b) can be an example of the desiderativized Type II aspectual compound. The contrast between (15a) and (15b) supports my analysis of these two types of aspectual compounds. The relative unnaturalness of nominative marking of the object in (15b) is probably to be attributed to the semantic constraint on nominative-marking desideratives (i.e., the base object must be the target of the desire to obtain something; see 5.2.1).

### 7.2.3 Subject Honorification

Another difference between Type I and Type II aspectual compound verbs can be found in their patterns of honorific marking with *o-V ni naru*. As Kuno (1983) has observed, a Type I aspectual compound verb does not allow honorific marking of the compound as a whole, while a Type II aspectual verb does (see also Kageyama 1993). This is true, first of all, of *owar(-u)* (unambiguously Type I) and *oe(-ru)* (unambiguously Type II) (Kuno 1983, 1987), as illustrated by sentences (16).

- (16) a. \*Sensei wa tegami o o-kaki-owari ni nari-mashi-ta. (Type I)  
           teacher Top letter Acc H-write-finish Cop become-Pol-Past  
           'The teacher finished writing a letter.' (intended)
- b. Sensei wa tegami o o-kaki-oe ni nari-mashi-ta. (Type II)  
       teacher Top letter Acc H-write-finish Cop become-Pol-Past  
       'The teacher finished writing a letter.'

Second, *hajime(-ru)* and *tsuzuke(-ru)* can take honorific marking on the

compound as a whole only when V1 semantically allows a Type II reading (Kuno 1983, 1987). The sentences in (17) are intended to represent the beginning of multiple occurrences of a non-agentive process (dying), which can only be represented by a Type I aspectual compound. In this case it is not possible to place an honorific marker on the compound as a whole.

- (17) a. Tooji no sensei-gata ga o-nakunari ni nari-hajime-ta.  
then Gen teacher-PI Nom H-die Cop become-begin-Past  
'Teachers at that time began to pass away.'
- b. \*Tooji no sensei-gata ga o-nakunari-hajime ni nat-ta.  
then Gen teacher-PL Nom H-die-begin Cop become-Past  
'Teachers at that time began to pass away.' (intended)

This phenomenon is consistent with the above analysis if honorific marking cannot be placed on a predicate which constitutes two PREDs in f-structure. This is in fact what was pointed out already with respect to morphological causatives (sec. 6.2.2.1).

There is also a difference between Type I and Type II aspectual verbs with respect to the placement of honorific marking on V1 alone. Kuno (1983) has observed that Type I aspectual compounds allow honorific marking to be placed on V1, while Type II aspectual compounds do not (see also Kageyama 1993). He claims, for example, that a sentence like (18a) below is grammatical, while (18b) is ungrammatical.

- (18) a. Sensei wa tegami o o-kaki ni nari-owari-mashi-ta. (Type I)  
teacher Top letter Acc H-write Cop become-finish-Pol-Past  
'The teacher finished writing a letter.'
- b. %Sensei wa tegami o o-kaki ni nari-oe-mashi-ta. (Type II)  
teacher Top letter Acc H-write Cop become-finish-Pol-Past  
'The teacher finished writing a letter.' (intended)

Kuno's judgment is consistent with the present analysis and with the assumption that honorific marking can be placed only on a unit that constitutes one PRED in f-structure. It seems, however, this judgment regarding (18b) is not shared by all speakers. Some speakers find (18b) not so unacceptable, though they do find a contrast between (18a) and (18b). For such speakers, honorific marking can be placed on a unit that is a part of the PRED (as well as on the whole PRED) in f-structure, although it cannot be placed on a verb that constitute two PREDs.

### 7.2.4 Adjunct Interpretation

A clearer difference can be observed in the pattern of adjunct interpretation. Type I aspectual verbs allow adjuncts to modify V1 only or the aspectual verb only, while Type II aspectual verbs restrict adjunct modification of V1 only.

First, consider the adverb *tokidoki* ‘sometimes’ in the sentences in (19), in which the Type I and Type II readings of *hajime(-ru)* are disambiguated by the patterns of passivization.

- (19) a. Soko de mo seisho wa tokidoki yom-are-hajime-ta. (Type I)  
           there Loc too Bible Top sometimes read-Pass-begin-Past  
           ‘The situation of the Bible being read at times began there, too.’  
           ‘At times, the situation of the Bible being read began there, too.’
- b. Soko de mo seisho wa tokidoki yomi-hajime-rare-ta. (Type II)  
           there Loc too Bible Nom sometimes read-begin-Pass-Past  
           ‘At times the Bible began to be read there, too.’  
           \*‘The process of reading the Bible at times was initiated there, too.’

Sentence (19a) must be interpreted in the Type I aspectual verb reading, since V1 alone is being passivized. This sentence allows the adverbial *tokidoki* ‘at times’ to modify either V1 alone or the aspectual verb alone. Sentence (19b) must be interpreted with the Type II aspectual verb reading, since the aspectual compound as a whole is passivized. This sentence has the reading in which the adverb modifies the aspectual verb, but not the one in which the adverb modifies only V1, even though there is no semantic reason that this should not be possible.

The same is true of (20). (20a) can only be interpreted with the adverb phrase *goji to rokuji no aida ni* ‘between 5 and 6’ modifying either V1 alone or the aspectual verb. (20b), on the other hand, can be interpreted only in the latter reading.

- (20) a. Yuushoku wa goji to rokuji no aida ni  
           supper Top five and six Gen middle Loc  
           tabe-rare-hajime-ta. (Type I)  
           eat-Pass-begin-Past  
           ‘Supper was started between 5 and 6.’  
           ‘The habit (situation) of eating supper between 5 and 6 began.’

- b. Yuushoku wa goji to rokuji no aida ni  
 supper Top five and six Gen middle Loc  
 tabe-hajime-rare-ta. (Type II)  
 eat-begin-Pass-Past  
 'Supper was started between 5 and 6.'  
 \*'The eating of supper between 5 and 6 was begun.'

The same can be said of adjunct interpretation with aspectual compound verbs whose readings are disambiguated by honorific marking with *o-V ni naru*. When honorific marking is placed on V1 and therefore the Type I reading is called for, an adjunct can modify either V1 or the aspectual verb, as in (21a). By contrast, when honorific making is placed on the whole aspectual compound verb and therefore only the Type II aspectual verb reading is possible, an adjunct cannot modify only V1. Thus, (21b) has only the reading in which the adjunct modifies the beginning of the process rather than the process itself.

- (21) a. Sensei wa sono seisho o tokidoki o-yomi ni  
 teacher Top the Bible Acc sometimes H-read Cop  
 nari-hajime-mashi-ta. (Type I)  
 become-begin-Pol-Past  
 'Every now and then the teacher began to read the Bible.'  
 'The teacher's habit of reading the Bible now and then began.'
- b. Sensei wa sono seisho o tokidoki o-yomi-hajime ni  
 teacher Top the Bible Acc sometimes H-read-begin Cop  
 nari-mashi-ta. (Type II)  
 become-Pol-Past  
 'Every now and then the teacher began to read the Bible.'  
 \*'The teacher initiated the process of reading the Bible now and then.'

Similarly, the adverb phrase in (22a) can be interpreted as ambiguously, it cannot modify only V1 in (22b).

- (22) a. Sensei wa yuushoku o goji to rokuji no aida ni  
 teacher Top supper Acc five and six Gen middle Loc  
 o-tabe ni nari-hajime-mashi-ta. (Type I)  
 H-eat Cop became-begin-Pol-Past  
 'The teacher began his/her supper between 5 and 6.'  
 'The teacher's habit of eating his/her supper between 5 and 6 began.'

- b. Sensei wa   yuushoku o goji to   rokuji no   aida ni  
 teacher Top supper Acc five and six Gen middle Loc  
 o-tabe-hajime ni nari-mashi-ta (Type II)  
 H-eat-begin Cop become-Pol-Past  
 'The teacher started his/her supper between 5 and 6.'  
 \*'The teacher initiated the process of eating his/her supper between  
 5 and 6.'

Such a restriction of adjunct modification in Type II aspectual compounds suggests the lack of full syntactic complementation (i.e., functional monoclausality), while the absence of such a restriction in Type I aspectual compounds suggests full syntactic complementation (biclausality).

### 7.2.5 Verbal Anaphora

Finally, there is a difference between Type I and Type II in the patterns of verbal anaphora. Kageyama (1989) observes that verbal anaphora involving *soo suru* 'do so' is possible with aspectual compound verbs, but not with the non-aspectual lexical compound verbs which I will discuss in the next chapter. The sentences in (23a) and (23b) show this difference.<sup>3</sup>

- (23) a. Jon wa   hon o       yomi-hajime-ta. Marii mo soo shi-hajime-ta.  
 John Top book Acc read-begin-Past Mary too so do-begin-Past  
 'John began to read a book. Mary began to do so, too.'
- b. Jon wa   ishi omochi-age-ta. \*Marii mo soo shi-age-ta.  
 John Top stone have-raise-Past Mary too so do-raise-Past  
 'John held the stone up, and Mary did so, too.'

Kageyama (1989) uses this property of aspectual compound verbs to motivate a complement structure analysis similar to that proposed by Kuno and Shibatani for Type I aspectual verbs. However, in fact it is only Type I aspectual verbs that allow *soo suru* to replace V1 and its arguments naturally. As shown in (24), *soo suru* cannot replace V1 and its arguments naturally when the whole compound is passivized (a Type II case; see above); but it can do so when a passive verb is itself compounded with an aspectual verb (a Type I case).

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<sup>3</sup>Kageyama (1989) does not make a distinction between two types of aspectual verbs.

- (24) a. Ano hekiga wa karera ni yori shuuri s-are-tsuzukete iru.  
 that painting Top they by repair-Pass-continue Asp  
 Konohekiga mo soo s-are-tsuzukete iru. (Type I)  
 this painting too so do-Pass-continue Asp  
 ‘The mural painting has continued to be repaired by them. So has this painting.’
- b. Ano hekiga wa karera ni yori shuuri shi-tsuzuke-rarete iru.  
 that painting Top they by repair-continue-Pass Asp  
 ??Kono hekiga mo soo shi-tsuzuke-rarete iru. (Type II)  
 this painting too so do-continue-Pass Asp  
 ‘That mural painting has been repaired by them. So has this painting.’ (intended)

Thus, the patterns of passivization, desiderativization, honorific marking, adjunct interpretation, and verbal anaphora all support a functional biclausal analysis for Type I aspectual verbs, and a functional monoclausal analysis for Type II aspectual verbs.

### 7.2.6 Types of Syntactic Compounds

In the present analysis, the aspectual compounds considered exhibit differences in functional complexity as well as transitivity at a-structure. Type I aspectual verbs are “intransitive” (subcategorizing for EVENT only) in a-structure, and create a raising-type biclausal f-structure. Type II aspectual verbs, on the other hand, are “transitive” in a-structure (subcategorizing for AGENT and SUBEVENT), and create a monoclausal f-structure.

It might seem strange that there should be only two types of aspectual compounds when in fact two parameters of difference are involved. These two parameters could in principle produce four different types of syntactic compounds, but the Japanese aspectual compounds considered above realize only two of them. The question immediately arises as to whether the other two possibilities—transitive argument structure mapped onto control-type biclausal functional structure, and intransitive argument structure mapped onto monoclausal functional structure—exist, and, if they do not, why this is the case.

There are other aspectual verbs, not considered above, that can also be V2 of an aspectual compound verb, and these can similarly be divided into Type I or Type II. For example, *kake(-ru)* ‘be about to’ and *das(-u)* ‘begin’ behave just like the Type I aspectual verbs above, while *makur(-u)* ‘continue (repeat) actively’, *kir(-u)* ‘finish completely’, and *nuk(-u)* ‘finish

completely' behave as Type II aspectual verb.<sup>4</sup>

The verb *toos(-u)* 'do to the end', however, seems to show some properties of functionally biclausal compounds even though it is transitive in a-structure. For example, there do not seem to be restrictions on adjuncts modifying V1 only (at least for some speakers), as illustrated in (25).

- (25) Jon wa shinu made mai-asa soko de ni-jikan  
 John Top die till every-morning there two-hours  
 seisho o yomi-tooshi-ta.  
 Bible Acc read-do.to.the.end-Past  
 'John continued to read the Bible there for two hours every morning  
 till he died.'

Unlike Type I aspectual verbs, however, this verb requires an agentive subject, as (26) suggests.

- (26) \*Sono kane wasaigo made nari-tooshi-ta.  
 the bell Topend till ring-do.to.the.end-Past  
 'The bell rang till the end.' (intended)

Thus, this verb appears to have transitive argument structure and a control-type biclausal functional structure. In the next section I will point out that there are several non-aspectual syntactic compounds like this <sup>4</sup> the third type of syntactic compound verbs, which I call "Type III".

The reason that agentive use of *hajime(-ru)*, *tsuzuke(-ru)* and *oe(-ru)* cannot be functionally biclausal might be related to their semantic nature. As agentive verbs, these aspectual verbs create compounds representing various intentionally controlled phases of a *single* process represented by V1, and in this sense the compound as a whole represents a single (complex) event. This semantic nature makes the embedded argument

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<sup>4</sup>In addition to these V-V aspectual compounds, the Renyookei form of some aspectual verbs plus a copula *da* can be suffixed to another verb to form a complex aspectual predicate. Examples include *yomi-hajime da* (read-begin Cop) 'have just begun to read', *aruki-ppanashi da* (walk-continue Cop) 'have been walking', *nagurare-dooshi da* (strike-Pass-continue Cop) 'have continued to be beaten', and *nuri-tate da* (paint-set.up Cop) 'be freshly painted'. Examples are given in (i).

- (i) Kare wa saigo made {tachi-ppanashi dat-ta / tachi-dooshi dat-ta}.  
 he Top end as.far.as stand-keep Cop-Past stand-continue Cop-Past  
 'He kept standing to the end.'

Most such cases behave like Type I aspectual compounds. One exception is the *-tate da* form, which involves functional monoclausality and the suppression of the agent of the base verb.

structure a SUBEVENT rather than an EVENT. Type I aspectual compounds, in contrast, can represent the beginning, continuation, or cessation of multiple or repetitive occurrences of a process. This is also true of *toos(-u)* above, which can represent intentional continuation of the repeated actions, as in (25). This means that the semantics of V1 and that of the aspectual verb are independent.

The absence of an intransitive argument structure mapped onto a monoclausal functional structure appears to be a systematic gap. I will come back to this issue below.

### 7.3 Non-Aspectual Syntactic Compound Verbs

Aspectual compound verbs are not the only compound verbs that take V1 as head of their complement. In this section I will discuss the nature of other kinds of syntactic compound verbs, showing that they can be categorized into three types in terms of functional complexity and “transitivity” in a-structure.

#### 7.3.1 Functionally Biclausal Syntactic Compound Verbs

Some of those compound verbs which have an XCOMP complement at f-structure are given in (26). They can be further divided into control (equi) type compounds with a “transitive” argument structure (Type III), and raising type compounds with an “intransitive” argument structure (Type I).

(27) a. Control type (Type III):

V2	examples of compound verbs		
<i>kaneru</i>	<i>iki-kaneru</i>	(go-be.reluctant)	‘be reluctant to go’
‘be reluctant’	<i>ii-kaneru</i>	(say-be.reluctant)	‘be reluctant to say’
<i>sobireru</i>	<i>ii-sobireru</i>	(say-miss)	‘miss the chance of saying’
‘miss’	<i>tabe-sobireru</i>	(eat-miss)	‘miss the chance of eating’
<i>sokonau</i>	<i>iki-sokonau</i>	(go-fail)	‘fail to go’
‘fail’	<i>yomi-sokonau</i>	(read-fail)	‘fail to read’
<i>sokoneru</i>	<i>iki-sokoneru</i>	(go-miss)	‘miss the chance of going’
‘miss’	<i>nori-sokoneru</i>	(ride-miss)	‘miss the chance of riding’

b. Raising type (Type I):

<i>sugiru</i>	<i>aruki-sugiru</i>	(walk-exceed)	‘walk too much’
‘exceed’	<i>furi-sugiru</i>	(fall-exceed)	‘fall (rain) too much’

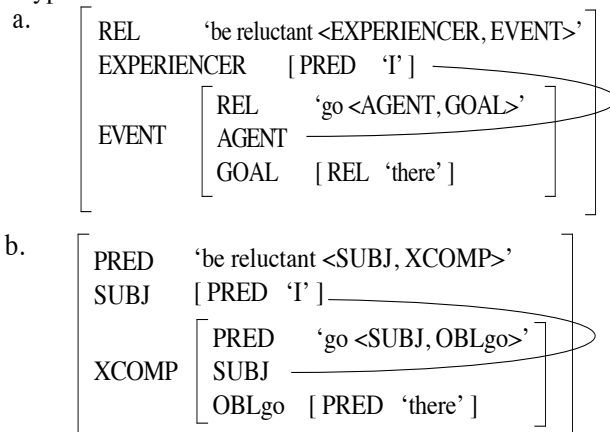
(Interestingly there are no syntactic compounds in Japanese whose V2 involves a ditransitive argument structure. That is, no verb subcategorizing for agent, patient (or recipient), and event (e.g., *tanom(-u)* ‘ask’) can create a syntactic compound.)

Here, I will discuss Type III compound verbs, which have not been discussed above. Take, for example, compound verbs with *kane(-ru)* as V2, illustrated in (28).

- (28) Boku wa soko ni wa iki-kane-ta  
 I Top there Goal Foc go-be.reluctant-Past  
 'I was reluctant to go there.'

This verb requires a human subject, and therefore it subcategorizes for a thematic logical subject as well as a complement, like Type II compounds. However, unlike Type II and like Type I, compound verbs with this verb show functional biclausality. Namely, the argument structure and functional structure of (28) can be characterized as (29a) and (29b), respectively.

(29) Type III



Functional biclausality of compounds with *kane(-ru)* is supported by the following evidence. As in the biclausal Type I aspectual verbs, the passive *-rare* can occur on V1 with this verb but not on V2, as shown by (30a) and (30b).

- (30) a. Jon wa Biru ni wa but-are-kane-ta.  
 John Top Bill by Foc beat-Pass-be.reluctant-Past  
 'John was reluctant to be beaten by Bill.'

- b. \*Sono hon wa mada dare ni mo  
the book Top yet anyone by too  
yomi-kane-rarete i-nai.  
read-be.reluctant-Pass Asp-Neg  
‘The book has never had someone reluctant to read it.’ (intended)

The sentences in (31) also show that honorification marking (with *o-V ni naru*) appears only on V1, which is the pattern observed in functionally biclausal aspectual verbs.

- (31) a. Sensei wa soko ni o-iki ni nari-kanete i-ta  
teacher Top there Goal H-go Cop become-be.reluctant Asp-Past  
‘The teacher was reluctant to go there.’  
b. \*Sensei wa soko ni o-iki-kane ni natte i-ta.  
teacher Top there Goal H-go-be.reluctant Cop become Asp-Past  
‘The teacher was reluctant to go there.’ (intended)

Adjunct modification of the base verb of *kane(-ru)* does not seem to be restricted in any way, as long as the adverbs are focused with *wa* (this is probably due to the negative meaning of *kane(-ru)*). For example, all of the following types of adverb modification are possible.

- (32) Jon wa {Marii to issho ni / ichi-nichi oki ni / sude de } wa  
John Top Mary with / every other day / with bare hands Foc  
iki-kane-ta.  
go-be.reluctant-Past  
‘John was reluctant to go {with Mary / every other day / without any gift}.’

Finally, sentence (33) shows that V1 and its arguments can be replaced by *soo suru* ‘do so’.

- (33) Boku wa sono koto o ii-kane-ta.  
I Top the thing Acc say-be.reluctant-Past  
Marii mo soo shi-kane-ta rashii.  
Mary too so do-be.reluctant--Past seem  
‘I was reluctant to say it. It seems that Mary was reluctant to do so, too.’

It should be noted that all of the Type III compounds listed in (27a) represent some sort of failure to do the process denoted by V1, which in

turn suggests the independence of the processes denoted by V1 and V2 in these cases. This semantic factor evidently makes the subordinate argument structure an EVENT rather than a SUBEVENT.

### 7.3.2 Functionally Monoclausal Syntactic Compound Verbs

There are also compound verbs that take a complement structure at a-structure but not at f-structure. Like Type II aspectual compounds, these verbs have a transitive argument structure. Some of them are listed in (34).

#### (34) Type II

V2	examples of compound verbs		
<i>naosu</i>	<i>kangae-naosu</i>	(think-re-do)	'reconsider'
're-do'('cure')	<i>kaki-naosu</i>	(write-re-do)	'rewrite'
<i>kaesu</i>	<i>yomi-kaesu</i>	(read-re-do)	're-read'
're-do'	<i>mi-kaesu</i>	(look-re-do)	're-look'
<i>wasureru</i>	<i>iki-wasureru</i>	(go-forget)	'forget to go'
'forget'	<i>kaki-wasureru</i>	(write-forget)	'forget to write'
<i>machigau</i>	<i>ii-machigau</i>	(say-mistake)	'say in a wrong way'
'mistake'			
<i>machigaeru</i>	<i>yomi-machigaeru</i>	(read-mistake)	'mispronounce'
'mistake'			
<i>akiru</i>	<i>ne-akiru</i>	(sleep-get.tired)	'get tired of sleeping'
'get tired of'	<i>tabe-akiru</i>	(eat-get.tired)	'get tired of eating'
<i>nareru</i>	<i>aruki-nareru</i>	(walk-get.used)	'get used to walking'
'get used to'	<i>yomi-nareru</i>	(read-get.used)	'get used to reading'

These verbs fail the tests for functional biclausality used above. For example, consider *naosu* 're-do'. The sentence in (35) shows that the compound as a whole can passivize, making the patient of the base verb (*kaki* 'write') into the passive subject.

- (35) Sono hon wa kaki-naos-are-ta.  
 the book Top write-re-do-Pass-Past  
 'The book was rewritten.'

The sentences in (36) show that honorific marking can appear on the compound verb as a whole, but not on V1, as with Type II aspectual verbs.

- (36) a. Sensei wa sono hon o o-kaki-naoshi ni nat-ta.  
 teacher Top the book Acc H-write-re-do Cop become-Past  
 'The teacher rewrote the book.'

- b. ??Sensei wa sono hon o o-kaki ni nari-naoshi-ta.  
 teacher Top the book Acc H-write Cop become-re-do-Past  
 'The teacher rewrote the book.' (intended)

(37) shows that *soo suru* 'do so' cannot replace V1 and its arguments without a loss of acceptability.

- (37) Jon wa hon o yomi-naoshi-ta.  
 John Top book Acc read-redo-Past  
 ??Marii mo soo shi-naoshi-ta.<sup>5</sup>  
 Mary too so do-re-do-Past  
 'John read a book again. Mary did so again, too' (intended)

Sentence (38), for example, suggests that there is some restriction on adjuncts modifying V1 alone.<sup>6</sup>

- (38) Jon wa sono hon o ichi-nichi oki ni yomi-naoshi-ta.  
 John Top the book Acc every-other-day read-re-do-Past  
 'John re-read the book every other day.'  
 \*'John re-did the process of reading the book every other day.'

One important fact characterizing functionally monoclausal compound verbs in (34) is that they are all "transitive" in a-structure. Again, there are no compound verbs which have an intransitive argument structure mapped onto a simplex functional structure. The absence of such a case appears to be a systematic gap. There is no such case in any Japanese complex predicate, as this book points out. Such a possibility is ruled out because it would violate the Fused Argument Condition on SUBEVENT introduced in Chapter 2 (sec. 2.1.3.2), whereby the upper predicate and an embedded SUBEVENT predicate must share an argument. In an intransitive argument structure such sharing of an argument is not possible (cf. (8a)), and therefore it cannot have SUBEVENT. Semantically, this means that no argument of the embedded predicate is related in any way to the process described by the upper predicate, and vice versa. In this sense the two argument structures are independent of each other, and therefore they

<sup>5</sup>The second sentence in (37) is acceptable in the reading 'Mary redid it in that way' (in which *soo* 'so' modifies *shi-naosu* 'redo'), but not in the reading in which *soo suru* replaces *hon o yomu* 'read a book.'

<sup>6</sup>*Aki(-ru)* and *nare(-ru)* appear to allow a wider range of adjuncts to modify V1 alone than do the other V2 verbs in (34).

cannot be regarded as comprising one complex event.

## 7.4 Alternative Analyses of Syntactic Compounds

### 7.4.1 Some Alternative Analyses of Aspectual Compounds

The present analysis of syntactic compounds differs crucially from the previous analysis of Kuno (1983, 1987) and Shibatani (1973b) in that Type I and Type II aspectual compounds are different both in functional complexity as well as transitivity at a-structure. Analyses that do not recognize the difference in functional complexity can explain some but not all of the data presented above.

The passivization and honorification facts of Type I and Type II aspectual compounds above may in fact be explainable in an account in which no difference in functional complexity is recognized. Kuno (1983, 1987), for example, has attributed the non-occurrence of honorific marking on intransitive (Type I) aspectual verbs to the sentential (non-human) nature of the subject of these verbs in Deep Structure, the level at which he claims honorification features are assigned to verbs (see (3a)).

Another analysis that does not recognize a functional complexity difference is Isoda's (1991b) proposal in the framework of LFG, whereby Type I and Type II aspectual verbs differ only in terms of the presence/absence of an agent in the upper argument structure. His argument structures for Type I aspectual compounds (exemplified here by *kaki-kake(-ru)* 'be about to write', which he claims to be Type I) and Type II aspectual compounds (exemplified by *kaki-oe(-ru)* 'finish writing') are shown in (39).

- (39) a. *kaki-kake(-ru)* (Type I) << agent, theme >>  
       b. *kaki-oe(-ru)* (Type II) < agent, < agent, theme >>

Here, the event argument of the aspectual verb is replaced by the argument structure of V1. Isoda (1991b) claims that there is no distinction between EVENT and SUBEVENT, and that all event arguments involved in complex predicates are transparent for the sake of mapping (i.e., SUBEVENTs in my terms), creating functionally monoclausal complex predicates. Thus, both (39a) and (39b) map onto a monoclausal f-structure.

Isoda proposes that passivization is blocked in the case of Type I aspectual verbs due to the Locality Condition on argument structure operations: a suffix that is associated with an operation on a-structure can only affect (i.e., suppress or fuse with an argument of an upper predicate) an argument in the outermost a-structure (cf. Miyagawa's (1989b) account of

passivization, mentioned in 6.2.3.3). It is the absence of an argument in the outermost a-structure in (39a), he claims, that blocks passivization here; passivization would violate the Locality Condition, since there is no argument to suppress in the outermost argument structure in (39a).

Neither Kuno's nor Isoda's account, however, can explain the difference between the two types as regards desiderativization, adjunct modification, and verbal anaphora. If the two kinds of aspectual compounds do not differ in terms of functional complexity, no explanation can be given for their observed differences in these three respects. These differences clearly motivate a difference in the functional complexity of Type I and Type II aspectual verbs.<sup>7</sup>

The existence of Type III compounds is also relevant in evaluating previous proposals in which no functional complexity difference is recognized, such as Kuno's (1983) and Isoda's (1991b). Take Isoda's analysis first. One difference between my analysis and Isoda's uniform monoclausal analysis of syntactic compound verbs concerns their predictions about complex predicates having a control-type biclausal functional structure (Type III). Isoda's analysis would predict that a V2 which has a control-type argument structure should generally allow the passivization of the whole compound, since such verbs have a suppressible argument in the outermost argument structure (cf. (39b) above) and all event arguments are, according to him, transparent for mapping. On the other hand, my analysis allows the possibility of a control-type argument structure being mapped onto a biclausal control-type functional structure, given the choice between EVENT and SUBEVENT. Compounds involving EVENT would not allow the patient of the complement predicate to be a passive subject.

Type III compound verbs in (27a) above present test cases to distinguish between Isoda's account and mine. All the verbs used as V2 in (26a) are control verbs which subcategorize for a thematic subject. The verb

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<sup>7</sup>Another problem with Isoda's approach is the prediction it makes with regard to the causativization of aspectual verbs. According to him, Japanese morphological causatives are functionally monoclausal in all cases, and causativization involves a morpholexical operation on the argument structure. Therefore, he claims, one should not be able to causativize a Type I aspectual compound, since there is no argument in the outermost argument structure that a causee can be fused with (cf. (39a)). However, the following sentence is perfectly acceptable to me.

- (i) Jon wa    Marii ni    tsumi o okashi-kake-sasete                    oi-ta.  
     John TopMary Dat    sin Acccommit-be.about.to-Caus    leave-Past  
     'John let Mary be about to commit a sin.'

*kane(-ru)* ‘be reluctant’, for example, requires a sentient being as the referent of its subject. Therefore these verbs should have a complex a-structure similar to (39b). Isoda’s view would predict that passivization can apply and suppress this argument of V2 without violating the Locality Condition, thereby making the patient of V1 into the passive subject. However, this is not the case, as shown by the unacceptability of (30b) above (the same can be said of the verbalized accusative-marking desiderative predicates such as *machi-ta-garu* ‘show signs of wanting to wait’ that I discussed in Chapter 5 (sec. 5.2.1)). By contrast, a view which allows a functionally biclausal structure in a compound can explain this case by positing a biclausal control structure at f-structure.

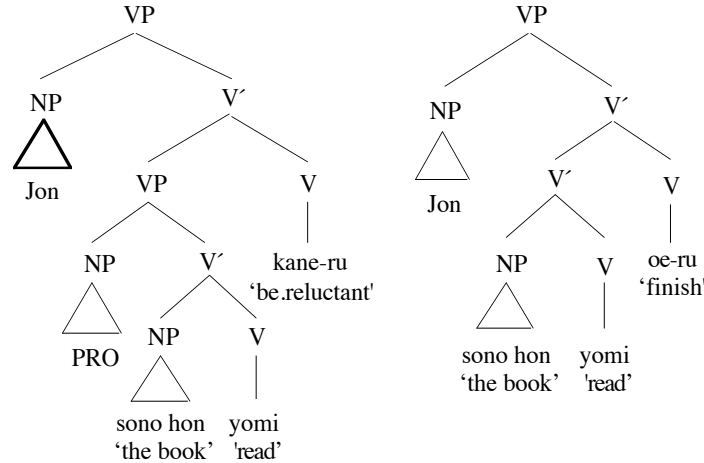
Kuno’s (1983) account similarly runs into problems in dealing with Type III compounds. He points out that compound verbs with *sokone(-ru)* ‘miss’ can have honorification marking placed on V1, like Type I (intransitive, functionally biclausal) aspectual compounds, as in (40) below, and claims that in this case such a sentence has an intransitive biclausal Deep Structure, like Type I. (Note that in Kuno’s dialect a functionally monoclausal compound (Type II) cannot have honorific marking on V1 only.)

- (40) Sensei wa hikooki ni o-nori ni nari-sokone-mashi-ta.  
 teacher Top plane Goal H-ride Cop become-miss-Pol-Past  
 ‘The teacher missed the airplane.’

However, the verb *sokone(-ru)* always requires a human or at least sentient subject, and therefore it subcategorizes for a thematic subject as well as a clausal complement. If so, it cannot be intransitive in a-structure, counter to Kuno’s claim (above). Thus, in an account like Kuno’s, in which no equivalent of a functional complexity difference is recognized, the distinction between Type II and Type III compounds cannot be properly stated.

In a recent study Kageyama (1993) has proposed an analysis in which two parameters of difference are recognized in syntactic compounds. In addition to the equivalent of transitivity difference, he observes the difference in passivizability between my Type II compounds and Type III compounds, and argues that this difference comes from the type of the complement involved: Type II involve a V’ complement, while Type III involve a VP complement. (Here he assumes an Intra-VP subject analysis (Kitagawa 1986, Fukui 1986, Kuroda 1988).)

- (41) a. VP complement (my Type III)    b. V' complement (my Type II)



This analysis is somewhat similar to mine in that Type III involves a full clausal embedding, while this is not the case with Type II, although the analysis of Type II does involve a syntactically embedded substructure, unlike my f-structure for Type II.

Kageyama links the possibility of passivization to the possibility of theta role assignment to the internal argument of V1 by V2. In his account, the object of V1 is assigned a theta role not only by V1 but also by V2 in Type II compounds (with a relaxation of the Theta Criterion), but only by V1 in Type III compounds. This, he claims, is consistent with the Baker's (1989) claim that a theta role is assigned within V'. Thus, the object of V1 is in a sense also the object of V2 in Type II compounds, and therefore passivization of Type II can make this object into the passive subject. It is not entirely clear, though, how passivization is formulated in his analysis.

This analysis cannot explain those differences between Type II and Type III other than passivization, such as differences in adjunct interpretation. Kageyama's representation for Type II compounds in (41b) should allow V' adverbial modifiers to occur within the embedded V', whereas we have seen that this is not the case (7.2.4). Another problem is how to deal with cases in which V1 of a Type II compound is intransitive, as in (42).

- (42) a. Boku wa ne-naoshi-ta.  
           I Top sleep-cure-Past  
           'I slept again (to cure the undesirable effect of previous sleeping).'

- b. Pooru wa saigo made hashiri-oe-ta.  
 Paul Top end as.far.as run-finish-Past  
 'Paul finishing running to the end.'

In these cases V2 would not have any internal argument to which to assign a role, which he claims is assigned when V1 is transitive.

Kageyama's analysis in which the theta role is assigned by V2 to an argument of V1 is partly motivated by the observation that V2 imposes a semantic restriction on V1 in Type II compounds. For example, the complement of *oe(-ru)* must be telic in nature (and therefore the object of the complement, if present, must represent the entity that is finished). Such a close relation between the meanings of the two verbs in Type II compounds is captured in the present analysis by the SUBEVENT status of the complement.

#### 7.4.2 Passivization and Syntactic Compound Verbs

The issue of the passivizability of syntactic compounds has often been discussed in the literature (Sugioka 1984, Miyagawa 1989b, etc.). Sugioka (1984) makes a certain observation about honorification and passivization of aspectual compound verbs, but without making a distinction between two kinds of aspectual verbs. She proposes that both the passive morpheme and honorific marking are suffixed to V' (and not to V'') in unmarked cases to form a syntactic compound, and she assumes that an aspectual verb is attached to a V' to form a V''. Therefore, she claims, honorific marking and a passive morpheme can appear on V1, but only marginally on the aspectual verb. This claim is empirically false, given the data above (sec. 7.2.1), showing that passive marking can occur very naturally on Type II aspectual verbs (see also Miyagawa 1989b on this point).

Miyagawa (1989b) correctly recognizes the existence of cases in which the whole aspectual verb is passivized, making the object of V1 into the passive subject. In his theory, passivization is formulated as the absorption of the case-assigning property of a transitive verb by the morpheme *-rare*, as I mentioned in Chapter 6 (sec. 6.2.3.3). He interprets the passivizability of the whole aspectual compound verb as showing that *-rare* can in fact absorb case-assigning ability from V1 even when *-rare* is attached to V2. This, he observes, is an exception to his generalization that *-rare* absorbs case-assigning ability only from the verb to which it is suffixed (adjacent). He solves this problem by stipulating that aspectual verbs are to count as "transparent" for the sake of case absorption. He speculates that this might be due to the fact that "aspect does not change fundamental lexical properties of its base verb" (his p. 184). However, it is not only aspectual verbs that constitute exceptions to his generalization. There are non-

aspectual V2 that create Type II compounds, as pointed out above. In addition as I discussed in Chapters 5 and 6, coercive causatives and verbalized nominative-marking desideratives also allow the passivization of the whole predicate, making the patient of the base verb into a passive subject.

Miyagawa's view contrasts with my account here in an interesting way. In the present account, the passivizability of complex predicates such as desideratives, causatives, and aspectual verbs depends on the kind of complement structure that these verbs select for (i.e., whether they select for EVENT or SUBEVENT). I have also observed that these complex predicates can be ambiguous in terms of the type of complement structure they take in a-structure. Thus, the passivizability of a complex predicate does not depend on the superficial question of what kinds of morphemes may intervene between the transitive verb and *-rare* (e.g., aspectual or not), but is instead sensitive to the underlying representation of the complex predicate.

## **7.5 Concluding Remarks**

In this chapter, I have examined aspectual and other syntactic compounds in Japanese, and have shown that they constitute one word at c-structure, one or two words at f-structure, and two words at a-structure. Three types of syntactic compounds have been recognized. Some compound verbs, such as Type I aspectual compounds, have a biclausal argument structure with an “intransitive” second verb subcategorizing for EVENT only; this a-structure is mapped onto a biclausal, raising-type f-structure. Other compound verbs, such as Type II aspectual compounds, have a biclausal argument structure with a “transitive” second verb subcategorizing for AGENT and SUBEVENT; this a-structure is mapped onto a monoclausal f-structure. Other syntactic compound verbs (Type III) have a biclausal argument structure with a transitive second verb subcategorizing for AGENT or EXPERIENCER and EVENT; this a-structure is mapped onto an control-type biclausal f-structure. Such variation cannot be explained unless one recognizes functional complexity differences as well as argument structure differences. It also supports the independence of wordhood at f-structure and at a-structure.

## CHAPTER 8

### Lexical Compound Verbs

Japanese also has a large number of V-V compounds which do not involve any complement structure, such as *oshi-taosu* (push-topple) ‘topple by pushing, push down’ and *nomi-aruku* (drink-walk) ‘walk drinking’.<sup>1</sup> These are what Moriyama (1988), Kageyama (1989, 1993), and Masuoka & Takubo (1992) have called lexical compound verbs. The number of such compound verbs in Japanese is quite large. The most comprehensive dictionary of compound verbs in Japanese (Tagashira & Hoff 1986) lists 1157 compound verbs, in addition to what they call phrasal compounds, which roughly correspond to my syntactic compound verbs. However, this is by no means exhaustive. In fact, less than half of the examples in this chapter can be found in their list.

This kind of V-V compound in Japanese has been studied by Takebe (1953), Teramura (1969), Himeno (1975, 1976, 1977, 1978), Nagashima (1976), Kageyama (1982, 1989, 1993), Yamamoto (1984), Michiaki Saito (1984, 1985, 1992), Tagashira & Hoff (1986), Tsukamoto (1987), Moriyama (1988), and Masuoka & Takubo (1992). Among these, the closest to the present study in approach is that of Kageyama (1993), who has independently made a number of observations similar to those reported below, but often with different conclusions.

Morphologically, a lexical compound verb constitutes a single morphological word in the same way as a syntactic compound verb does; for example, it prohibits the separation of its component verbs (e.g., *\*oshi wa taosu*) and allows Renyookei Nominalization (e.g., *oshi-taoshi* ‘toppling by pushing’).

This chapter will discuss the nature of such lexical compound verbs. In 8.1 I will point out some regularities in the patterns whereby two verbs are compounded to form a lexical compound. In 8.2 I will examine the functional and argument structures of lexical compounds. I will argue that these compounds constitute one word in both argument structure and functional structure as well as constituent structure, though they are

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<sup>1</sup>A condensed version of this chapter has been presented in Matsumoto 1992b.

complex in semantic structure. In 8.3, I will discuss the issue of headedness in compounds. I will point out that three types of lexical compounds can be recognized, reflecting the ways the argument structure of the compound reflects those of its parts. In some cases the argument structure of the compound is identical with that of the second verb (V2); in other cases it is identical with that of the first verb (V1); in still other cases it is a constrained mixture of the arguments of both component verbs. I will argue that this third pattern cannot be explained by an analysis based on the inheritance of argument structure from the head component verb of the compound (cf. Di Sciullo & Williams 1987, etc.). In 8.4 I will discuss the semantic structure of lexical compounds. I will argue that lexical compounding involves the embedding of the semantic structure of a non-head verb into that of a head verb. In 8.5 I will discuss the semantic constraints on lexical compounds. I will point out that each of the component verbs comprising a compound must have at least one argument which is referentially identical with an argument of the other component verb (Shared Participant Condition). I will also suggest that there are certain conditions on the possible patterns of such identity at the level of semantic structure (semantic linking). These conditions reveal important constraints on the semantic structure of a predicate, an issue which will be further pursued in the next two chapters.

## **8.1 Patterns in Lexical Compounding**

### **8.1.1 Types of Lexical Compounds**

Lexical compounds in Japanese can be divided into several types in terms of the semantic relations obtaining between the two component verbs (Tagashira & Hoff 1986). When both component verbs have their full verbal meanings, there can be a restricted number of semantic relations between them. V1 may represent a manner in which the process denoted by V2 is performed (manner compounds). An example of this is *hashiri-agaru* (run-go.up) 'run up'. There are also cases where V1 represents the means by which the process denoted by V2 is performed (means compounds). An example is the compound verb *oshi-taosu* (push-topple) 'push down'. In other cases V1 represents the cause by which the process denoted by V2 comes to happen (cause compounds). An example is *uchi-agaru* (hit-go.up) 'be hit up (in the air), go up by being hit'. In still other cases, two verbs with similar meanings are compounded to indicate the repetitiveness or intensity of the described process (pair compounds). An example is *hikari-kagayaku* (shine-shine) 'shine brightly'. These appear to be the four major types. There are sporadic examples of other semantic relations in compounds. Most other semantic relations are completely excluded from lexical

compounding: V1 cannot represent, for example, the result or purpose of V2.

In other cases, V1 or V2 has lost or bleached its verbal meaning and is used to add an adverbial meaning to the other verb. An example is *shikari-tsukeru* (scold-harshly) 'scold harshly'. In still other cases the meaning of the compound is idiosyncratic and cannot be predicted from the meanings of its parts. These include *ochi-tsuku* (fall-be.attached) 'calm down' and *hiki-tsukeru* (pull-attach) 'have a convulsion'. This last type of semantically opaque compound will not be discussed.

In what follows, I will examine properties of each type of compound identified on the basis of such semantic relationship between V1 and V2: 1) pair compounds, 2) cause compounds, 3) manner compounds, 4) means compounds, 5) compounds exhibiting other relations, 6) compounds with semantically deverbalized V2, and 7) compounds with semantically deverbalized V1. I will point out that these different types of compounds pattern differently in the following three respects.

The first one is the position of the head. It has been pointed out that the grammatical properties of the compound as a whole are identical with those of V1 in some cases and with those of V2 in other cases. Takebe (1953) has noted, for example, that compound verbs can be divided into two types according to which of the component verbs can be used alone in the same sentence frame in which the compound is used. Some compounds, like *shikari-tsukeru* (scold-harshly) 'scold harshly' allow V1 to be used in the sentence frame in which the compound is used, while others, like *uchi-agaru* (hit-go.up) 'be hit up (in the air)', allow V2 to be used in this way. Essentially, this is a classification according to how the component verb determines the argument structure of the whole. Some scholars have focused on how the case-marking properties of the whole are determined by those of the component verbs (e.g., Yamamoto 1984), but the relevant distinction is better understood in terms of argument structure rather than case marking (see Kageyama 1993; see also Nagashima 1976, Tsukamoto 1987, Moriyama 1988). That component verb which determines the argument structure and related properties (e.g., case marking) of the whole compound may be called the *head* (e.g., Moriyama 1988, Kageyama 1993). Thus, lexical compounds whose argument structure is identical with that of V1 and that of V2 might be said to be left-headed and right-headed, respectively.

This characterization appears to fit well with the notion of inheritance (percolation): a compound inherits the syntactic features of its head (see Lieber 1980, 1992, Williams 1981a, Selkirk 1982, Kageyama 1982, 1993, Roeper 1987, Di Sciullo & Williams 1987, Sugioka 1989). What are

inherited might include not only the features of grammatical categories such as N and V, and syntactic features concerning plurality and gender, but also argument structure. In this view, a compound inherits the argument structure of its head (cf. Lieber 1992), and arguments of the non-head are not part of the argument structure of the compound (Di Sciullo & Williams 1987:30). In fact, however, there is a type of compound in which arguments of both component verbs are mixed. I will discuss this issue in 8.3.

The second one is the patterns in the combination of two component verbs. Typically, intransitive verbs are compounded with intransitive verbs, and transitive verbs with transitive verbs.<sup>2</sup> Kageyama (1993) has recently argued that the relevant distinction here is between transitive/unergative verbs on the one hand and unaccusative (intransitive) verbs on the other; a transitive or unergative verb can be compounded only with another verb of this group, while an unaccusative verb can be compounded only with an unaccusative verb. I will show, however, that one major type of compound exhibits the combinations that do not match this characterization.<sup>3</sup>

Finally, compounds can differ in terms of the patterns in which arguments of the two component verbs are interpreted as referentially identical. In *oshi-taosu* 'topple by pushing', the agent of *osu* and that of *taosu* are interpreted as referentially identical, and so are the patient of *osu* and that of *taosu*. The patterns of such correspondence depend on the semantic relations between V1 and V2 in a compound.

Before proceeding, one caveat must be made. In many cases it is in fact difficult to determine which of the component verbs is the head. For example, the compound *oshi-akeru* (push-open) 'push open' has an argument structure identical with that of either component verb, and therefore it might be right-headed or left-headed.<sup>4</sup> Unequivocal cases of

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<sup>2</sup>Cf. Ramchand (1991), who claims that Bengali completive compound verbs require that the completive verb match the other verb of the compound in terms of transitivity.


<sup>3</sup>The unergative/unaccusative distinction is a syntactic distinction which is semantically motivated (Kageyama 1993, Levin & Rappaport Hovav 1995). However, syntactic tests for this distinction used by Kageyama and others have some problems (see Matsumoto 1996c). In this book, therefore, I will use semantic criterion of agentivity for the distinction between unaccusative and unergative verbs. Note that Japanese intransitive verbs are not always specified for this distinction. For example, the verb *agaru* 'go up' can have an agentive as well as a non-agentive subject. I will treat such verbs as ambiguous, as Kageyama (1993) does. In contrast to *agaru*, verbs indicating a downward motion are specified for this distinction: *ochiru* 'fall' is unaccusative while *oriru* 'go down' is unergative.

<sup>4</sup>Kageyama (1993:103-104) claims that patterns in selectional restrictions can be used to identify the head in such cases. For example, he claims that the *furi-tsumoru* (fall-accumulate) 'fall and accumulate', which has an argument structure identical

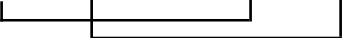
right- or left-headed compounds can be identified when the argument structure of the two component verbs differs. Decisions in ambiguous cases can be made by looking at the patterns shown by similar unequivocal compounds. For example, I will point out that there are unequivocally right-headed means compounds but no such unequivocally left-headed compounds. This observation makes it highly likely that *oshi-akeru* is also right-headed.<sup>5</sup> In fact, the majority of lexical compounds are right-headed, as we will see in the next a few sections. This appears to be an unmarked type, and is consistent with the fact that Japanese morphology is typically right-headed (see Kageyama 1982, Sugioka 1989).

### 8.1.2 Pair Compounds

First, let us examine pair compounds. Pair compounds are given in (1b) and (2b). (1a) and (2a) describe the patterns in which arguments of two component verbs are related. The line linking arguments indicates which of the arguments are referentially identical. The italicized arguments are reflected in the argument structure of the whole. (The left side of the equation like (1a) is given here for an expository purpose only, and should not be taken to indicate the composite argument structure that lexical compounds might have and the pattern of argument fusion at a-structure. In fact, I will argue later that the argument structure of those compounds is the right side of the equation, and that the association of arguments takes place in semantic structure rather than argument structure.)

(1) a.  $V1 <th> + V2 <th> = V <th>$   


b. *hikari-kagayaku* (shine-shine) 'shine brightly'

(2) a.  $V1 <ag, (loc/go/etc.)> + V2 <ag, (loc/go/etc.)> = V <ag, (loc/go/etc.)>$   


with that of either component verb, respects the same selectional restrictions as V2 (i.e., *tsumoru*), and therefore V2 is the head. In support of this claim he notes that *furi-tsumoru* cannot have *ame* 'rain' as its subject, like *tsumoru* but unlike *furu*. In fact, however, this compound verb respects restrictions placed by V1 as well. *Furi-tsumoru* cannot have *konoha* 'leaf' as its subject, like *furu* (which requires its subject to be something that falls from the sky) but unlike *tsumoru*. Given that selectional restrictions are semantic in nature, this situation naturally arises when two verb meanings are mixed in one semantic structure of a compound verb, whether or not V1 or V2 is the head.

<sup>5</sup>In listing compound verbs of each type, I will critically draw examples from the previous literature on compounds; I will not acknowledge my sources each time, which would be too cumbersome.

- b. *ukare-sawagu* (make.merry-be.noisy) 'go on a spree'  
*naki-sakebu* (cry-shout) 'cry out'  
*tobi-haneru* (jump-leap) 'jump repeatedly'

As (1a) and (2a) show, pair compounds are composed of two component verbs that are identical in argument structure. The argument structure of the compound is therefore the same as that of either component verb, and accordingly such compounds are potentially ambiguous in terms of headedness, though they are likely to be right-headed, given the lack of evidence to the contrary.

### 8.1.3 Cause Compounds

Cause compounds exhibit a few regularities. They all have an unaccusative verb as V2, with the theme of V2 referentially identical with a V1 argument. They are all right-headed in cases where headedness is unequivocal.

A first group of cause compounds is given in (3b) and their pattern is described in (3a). These are ambiguous in terms of headedness.

- (3) a.  $V1 \langle th \rangle + V2 \langle th \rangle = V \langle th \rangle$
- └──────────┘
- b. *yake-shinu* (burn-die) 'die from burning'
- obore-shinu* (be.drowned-die) 'be drowned to death'
- ne-shizumaru* (sleep-become.silent) 'become silent because of sleeping'
- ne-bokeru* (sleep-become.senile) 'be absent-minded from being not fully awake'
- yake-agaru* (burn-be.completed) 'be burnt completely'
- ('become ready from burning')
- koge-agaru* (scorch-be.completed) 'be scorched completely'

Some unequivocally right-headed cause compounds are shown in (4). The argument structure of these compounds is identical with that of V2, with the V2 argument that is unlinked to an argument of V1 included in the argument structure of the whole.

- (4) a. V1 <th> + V2 <th, go/loc> = V <th, go/loc>  
           └──────────┘  
       b. *kuzure-ochiru*   (collapse-fall) 'collapse down'  
           *yake-ochiru*   (burn-fall)    'burn down'

For example, the verb *kuzure(-ru)* ‘collapse’, which is V1 of the compound *kuzure-ochiru*, has only one argument (theme), but V2 *ochiru* ‘fall’ has two (theme and goal). The compound verb as a whole takes this additional

argument, just as V2 *ochiru* does.<sup>6</sup>

In (5) and (6), an unaccusative V2 is compounded with a transitive V1, with V2 theme linked to V1 patient. The argument structure of the compound is identical with that of V2, with V1 agent excluded from the argument structure of the whole. (5) and (6) differ in that the latter has a goal argument in addition, often associated with a goal argument of V1, if it has one.

(5) a. V1 <ag, pt, (...)> + V2 <th> = V <th>  
└──────────┘

- b.
- |                      |                      |                               |
|----------------------|----------------------|-------------------------------|
| <i>humi-katamaru</i> | (tramp-harden)       | 'be tramped hard'             |
| <i>ori-magaru</i>    | (fold-bend)          | 'be bent'                     |
| <i>ni-tsumaru</i>    | (boil-be.packed)     | 'become thick due to boiling' |
| <i>tori-sorou</i>    | (take-be.collected)  | 'be fully gathered'           |
| <i>kaki-agaru</i>    | (write-be.completed) | 'be written up'               |
|                      |                      | ('be finished by writing')    |
| <i>nui-agaru</i>     | (sew-be.completed)   | 'be sewn up'                  |
| <i>arai-agaru</i>    | (wash-be.completed)  | 'be washed completely'        |
| <i>shi-agaru</i>     | (do-be.completed)    | 'be completed'                |
| <i>yaki-agaru</i>    | (burn-be.completed)  | 'be roasted completely'       |
| <i>taki-agaru</i>    | (steam-be.completed) | 'be steamed completely'       |
| <i>tsukuri-agaru</i> | (make-be.completed)  | 'be finished'                 |

(6) a. V1 <ag, pt(-th), (go)> + V2 <th, go> = V <th, go><sup>7</sup>  
└────────┘ └────────┘

<sup>6</sup>One peculiar cause compound somewhat similar to those in (4) is *shini-wakareru* (die-be.separated) 'be separated with (someone) because of his/her death'.

<sup>7</sup>In this chapter, I will indicate the dual roles of a single argument by hyphenating two role names. For example, an agentive moving entity will be labeled ag-th, and an affected entity which moves or changes, pt-th. The idea that a given argument can play two roles has already been introduced in 2.1.2.1 (cf. Jackendoff 1990).

b.	<i>uchi-agaru</i>	(hit-go.up)	'be hit high up (in the air)'
	<i>sui-agaru</i>	(suck-go.up)	'be sucked up'
	<i>tsuki-agaru</i>	(thrust-go.up)	'be thrust up'
	<i>tsumi-agaru</i>	(pile-go.up)	'be piled up'
	<i>tsuri-sagaru</i>	(angle-go.down)	'be made to be hung down'
	<i>tsuki-sasaru</i>	(thrust-stick)	'pierce'
	<i>ii-tsutawaru</i>	(say-be.transmitted)	'be orally transmitted'
	<i>hari-tsuku</i>	(paste-be.attached)	'be pasted'
	<i>yaki-tsuku</i>	(burn-be.attached)	'stick (to ...) by burning'
	<i>musubi-tsuku</i>	(fasten-be.attached)	'be connected'

The use of *uchi-agaru* 'be hit high up in the air' in (6b) is illustrated in (7).

- (7) Sono booru wa sora takaku (\*Jon ni yotte) uchi-agat-ta.  
the ball Top sky high John by hit-go.up-Past  
'The ball was hit high up in the sky.'

There are also unergative-unaccusative and transitive-unaccusative right-headed cause compounds in which the V2 theme is linked to V1 agent rather than patient. Examples are given in (8b) and (8c), respectively. The argument structure of the compound as a whole is identical with that of V2, with V1 patient, if present, is excluded.

- (8) a.  $V1 <ag, (pt)> + V2 <th> = V <th>$   

└──────────┘
- |    |                           |                    |  |
|----|---------------------------|--------------------|--|
| b. | <i>aruki-kutabireru</i>   | (walk-get.tired)   | 'get tired from walking'                   |
|    | <i>hashiri-tsukareru</i>  | (run-get.tired)    | 'get tired from running'                   |
|    | <i>hataraki-tsukareru</i> | (work-get.tired)   | 'get tired from working'                   |
|    | <i>tatakai-horobiru</i>   | (battle-be.ruined) | 'fall because of fighting'                 |
|    | <i>tatakai-yabureru</i>   | (battle-lose)      | 'lose as a result of fighting'             |
| c. | <i>nomi-tsubureru</i>     | (drink-collapse)   | 'pass out from drinking'                   |
|    | <i>nomi-taoreru</i>       | (drink-fall.down)  | 'pass out from drinking'                   |
|    | <i>kui-tsubureru</i>      | (eat-collapse)     | 'become unable to move<br>from overeating' |

Note that all the unaccusative verbs involved here subcategorize for a human or animate subject.<sup>8</sup>

<sup>8</sup>The verb *akiru* 'get tired of', which can form a Type III syntactic compound, also forms a cause compound of this type. Consider (i).


- (i) Boku wa sono hon {o/ni wa} yomi-aki-ta.  
I Top the book Acc/Dat Foc read-get.tired-Past  
'I got tired of reading the book.'

### 8.1.4 Manner Compounds

Manner compounds are possible with all types of V2, unaccusative, unergative, and transitive. They are mostly right-headed, but when V2 is an unergative verb representing spatial motion or a related meaning, the arguments of V1 and V2 are mixed in the argument structure of the compound.

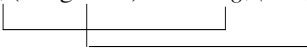
#### 8.1.4.1 Right-headed Manner Compounds with Intransitive V2

Manner compounds with an unaccusative V2 are given in (9). These are clearly right-headed, with the unlinked V2 argument included in the argument structure of the compound.

- (9) a.  $V1 <th> + V2 <th, go/loc> = V <th, go/loc>$   

- b.
- |                      |               |               |
|----------------------|---------------|---------------|
| <i>nagare-ochiru</i> | (flow-fall)   | 'flow down'   |
| <i>mai-ochiru</i>    | (dance-fall)  | 'soar down'   |
| <i>mai-agaru</i>     | (dance-go.up) | 'soar up'     |
| <i>tare-sagaru</i>   | (dangle-hang) | 'hang down'   |
| <i>hane-kaeru</i>    | (jump-return) | 'bounce back' |

Note that these are all unaccusative-unaccusative compounds; no case of unaccusative V2 compounded with a transitive or unergative V1 are found among manner compounds.

There are also manner compounds with an unergative V2. These are in most cases compounded with an unergative or transitive V1 (though some involve an unaccusative V1), and V1 logical subject is referentially identical with V2 agent. In some cases the argument structure of the whole is identical with that of both component verbs, as shown in (10).

- (10) a.  $V1 <ag, (loc/go/etc.)> + V2 <ag, (loc/go/etc.)> = V <ag, (loc/go/etc.)>$   

- b. *tachi-narabu* (stand-line.up) 'line up, standing'

Some cases of unambiguously right-headed compounds with unergative

---

When the NP *sono hon* 'the book' is marked in the accusative, as it would be with V1 *yom(-u)* alone, (i) involves a Type III syntactic compound. When it is marked in the dative, as it would be with V2 *akiru*, (i) involves a cause lexical compound. *Akiru* is not fully productive in cause compounds: *yobi-akiru* (call-get.tired) 'get tired of calling', for example, can be only a Type III syntactic compound. The verb *nareru* 'get used to' can also create Type III syntactic compounds as well as cause lexical compounds.

- b. *osoī-kakarū* (attack-fall.on) 'fall on, attacking'  
*kiri-kakarū* (cut-fall.on) 'fall on, slashing'  
*kami-tsuku* (bite-stick) 'cling to, biting'  
*kajiri-tsuku* (gnaw-stick) 'cling to, gnawing'

Other unequivocally right-headed manner compounds with an unergative V2, of a type different from (11), are given in (12).

- b. *humi-todomaru* (stamp-remain) 'refrain from going'  
*tadori-tsuku* (follow-reach) 'find one's way to'  
*seme-iru* (attack-go.in) 'go in, attacking'  
*shinobi-iru* (hide.from-go.in) 'go in secretly'  
*wake-iru* (divide-go.in) 'make one's way into'  
*seme-komu* (attack-go.in) 'go in, attacking'  
*naguri-komu* (strike-go.in) 'go in with violence'  
*donari-komu* (yell.at-go.in) 'go in with a loud voice,  
storm into'

Many manner compound verbs with an unergative V2 exhibit a different pattern; their argument structure is a constrained mixture of arguments from the two component verbs. This is true of the manner compound verbs in (13), (14), (17) and (19), in which unergative intransitive motion verbs (V2) are compounded with verbs representing an accompanying activity or state (V1). I will first discuss the clear cases, given in (13b) and (14b).

(13) a.  $V1<ag, pt> + V2<ag-th, loc/go/src> = V<ag-th, pt, loc/go/src>$

b. <i>tsure-saru</i>	(take-leave)	'take away, kidnap'
<i>tabe-aruku</i>	(eat-walk)	'eat around'
<i>nomi-aruku</i>	(drink-walk)	'drink around'
<i>utai-aruku</i>	(sing-walk)	'walk singing'
<i>tsure-aruku</i>	(take-walk)	'walk accompanying'
<i>tazune-aruku</i>	(search-walk)	'walk searching'
<i>yobi-mawaru</i>	(call-go.around)	'go around, calling'
<i>sagashi-mawaru</i>	(search-go.around)	'go around, searching'
<i>atsume-mawaru</i>	(collect-go.around)	'go around, collecting'
<i>motome-yuku</i>	(seek-go)	'go seeking' <sup>9</sup>

(14) a.  $V1<ag, pt-th, loc> + V2<ag-th, loc/go/src>$   
 $= V<ag-th, pt(-th), loc/go/src>$

b. <i>mochi-aruku</i>	(have-walk)	'carry around'
<i>mochi-saru</i>	(have-leave)	'go away with'
<i>mochi-kaeru</i>	(have-return)	'bring back home'
<i>mochi-yoru</i>	(have-come.near)	'bring together'
<i>mochi-komu</i>	(have-go.in)	'bring in'

Some of the above compounds have been treated as left-headed compounds (see below) in previous literature. However, a close examination suggests that these compounds in fact mix arguments from both component verbs. Take *tsure-saru* (take-leave) 'take away' in (13) and *mochi-kaeru* (have-return) 'bring back home' in (14), for example. These compounds take the agent and locative or goal of V2 as well as the patient of V1 as their arguments, as shown below.<sup>10</sup>

<sup>9</sup>The verb *yuku* 'go' is a literary variant of *iku* 'go', and compounds with this verb are also used in literary contexts. Unlike *yuku*, *iku* cannot participate in V-V compounding.

<sup>10</sup>Verbs with *aruku* and *mawaru* as V2 are listed in (13) under the assumption that the accusative-marked locative phrase with these verbs is an argument of these verbs. Under this assumption, (i) shows that *nomi-aruku*, for example, is argument-mixing.

(i) Yoru no Shinjuku o Jon wa sake o nomi-arui-ta.  
 night Gen Shinjuku Acc John Top sake Acc drink-walk-Past  
 'John walked Shinjuku at night, drinking sake.'

- (15) a. Dareka ga kodomo o dokoka ni tsure-sat-ta.  
 someone Nom child Acc somewhere Goal take-leave-Past  
 'Someone took the child away.'
- b. Jon wa kamera o ie ni mochi-kaet-ta.  
 John Top camera Acc house Goal have-return-Past  
 'John brought back the camera.'

The argument structure of a compound of this type is not always simply the aggregate of all the arguments of the component verbs. There appear to be some additional constraints on the argument structure of the whole. Generally speaking, when both V1 and V2 take locational arguments (i.e., locative, source, goal), the locational arguments of one of the component verbs must be suppressed. The choice of the locational arguments to be suppressed depends on the particular combination of component verbs. It appears that if the locational arguments of one component verb are optional or can be suppressed under the unspecified argument deletion (Lehrer 1970, Fillmore 1985), then those arguments are suppressed. For example, *mochi-kaeru* (have-return) 'bring back (home)' preserves the goal argument of *kaeru* 'return' and suppresses the locative argument of *motsu* 'have', as shown in (16).

- (16) Jon wa (\*te ni) kamera o ie ni mochi-kaet-ta.  
 John Top hand Loc camera Acc house Goal have-return-Past  
 'John went back (home) with the camera (in his hand).'

This is true of the compounds in (14b).

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In Matsumoto 1992a I claimed that *nomi-aruku* is not argument-mixing, on the basis of (ii) below.

- (ii) \*Jon wa sake o Shinjuku o nomi-arui-ta.  
 John Top sake Acc Shinjuku Acc drink-walk-Past  
 'John walked Shinjuku, drinking sake.' (intended)

The unacceptability of (ii), however, can be attributed to some word-order constraint according to which a locative *o*-phrase must precede other accusative phrases (Matsumoto 1992b). This constraint is independently motivated by the difference between (iii) and (iv).

- (iii) Jon wa yoru no haiuei o kuruma o tobashi-ta.  
 John Top night Gen highway Acc car Acc fly-Past  
 'John drove his car fast on the highway at night.'
- (iv) \*Jon wa kuruma o yoru no haiuei o tobashi-ta.  
 John Top car Acc night Gen highway Acc fly-Past

Those compounds in (17b) can be regarded as argument-mixing with the locative/goal argument of V2 suppressed, given that locative/goal of V1 cannot be suppressed.

(17) a.  $V1<ag, pt-th, go> + V2<ag-th, loc/go/src> = V<ag-th, pt(-th), go>$

b. <i>sute-saru</i>	(throw.away-leave)	‘leave after throwing away’
<i>tsuge-mawaru</i>	(tell-go.around)	‘go around, telling’
<i>todoke-deru</i>	(report-go.out)	‘go forward to report’
<i>negai-deru</i>	(wish-go.out)	‘go forward to ask’
<i>uttai-deru</i>	(appeal-go.out)	‘go forward, appealing’

In this analysis, *sute-saru* (throw.away-leave) ‘leave after throwing away, leave behind’, for example, preserves the locative argument of *suteru* and suppresses the source arguments of *saru*, creating an apparently left-headed compound, as shown in (18).

(18) Dareka ga soko ni gomi o (\*kooen kara)  
 someone Nom there Loc garbage Acc park from  
*sute-satta* (koto)  
 throw.away-leave-Past Comp  
 ‘(the fact that) someone left (the park) after throwing away garbage in that place.’

The compounds in (19b) might also be argument-mixing, with the locational arguments of V1 and V2 referentially identical, given that the two themes involve a shared path.

(19) a.  $V1<ag, pt(-th), (loc/go/src)> + V2<ag-th, loc/go/src>$   
 $= V<ag-th, pt-th, loc/go/src>$

b. <i>hakobi-mawaru</i>	(transport-go.around)	‘carry around’
<i>hakobi-oriru</i>	(transport-go.down)	‘carry downward’
<i>hakobi-agaru</i>	(transport-go.up)	‘carry up’
<i>hakobi-saru</i>	(transport-leave)	‘carry away’
<i>hakobi-komu</i>	(transport-go.in)	‘carry in’

Such restrictions are part of the constraints on the possible argument structure of a predicate in general. The locational arguments of V1 and V2 above are interpreted with respect to the location of two *different* entities (e.g., camera and John in (18)). This appears to be generally impossible for

a predicate in Japanese, as I will argue more closely in the next chapter (sec. 9.3.1).<sup>11</sup>

Unaccusative motion verbs do not exhibit such a mixture of arguments. Compare in this regard the unaccusative verb *ochiru* ‘fall’ and its unergative counterpart *oriru* ‘go down’, for example. While *oriru* participates in an argument-mixing compound (e.g., *hakobi-oriru* (transport-go.down) ‘carry downward’), *ochiru* ‘drop’ does not. Note also that some verbs, including *agaru* ‘go up’, are ambiguously unergative and unaccusative; such verbs can only participate in an argument-mixing compound in their unergative use. Compare the unergative *agaru* in *hakobi-agaru* ‘carry up’, which mixes arguments, and the unaccusative *agaru* in *uchi-agaru* ‘be hit up in the air’, which does not.

There are a few argument-mixing compound verbs where V2 is not a verb of motion. They are given in (20) below.

- (20) *nagame-kurasu* (look-lead.a.life) ‘lead a life, looking over at’  
*nageki-kurasu* (mourn-lead.a.life) ‘lead a life, mourning’  
*utsuri-sumu* (transfer-live) ‘change one’s living place,  
 settle down’

In addition to an agent, the first two compounds subcategorize for patient (as does V1) in addition to locative (as does V2), and the third subcategorizes for source and goal (as does V1). These compounds might be said to involve motion of an abstract kind, given that leading a life is in a sense motion through time, and, as far as the third item goes, the meaning of V1 makes the compound semantically like a motion verb.

Finally, consider the compound verbs in (21).

---

<sup>11</sup>There may be further constraints which the argument structure of a compound verb is subject to. Observe the following.

- (i) Jon wa sono kamera o sono heya {kara/\*o} mochi-satta.  
 John Top the camera Acc the room Src/Acc have-leave-Past  
 ‘John left the room, taking the camera.’
- (ii) Jon ga sono heya {kara/\*o} mochi-satta kamera.  
 John Nom the room Src/Acc have-leave-Past camera Acc  
 ‘the camera which John left the room with.’

As (i) shows, *mochi-saru* ‘go away with’ can take agent-theme, patient, and source, and the source can be marked with *kara* but not with *o*, even though *saru* as an independent verb allows both markings. This fact cannot be attributed to the surface double-*o* constraint, as shown by (ii). This might suggest that an *o*-marked source in fact count as an object and therefore the deep double *o*-constraint is violated in (i) and (ii), or perhaps that there is some subtler semantic restriction on the argument structure of a predicate to which two types of source markings are sensitive.

(21) a.  $V1<ag(-th), (loc)> + V2<ag-th, loc/go> = V <ag-th, loc/go>$

- b.
- |                    |                  |               |
|--------------------|------------------|---------------|
| <i>kake-agaru</i>  | (run-go.up)      | ‘run up’      |
| <i>kake-oriru</i>  | (run-go.down)    | ‘run down’    |
| <i>hai-noboru</i>  | (crawl-climb)    | ‘crawl up’    |
| <i>kake-mawaru</i> | (run-go.around)  | ‘run around’  |
| <i>tobi-mawaru</i> | (jump-go.around) | ‘jump around’ |

These are manner compounds where V1 represents the manner (e.g., running) in which the motion represented by V2 (e.g., ascending) is executed.<sup>12</sup> Like the above argument-mixing compounds, these compounds have unergative motion verbs as V2. These are apparently right-headed, but they may be argument-mixing, too; since each of the V1 arguments is referentially identical with some V2 argument, mixture of arguments is not visible even if these in fact involve such a mixture.

The same is true of the compounds in (22) below. V1 in these compounds represent a state accompanying the motion represented by V2. These compounds involve non-agentive V1 and agentive V2.

(22) a.  $V1<th/exp> + V2<ag-th, loc> = V<ag-th, loc>$

- b.
- |                       |                   |                            |
|-----------------------|-------------------|----------------------------|
| <i>ukare-aruku</i>    | (make.merry-walk) | ‘walk around merrily’      |
| <i>yopparai-aruku</i> | (get.drunk-walk)  | ‘walk around, being drunk’ |

Argument-mixing compounds are found in other languages. Chinese resultative compounds are examples of this (see, for example, Thompson 1973, Li 1990, Tan 1991). In the compound *xià-wàng* (frighten-forget) ‘frighten (someone) so much that he/she forgets ...’, for example, the first verb subcategorizes for agent and patient-experiencer, and the second, experiencer and theme. The compound as a whole subcategorizes for agent, patient-experiencer, and theme (with the patient-experiencer of *xià* ‘frighten’ and the experiencer of *wàng* ‘forget’ interpreted as representing the same entity).

#### 8.1.4.3 Right-headed Manner Compounds with Transitive V2

There are also manner compounds with a transitive V2. Examples of

<sup>12</sup>Some compounds with *dasu* ‘take out’ as V2 also behave in the same way as these compounds: *hai-dasu* (crawl-go.out) ‘go out, crawling’, *waki-dasu* (spring-go.out) ‘spring out’, etc. In these compounds, the verb *dasu* is apparently used to mean ‘go out’, just like its intransitive counterpart *deru* ‘go out’, with a slight meaning difference (cf. Morita 1985).

various subtypes are given in (23) through (25).

- (23) a.  $V1<ag, pt> + V2<ag, pt-th, go> = V<ag, pt-th, go>$

b. *mochi-ageru* (have-lift) 'hold up in one's hands'  
*kakae-ageru* (hold-lift) 'hold up in one's arms'

- (24) a.  $V1<ag-th, loc> + V2<ag, pt-th, go/loc> = V<ag, pt-th, go/loc>$

b. *nori-ageru* (ride-lift) 'run aground'  
*nori-ireru* (ride-bring.in) 'ride in'

- (25) a.  $V1<ag, pt/etc., (...)> + V2<ag, pt> = V<ag, pt>$

b. *nomi-akasu* (drink-spend) 'drink (the night) away'  
*katari-akasu* (talk-spend) 'spend (all night) talking'  
*nori-kosu* (ride-pass) 'ride past'

These are clearly right-headed. Take the manner compound *katari-akasu* (talk-spend) 'spend (all night) talking' in (25b). The verb *katari* 'talk' takes an agent, a goal, and a theme (which denotes the spoken message), and the verb *akasu* 'spend' takes an agent and a patient (which denotes the time, span, usually the whole night, that is spent doing the activity denoted by V1). The compound verb *katari-akasu* as a whole has two arguments, an agent and a patient (the spent time), just like *akasu* 'spend' and unlike *katari* 'talk', as shown in (26). (26a) shows that the compound can have arguments of *akasu*, while (26b) shows that it cannot have arguments of *katari*. Note also that (26c), in which the arguments of both component verbs occur, is also unacceptable to me, although Kageyama (1993:108) states that such a sentence is acceptable.

- (26) a. *Karera wa yoru o katari-akashi-ta.*  
they Top night Acc talk-spend-Past

'They spent the whole night talking.'

- b. \**Karera wa otagai ni omoide o katari-akashi-ta.*  
they Top each.other Goal memory Acc talk-spend-Past

'They spend (the night) telling their memories to each other.'

- c. \*Karera wa sono yoru o otagai ni  
they Top the night Acc each.other Goal  
omoide o katari-akashi-ta.  
memory Acc talk-spend-Past  
'They spend (the night) telling their memories to each other.'

In all of the above examples, a transitive verb is compounded with another transitive verb, and the agents of the two verbs are referentially identical. There are also, however, unaccusative-transitive manner compounds exhibiting a different pattern, shown in (27). V1 represents the manner of the motion while its causation is expressed by V2. These are clearly right-headed.

- (27) a.  $V1<_{th}> = V2<ag, pt-th, go> = V<ag, pt-th, go>$   
           └──────────┘  
       b. *mai-ageru*   (dance-lift)   ‘whirl (something) up’  
           *tare-sageru* (dangle-hang) ‘hang (something) down’  
           *hane-kaesu* (jump-return) ‘bounce (something) back’

### 8.1.5 Means Compounds

The number of means compounds is very large. The majority have a transitive V2, but there are also some means compounds with an unergative V2. In all cases V1 is also either unergative or transitive, and V1 agent and V2 agent are referentially identical. They are all right-headed in cases where the headedness is unequivocally known.

Means compounds with an unergative V2 are given in (28) and (29).

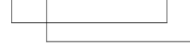
- (28) a. V1<ag, pt-th, go>+V2<ag-th, loc/go/src>=V<ag-th, loc/go/src>
- b. *ii-nogareru* (say-escape) 'evade by speaking'  
*ii-arasou* (say-fight) 'have an argument'
- (29) a. V1<ag, pt, ...> + V2<ag, ?> = V<ag, ?>
- b. *nage-katsu* (throw-win) 'defeat ... by throwing' ('win a pitching game')  
*uchi-katsu* (hit-win) 'defeat ... by hitting' ('win a batting game')

The argument structure of the whole is identical with that of V2, with

unlinked V2 arguments included and unlinked V1 arguments excluded.

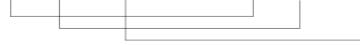
There are a large number of means compounds with a transitive V2. The types shown in (30) and (31) are some of them; these are ambiguous in headedness but can be presumed to be right-headed.

(30) a.  $V1\langle ag, pt \rangle + V2\langle ag, pt \rangle = V\langle ag, pt \rangle$



b.	<i>naguri-korosu</i>	(strike-kill)	'kill by striking'
	<i>oshi-akeru</i>	(push-open)	'push open'
	<i>tataki-kowasu</i>	(hit-destroy)	'destroy by hitting'
	<i>humi-kataeru</i>	(tramp-harden)	'harden by tramping'
	<i>ori-mageru</i>	(fold-bend)	'bend'
	<i>kaki-ageru</i>	(write-complete)	'write up' ('finish by writing')
	<i>nui-ageru</i>	(sew-complete)	'sew up'
	<i>yaki-ageru</i>	(burn-complete)	'roast completely'

(31) a.  $V1\langle ag, pt-th, go/src \rangle + V2\langle ag, pt-th, go/src \rangle$

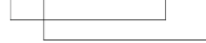


=  $V\langle ag, pt-th, go/src \rangle$

b.	<i>mushiri-toru</i>	(pluck-take)	'pluck off'
	<i>nage-taosu</i>	(throw-topple)	'throw down'
	<i>keri-ageru</i>	(kick-lift)	'kick up (in the air)'
	<i>uchi-ageru</i>	(hit-lift)	'hit up (in the air)'
	<i>sui-ageru</i>	(suck-lift)	'suck up'
	<i>ii-tsutaeru</i>	(say-transmit)	'orally transmit'
	<i>hari-tsukeru</i>	(paste-attach)	'paste on',

Unequivocally right-headed means compounds with a transitive V2 include those in (32) and (33). The argument structure of these compounds is identical with that of V2, with the unlinked V2 argument included.

(32) a.  $V1\langle ag, pt \rangle + V2\langle ag, pt-th, go \rangle = V\langle ag, pt-th, go \rangle$



b. <i>oshi-taosu</i>	(push-topple)	'push down'
<i>tataki-otosu</i>	(knock-drop)	'knock off, knock down'
<i>uchi-otosu</i>	(shoot-drop)	'shoot down'
<i>yaki-tsukeru</i>	(burn-attach)	'attach by burning'
<i>huki-tsukeru</i>	(blow-attach)	'spray'
<i>nui-tsukeru</i>	(sew-attach)	'sew on'
<i>nomi-komu</i>	(drink-put.in)	'swallow', <sup>13</sup>
<i>uchi-komu</i>	(hit-put.in)	'hammer in, shoot ... into'
<i>tsuki-ageru</i>	(thrust-lift)	'thrust up'
<i>tsuki-sasu</i>	(thrust-stick)	'pierce'

(33) a.  $V1<ag, pt> + V2<ag, pt-th, src> = V<ag, pt-th, src>$

b. <i>damashi-toru</i>	(deceive-take)	'take by deceiving'
<i>arai-otosu</i>	(wash-drop)	'wash (dirt) off'

In the compounds in (33b), the V2 source argument, which is referentially identical with V1 patient, bears the grammatical function and case marking demanded by V2 rather than V1.

In the compounds in (34b), the right-headedness is clear because of the exclusion of an unlinked V1 argument from the argument structure of the whole.

(34) a.  $V1<ag, pt-th, go> + V2<ag, pt> = V<ag, pt>$

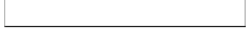
b. <i>ii-makasu</i>	(say-defeat)	'defeat by talking'
<i>ii-kurumeru</i>	(say-wrap)	'explain away'

The first verb *iu* 'say' in *ii-makasu* (say-defeat) 'defeat by talking', for example, takes an agent (speaker), a theme (message), and a goal (addressee), while the second takes an agent (defeater) and a patient (defeated). The agents of these verbs are referentially identical, as are the goal argument of *iu* and the patient argument of *makasu*. Crucially, this compound verb as a whole cannot take the theme of *iu* (message) as one of its arguments. Moreover, the referentially identical defeated-addressee argument bears accusative case and object function, as required by V2.

In the compounds in (35b), the right-headedness is clear both from the inclusion of the unlinked V2 argument and from the exclusion of the

<sup>13</sup>Here I am following Himeno (1978), who claims that *komu* 'put in' in such compounds is a transitive verb, though it also has an intransitive use. This is consistent with a historical fact about this verb: it used to be both intransitive and transitive.



unlinked V1 argument in the argument structure of the whole.

- (35) a.  $V1\langle ag, pt/etc., (...) \rangle = V2\langle ag, pt \rangle = V\langle ag, pt \rangle$   
  
 b. *kui-tsubusu* (eat-waste) 'use up .... by eating'  
*nomi-tsubusu* (drink-waste) 'use up .... by drinking'

The use of *nomi-tsubusu* is exemplified in (36). This compound verb cannot have the patient of V1 (which is distinct from the patient of V2) as one of its argument.

- (36) Kare wa {zaisan o / \*sake o} subete nomi-tsubushi-ta.  
 he Top fortune Acc / sake Acc all drink-waste-Past  
 'He used up (all of his fortune) by drinking (\*sake).'

The following means compounds provide a particularly interesting case of how the argument structure of a compound (and its related properties) reflects that of V2 as its head. In these compounds, V1 can be used in two different syntactic frames, as indicated in (37a) and (37b).

- (37) a.  $V1\langle ag, pt-th, loc \rangle + V2\langle ag, pt-th, loc/src \rangle = V\langle ag, pt-th, loc/src \rangle$   
  
 b.  $V1\langle ag, pt-loc, (th) \rangle + V2\langle ag, pt-th, loc/src \rangle = V\langle ag, pt-th, loc/src \rangle$   
  
 c. *nuri-tsukeru* (smear-attach) 'smear on'  
*huki-toru* (wipe-take) 'wipe off'  
*sori-otosu* (shave-drop) 'shave off'  
*hori-dasu* (dig-take.out) 'dig out'

The verb *nuru* 'smear' in *nuri-tsukeru* 'smear on', for example, is one of the so-called locative alternation verbs, also known as *load/spray* verbs <sup>Δ</sup> the type exemplified in English by the pair *load the cart with hay/load hay onto the cart* (Talmy 1976, Kageyama 1980b, Rappaport & Levin 1985, Fukui, Miyagawa & Tenny 1985, Jackendoff 1990, etc.). However, *tsukeru* 'attach' is not an alternating verb, and the result is that the compound as a whole does not show locative alternation. The case marking and the grammatical function of the arguments of the compounds are identical with those of V2.

### 8.1.6 Other Semantic Relations

There are some compounds which exhibit semantic relationships other than those indicated above. These include the compounds in (38). (There are many speakers who do not use the last three items in the way indicated. See

also Himeno 1978:52.)

(38) a.  $V1<ag, pt/loc, ...> + V2<ag, pt, loc/go> = V<ag, pt, loc/go>$

- b.
- |                    |                               |   |
|--------------------|-------------------------------|---|
| <i>nori-suteru</i> | (ride-abandon)                | 'abandon (something) one rides'               |
| <i>haki-suteru</i> | (wear(on.one's.foot)-abandon) | 'abandon (something) one wears on one's foot' |
| <i>nori-kaeru</i>  | (ride-change)                 | 'change (a vehicle) one rides in'             |
| <i>tatami-komu</i> | (fold-put.in)                 | 'fold and put in'                             |
| <i>marume-komu</i> | (roll-put.in)                 | 'roll and put in'                             |
| <i>kizami-komu</i> | (shred-put.in)                | 'shred and put in (e.g., leek)'               |

The semantic relation involved here is difficult to characterize. V1 might be said to represent some sort of preparation or pre-condition for the process represented by V2.

More interesting are those compounds in (39b), whose pattern is indicated by (39a).

(39) a.  $V1<ag-src, th, go> + V2<ag-go, th, src> = V<ag-go, th, src>$

- b.
- |                     |                 |   |
|---------------------|-----------------|---|
| <i>yuzuri-ukeru</i> | (yield-receive) | 'inherit'                               |
| <i>mooshi-ukeru</i> | (say-receive)   | 'accept the statement of' <sup>14</sup> |

These compounds represent the rare case where the logical subjects of the two component verbs are switched. The verb *yuzuru* 'yield' takes the agent-source of a transfer as its logical subject, and the verb *ukeru* 'receive' takes the agent-goal of the same transaction as its logical subject (the compound as a whole means something like 'X receives Y from Z as Z yields Y to X.'). This compound has an argument structure identical with that of V2, with its arguments bearing the grammatical functions and case marking required by V2.

### 8.1.7 Compounds with Semantically Deverbalized V2

There are also lexical compounds whose argument structure is identical with that of V1. They all have one of a specific set of verbs as their V2. These verbs are all semantically deverbalized or "bleached": they have lost their original verbal meanings and argument structure and have taken on

<sup>14</sup>Note also that these two verbs have corresponding *-watasu* 'give, hand' compounds (i.e., *yuzuri-watasu* 'give away', *mooshi-watasu* 'tell, sentence').

adverbial meanings.<sup>15</sup> Such “left-headed compounds” include those in (40).

(40) Left-headed compounds

V2	examples of compound verbs	
<i>tsukeru</i>	‘hard, harshly’ (< ‘attach’)	
<i>shikari-tsukeru</i>	(scold-)	‘scold harshly’
<i>nage-tsukeru</i>	(throw-)	‘throw hard’
<i>humi-tsukeru</i>	(stamp-)	‘stamp on hard’
<i>nirami-tsukeru</i>	(stare-)	‘glare at’
<i>tsuku</i>	‘after some effort’ (< ‘be attached’)	
<i>omoi-tsuku</i>	(think-)	‘think of, hit upon’
<i>kangae-tsuku</i>	(think-)	‘think of, hit upon’
<i>kaesu</i>	‘back to the original state’ (< ‘return’)	
<i>hiki-kaesu</i>	(draw.back-)	‘retreat’
<i>tori-kaesu</i>	(take-)	‘regain’
<i>tateru</i>	‘actively’ (< ‘stand (transitive)’)	
<i>donari-tateru</i>	(yell-)	‘yell violently’
<i>seme-tateru</i>	(attack-)	‘attack violently’
<i>hateru</i>	‘completely’ (< ‘come to an end’)	
<i>tsukare-hateru</i>	(get.tired-)	‘get exhausted’
<i>nayami-hateru</i>	(agonize-)	‘agonize to death’
<i>komu</i>	‘to a great extent, enough’ (< ‘go in’)	
<i>damari-komu</i>	(be.silent-)	‘become utterly silent’
<i>huke-komu</i>	(get.old-)	‘become very old’
<i>ageru</i>	‘loudly and clearly’ (< ‘lift’)	
<i>yomi-ageru</i>	(read-)	‘read out’
<i>utai-ageru</i>	(sing-)	‘sing beautifully’
<i>wataru</i>	‘with a far-reaching effect’ (< ‘cross’)	
<i>hare-wataru</i>	(clear.up-)	‘clear up all over the sky’
<i>hibiki-wataru</i>	(resound-)	‘reverberate’

The use of *shikari-tsukeru* in (40) is exemplified in (41).

- (41) Jon wa    Biru o    oogoe de    kibishiku shikari-tsuke-ta  
 John Top Bill Acc loud.voice Inst severely scold-harshly-Past  
 ‘John scolded Bill severely in a loud voice.’

<sup>15</sup>Note that these verbs are not grammatically deverbalized, however: they have grammatical properties of verbs, such as inflection.

These compounds are superficially similar to the functionally monoclausal Type II syntactic compounds discussed in the preceding chapter. Two crucial differences between the two involve the patterns of adverbial modification of V1, and verbal anaphora. Type II syntactic compounds restrict the range of adjuncts modifying V1 (sec. 7.2.4), while left-headed lexical compounds do not (cf. adjuncts in (41)). Also, the *soo suru* replacement of V1 and its arguments is only partially unacceptable with Type II syntactic compounds, whereas it is totally impossible with left-headed lexical compounds (see below).

All of the V2 verbs in (40) can have the meanings indicated in (40) only when used as V2 in compound verbs. This restriction to the use in compounds, however, is not a sufficient characterization of the verbs that creates the left-headed compounds (see Moriyama 1988, Michiaki Saito 1984). There are some verbs which can only be used as V2 of compound verbs, but which can still function as the head of the left-headed compounds. The verb *iru* ‘enter’, for example, is used only as V2 in compounds, but it can still head left-headed compounds (see (12) above). The verb *komu* ‘enter’ is also used only as V2 in compounds, but it can head a left-headed compound when used in the meanings of ‘enter’ or ‘put in’, as shown in (12b) and (31b) above, though it creates left-headed compounds when used in the meaning of ‘to a greater degree’ as in (40) (see Himeno 1978).<sup>16</sup> These observations suggest that the crucial property of V2 in left-headed compounds is not the restriction to the use in compounds but the “bleaching” of verbal meanings.<sup>17</sup>

### 8.1.8 Compounds with Semantically Deverbalized V1

Finally, there are compounds in which V1 has lost its verbal meaning. These include compounds with *sas(-u)* as V1, which normally means ‘thrust’ but is used here to indicate some sort of urgency or forcefulness involved in the process described by V2: *sashi-semaru* (*sasu*-come.close) ‘become near at hand, become urgent’, *sashi-osaeru* (*sasu*-hold) ‘seize’.

<sup>16</sup>Note that the compound *hashiri-komu* (run-enter) is ambiguous in this regard. In the meaning of ‘run enough’ its argument structure is identical with that of V1 (i.e., with no goal), while in the meaning of ‘run into’, its argument structure is identical with V2.

<sup>17</sup>I will not explore here the nature of such semantic changes involved in semantically deverbalized V2. These changes, as well as some semantic changes undergone by V2 in syntactic compounds, might be discussed in relation to the notion of semantic bleaching in the grammaticalization literature (e.g., Heine, Claudi & Hünemeyer 1991). See Matsumoto to appear for the case of *kakeru* ‘be about to’.

*sashi-tomeru* (*sasu-stop*) ‘suspend’. These compounds are right-headed.

## 8.2 Functional and Argument Structure of Lexical Compounds

It is natural to expect that a lexical compound should have a complex semantic structure in which the semantic structures of the two component verbs are combined. For example, the compound verb *oshi-akeru* (push-open) ‘push open’ presumably has a semantic structure which can be roughly paraphrased in English as ‘open by pushing’, thus embedding the semantic structure of one verb in that of the other. One question that might arise is whether such compounds similarly involve complex functional and argument structures. In this section, I will argue that they do not: lexical compounds have a simplex functional and argument structure.

The above discussion of patterns in lexical compounding provide evidence for the simplicity of functional and argument structure. One kind of evidence for the monoclausality of functional and argument structure comes from cases where the two component verbs differ in their argument structures. As seen in (6), the transitive-unaccusative cause compound *uchi-agaru* (hit-go.up) ‘be hit high up (in the air)’ takes the same arguments as *agaru* does: the theme and goal of *agaru* can be expressed but the agent of *utsu* cannot, not even as an adjunct phrase (the patient of *utsu* is referentially identical with the theme of *agaru*). This inexpressibility of the unlinked arguments of one component verb is one kind of evidence for functional-structure and argument-structure monoclausality, since a biclausal structure would normally allow all of the arguments of the component verbs to be syntactically realized.

Other tests for functional complexity also support functional monoclausality of lexical compounds. First, passivization of the whole compound can affect the mapping possibilities of the arguments of V1. This is true not only of transitive-transitive compounds like *oshi-akeru* ‘push open’, in which the passive subject is an argument of V1 as well as V2 (V1 patient is referentially identical with V2 patient), but also of left-headed *shikari-tsukeru* ‘scold harshly’ (cf. (40)) and argument-mixing *tsure-saru* ‘take away’ (cf. (13)), in which the passive subject (patient) is an argument of V1 but not of V2. This is shown in (42).

- (42) a. Doa ga oshi-ake-rare-ta.  
door Nom push-open-Pass-Past  
‘The door was pushed open.’  
b. Sono kodomo wa kare ni shikari-tsuke-rare-ta.  
the child Top he by scold-harshly-Pass-Past  
‘The child was scolded harshly by him.’

- c. Sono kodomo wa dareka ni tsure-sar-are-ta.  
 the child Top someone by take-leave-Pass-Past  
 'The child was taken away (kidnapped) by someone.'

Second, adjunct modification of a non-head component verb is restricted. (43) shows that *omoikkiri* 'with all one's might' cannot be used to modify the meaning of *utsu* in the compound *uchi-agaru*.

- (43) Sono booru wa soratakaku (\*omoikkiri) uchi-agat-ta.  
 the ball Top sky high with.all.one's.might hit-go.up-Past  
 'The ball was hit high up in the sky (with all his/her might).'

Third, lexical compounds do not allow *soo suru* 'do so' to replace V1 and its arguments, as shown in (44) (Kageyama 1989). Unlike syntactic compound verbs with a biclausal argument structure, (44) is completely unacceptable.<sup>18</sup>

- (44) \*Bill wa doa o oshi-ake-ta. Jon mo soo shi-ake-ta  
 Bill Top door Acc push-open-Past John too so do-open-Past  
 'Bill opened the door by pushing it. John opened it by doing so, too.'  
 (intended)

The simplicity of the argument structure of lexical compounds is supported by the observation that a lexical compound can only have one logical subject, that of the head verb. In lexical compounds, the logical subject of a non-head verb does not function as logical subject (unless it shares its referent with the logical subject of the head verb). This is most clear in *uchi-agaru* (hit-go.up) 'be hit high up'. As pointed out above, here the agent of *utsu* 'hit, shoot' is suppressed, and cannot be expressed even as an adjunct (as in passives). This suppressed agent of the first component verb does not function as a logical subject. For example, it cannot control the subject of a purpose clause: (45a) cannot have the reading in which the

<sup>18</sup>Lexical compounds permit honorific marking (with *o-V ni naru*) to appear on the whole compound verb, but not on V1 alone, as shown in (i) and (ii). See also Kageyama 1993 in this regard.

- (i) Sensei ga hanabi o {o-uchi-age ni natta /  
 teacher Nom fireworks Acc H-shoot-lift Cop became  
 \*o-uchi ni nari-age-ta}.  
 H-shoot Cop become-lift-Past  
 'The teacher shot up the fireworks.'

purpose clause is interpreted with its subject controlled by the logical subject of *utsu*. Note that this reading is available in the analogous sentence (45b), in which the transitive *uchi-ageru* (hit-lift) ‘hit up in the air’ is passivized.

- (45) a. \*Sono booru wa [PRO minna o odorokasu tame ni]  
           the ball Top all Acc surprise Pur  
           takaku uchi-agat-ta.  
           high hit-go.up-Past
- b. Sono booru wa [PRO minna o odorokasu tame ni]  
           the ball Top all Acc surprise Pur  
           takaku uchi-age-rare-ta.  
           high hit-lift-Pass-Past  
           ‘The ball was hit high up in the air so as to surprise everyone.’

Thus, the logical subject of *utsu* is not part of the argument structure of the compound *uchi-agaru*. The same point can be made for V1 of compounds such as *yuzuri-ukeru* (yield-receive) ‘inherit, take over’, and *mooshi-ukeru* (say-receive) ‘accept the statement of’ (cf. (39)).

The suppressed V1 agent in such compounds, though absent in a-structure, does appear to be present in the semantic structure of the compound. In this respect, consider the two near-synonymous intransitive compound verbs *yake-agaru* and *yaki-agaru* ‘be roasted (burnt) completely’. The first one is the compound of an intransitive verb *yake(-ru)* ‘burn, roast’ and intransitive *agaru* ‘be completed’ (cf. (3)), and the second, of a transitive verb *yak(-u)* ‘burn, roast’ and the same intransitive *agaru* ‘be completed’ (cf. (5)). In both cases, the agent (burner, roaster) is not present in a-structure, as can be shown by its inability to control the subject of a purpose clause. The difference is in the semantic structure; the verb *yaki-agaru* implies the existence of an agent, while *yake-agaru* does not. For this reason the former cannot be used if the process of burning is not initiated by an intentional agent. Thus, (46a) has a weird (but perfectly grammatical) reading in which someone intentionally cooked a newt; it is not acceptable if the newt by mistake wandered into an oven and was roasted. Note that (46b) is acceptable in both circumstances.

- (46) a. Imori ga kongari yaki-agat-ta.  
           newt Nom well burn-be.completed-Past  
           ‘A newt got completely roasted (intentionally).’
- b. Imori ga kongari yake-agat-ta.  
           newt Nom well burn-be.completed-Past  
           ‘A newt got completely roasted.’

This semantic evidence suggests that a suppressed agent of V1 is indeed present in the compound's semantic structure. Its status is similar to that of the agent in English middle verbs (Roeper 1987), which is claimed to be an "implicit agent" present only in (Roeper's) "lexical semantic structure".

### 8.3 The Issue of Headedness

In 8.1.1 I pointed out that lexical compounds are often said to inherit the argument structure of their head. Japanese morphology is generally right-headed, and it is natural to expect a V-V compound to inherit the argument structure of V2. Yet we have seen two types of compounds that do not simply inherit the argument structure of the right-most item: left-headed compounds and argument-mixing compounds.

How can the inheritance view of argument structure and the general right-headedness of Japanese morphology be reconciled with the existence of these two types of lexical compounds? The problem of exceptions to the allegedly unmarked right-headedness in morphology has been an issue of controversy. The head of a morphologically complex word has been sometimes defined universally as the rightmost element of the word (The Right-hand Head Rule) (e.g., Williams 1981a). Jaeggli (1980), however, points out that the French diminutive affix can be suffixed to nouns, adjectives, and verbs without changing their grammatical categories. In this case it is the left-hand element that determines the grammatical category of the derived word.

One proposed solution in such cases is to relativize the notion of headedness to each particular feature and thereby preserve the Right-hand Head Rule (Di Sciullo & Williams 1987; cf. Selkirk 1982). Di Sciullo & Williams state the revised Right-hand Head Rule as follows.

- (47) The head<sub>F</sub> (head with respect to the feature F) of a word is the rightmost element of the word marked for the feature F.

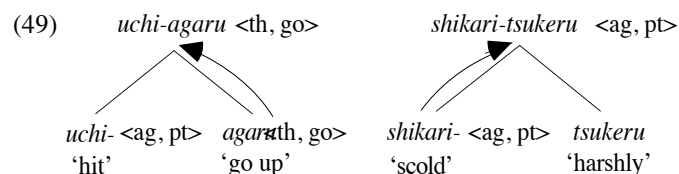
In this view, the French diminutive affix does not bear any features relating to grammatical categories; hence the stem, to which the affix is suffixed, is the rightmost element marked for a grammatical category, and it therefore counts as the head as far as a grammatical category is concerned. Nonetheless, there is still some evidence to show that this rule is not universal. Lieber (1980) and Selkirk (1982) have pointed out that the left-headed type predominates in Vietnamese V-V compounds, which do not conform to (47) above.

In 8.1.7 above, I pointed out that left-headed compounds involve a V2

that does not have a “verbal” character semantically but is more like an adverb in meaning. Verbs that do not have a “verbal” character might be characterized as those which lack an identifiable argument structure (cf. Yamamoto 1984). For example, *tsukeru* ‘harshly’ in *shikari-tsukeru* ‘scold harshly’ does not have any identifiable argument structure of its own. If this is the case, then, one might draw on this idea to account for the mechanism for determining argument structure for both right- and left-headed compounds in reference to the relativized Right-hand Head Rule. Thus, (48) holds of both right- and left-headed compounds.

- (48) A lexical compound inherits the argument structure of the rightmost component verb that has an argument structure.

In this analysis, left-headed compounds have V1 as the rightmost component verb that possesses an argument structure, and therefore the argument structure of V1 is what is inherited by the compound. In this view, the mechanism of argument-structure inheritance can be schematically described as in (48), using as examples *uchi-agaru* ‘be hit up (in the air)’ and *shikari-tsukeru* ‘scold harshly’.



This view, however, has inherent limitations. First, it cannot explain how the argument structure of argument-mixing compounds is to be determined. One might attempt to salvage this view by saying that a compound can inherit from V1 any role that V2 lacks (i.e., does not have a specification for). For example, the verb *kaeru* ‘return, go back’ lacks a patient argument, and therefore the compound *mochi-kaeru* (have-return) ‘bring back home’ can inherit a patient argument from V1. In fact, this is essentially what Kageyama (1993) proposes. However, such an approach cannot explain why this happens only when V2 is an unergative motion verb. That is, it cannot explain why verbs like *uchi-agaru* ‘be hit high up (in the air)’ in (6) cannot inherit an agent argument from V1, or why *ii-nogareru* (say-escape) ‘evade by talking’ in (28) and *nage-katsu* (throw-win) ‘defeat ... by pitching’ in (29) cannot inherit a patient argument from V1.

Second, if inheritance involves only the copying of thematic role names from the head verb, it will not be able to give an account of phenomena in right-headed compounds that require a more semantic analysis. One such

phenomenon concerns the semantic entity that a given argument represents. In a full account of compounds, one must ensure that a given role of the compound represents the identical semantic entity that the same role of the head verb refers to. That is, the goal argument of a right-headed compound verb, for example, must represent the same entity as the goal argument of V2. This problem manifests itself when V1 and V2 have an identical role (e.g., goal) only one of which is reflected in the argument structure of the whole compound. Consider, for example, a compound like *nomi-tsubusu* (drink-use.up) ‘waste by drinking’ in (35) above. Both of the component verbs of this compound take a patient argument, which represents a different semantic entity (i.e., a drunk thing and a wasted thing; see (36) above). This compound as a whole takes a patient argument also, but it must represent the wasted thing rather than the drunk thing.

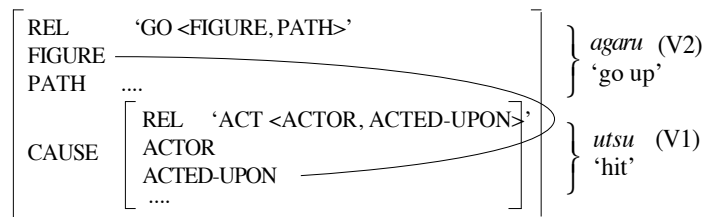
This means that compounds do not simply copy a list of role names from the argument structure of the head. Rather, a reference must be made to semantic structure, so that the semantic entities associated with the arguments of the head verb can be properly associated with the corresponding arguments of the whole compound. In the next section I will propose that the headedness of lexical compounds be treated in semantic structure.

## 8.4 The Semantic Structure of Lexical Compounds

Lexical compounds in Japanese involve the embedding of one semantic structure in another. All lexical compound verbs have a complex semantic structure that involves a main semantic structure and subordinating structures representing manner, means, cause, etc.

In the proposed semantic structure, cause compounds like *uchi-agaru* ‘be hit high up (in the air)’ can be represented as in (50). (See 2.1.1 for the nature of semantic structure representation adopted in this book.)

(50) cause compounds



In this structure the semantic structure of the non-head V1 *utsu* ‘hit’ is embedded in the semantic structure of the head V2 *agaru* ‘go up’ as its

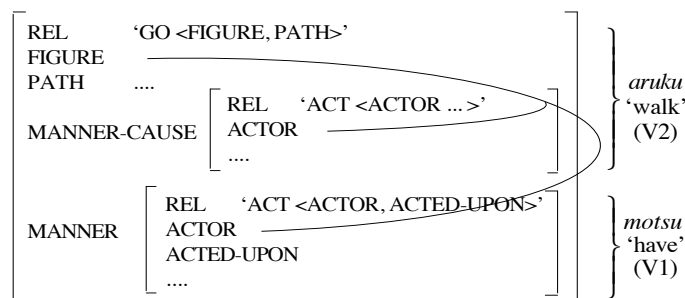
CAUSE adjunct. Note that the actor argument of V1 appears in this semantic structure, which is consistent with the observation made in sec. 8.2 concerning the presence of the suppressed logical subject of *yak(-u)* ‘burn’ in the semantic structure of the transitive-intransitive cause compound *yaki-agaru* ‘be roasted completely’.

I will not discuss how PATH should be represented here; see Chapter 10. Nor will I be concerned with how the details of the meaning of *utsu* ‘hit’ should be represented. All that is needed for the present purpose is that hitting is an action in which an actor acts on another object in a certain manner.

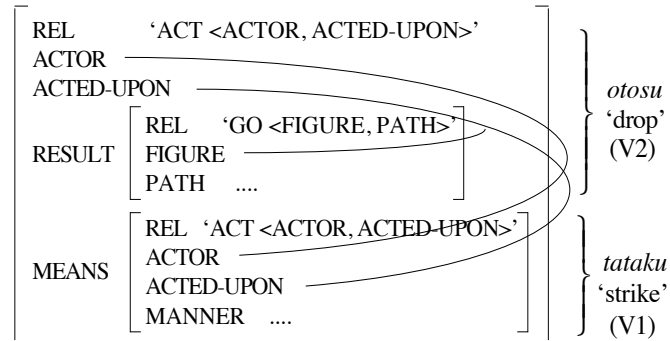
The line association in (50) indicates semantic linking, which is an association of arguments at the level of semantic structure. In this case, the FIGURE argument of the upper predicate GO is linked to the ACTED-UPON argument of ACT in the CAUSE substructure. This semantic linking must be carefully distinguished from argument fusion at the level of argument structure (Alsina 1992, Alsina & Joshi 1991). Given that the compound verbs which we are concerned with have a monoclausal argument structure, and given that the arguments of a non-head are not represented in the argument structure of right- or left-headed compounds, the arguments of two component verbs cannot be associated at a-structure.

The semantic structure of manner compounds, means compounds, and left-headed compounds can be represented as in (51). (51a) is the semantic structure of *mochi-aruku* (have-walk) ‘walk having, carry’ (which is an argument-mixing compound); (51b), of *tataki-otosu* (strike-drop) ‘strike down’, and (51c); of *shikari-tsukeru* (scold-harshly) ‘scold harshly’.

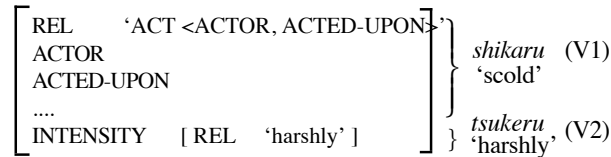
(51) a. manner compounds



## b. means compounds



## c. left-headed compounds



In (51a), the semantic structure of V1 (*motsu*) is embedded as the MANNER adjunct of the semantic structure of V2. (MANNER-CAUSE represents the manner in which a motion is caused <sup>4</sup> in this case, the action of moving the legs typical of walking, which causes the figure to move.) In (51b), the semantic structure of V1 (*tatau*) is embedded as the MEANS adjunct of the semantic structure of V2. In (51c), the structure for semantically deverbalized V2, the semantic structure of V2 (*tsukeru*) is embedded as the INTENSITY adjunct of the matrix semantic structure of V1. Compounds with a semantically deverbalized V1 have a semantic structure similar to (51c), except that it is V2 that provides the matrix semantic structure and V1, the adverbial element. Pair compounds have a similar semantic structure.

Semantically, the head verb of a compound can be defined as that component verb which provides the matrix semantic structure. It is the rightmost item having a verbal meaning. Note that argument-mixing compounds like *mochi-aruku* in (51a) take V2 as their semantic head.

Given that semantic structure is the only structural level in which a complex structure is recognized in lexical compounds, lexical compounding can be regarded as an operation on this structure: lexical compounding embeds the semantic structure of the non-head into that of the head. (See Lieber 1992, Booij 1992, and Spencer 1991:342 for a treatment of morphological processes as an operation on semantic structure.)

In the present account, the argument structure of right-headed, left-headed, and argument-mixing compounds can be determined on the basis of the patterns of mapping between their semantic structure and argument structure. The following generalizations can be made: 1) semantic participants in the matrix semantic structure (provided by the head) can be realized as arguments; 2) semantic participants in the MANNER adjunct of the unergative motion predicate can also be realized as arguments; 3) the elements in the RESULT adjunct of an agentive predicate can also be realized as arguments, as is the case with the elements of the PATH substructure onto Goal, Source, and other arguments (cf. (51b)). The following condition, formulated as a condition on syntactically “visible” semantic participants, captures the observed regularities:

- (52) Semantic participants can be mapped onto arguments in the argument structure only if they appear 1) in the matrix semantic structure, or 2) in the MANNER adjunct of GO whose FIGURE also bears the role of ACTOR, or 3) in the RESULT adjunct of ACT.

This generalization appears to hold of the semantic structure and argument structure of English verbs. Consider the sentences in (53).

- (53) a. The candle blew out. (Talmy 1985)  
b. She wore a green dress to the party. (Talmy 1985)

Sentence (53a) has a semantic structure similar to that of the transitive-unaccusative cause compounds given in (50): the verb *blow* in this sentence means something like ‘go out because of someone’s blowing’. The agent of blowing does not appear in the argument structure of this verb. Sentence (53b) has a semantic structure similar to that of the transitive-unergative manner compounds in (51a): the verb *wear* here means something like ‘go, wearing’. In this sentence the agentive motion in the main semantic structure allows an argument (*a green dress*) in its manner substructure to also be a part of the argument structure of the verb.

The generalization (52) awaits further examination. In the next chapter I will point out a phenomenon involving complex motion predicates which is consistent with this generalization.

## 8.5 Semantic Constraints on Lexical Compounds

### 8.5.1 Alleged Constraints on Argument Structure Harmony

As mentioned briefly above (sec. 8.1.1), Kageyama (1993) has recently argued that lexical compounds exhibit certain restrictions in the compatibility of the two component verbs in terms of their argument

structure: unaccusative verbs, he claims, cannot be compounded with unergative or transitive verbs. The patterns of lexical compounding described in 8.1 above show that this statement is not accurate. There exist 1) manner compounds with an unaccusative V1 and an unergative V2 (e.g., *yopparai-aruku* ‘walk, being drunk’ in (22); 2) manner compounds with an unaccusative V1 and a transitive V2 (e.g., *mai-ageru* ‘whirl up’ in (27)); and 3) cause compounds with a transitive or unergative V1 and an unaccusative V2 (e.g., *yaki-agaru* ‘be burnt completely’ in (5), *uchi-agaru* ‘be hit high up (in the air)’ in (6), and *hashiri-tsukareru* ‘get tired from running in (8)).

Kageyama is in fact aware of cases like transitive-unaccusative compounds like *yaki-agaru* in (5) and *uchi-agaru* in (6), and claims that they are the result of the intransitivization of transitive-transitive compounds like *yaki-ageru* in (30) and *uchi-ageru* in (31) and (32). Some pairs of such transitive-unaccusative and transitive-transitive compounds are given in (54).<sup>19</sup>

(54) a. transitive-unaccusative		b. transitive-transitive	
<i>uchi-agaru</i>	‘be hit up in the air’	<i>uchi-ageru</i>	‘hit up in the air’
<i>tsuki-sasaru</i>	‘pierce’	<i>tsuki-sasu</i>	‘pierce’
<i>tsuri-sagaru</i>	‘be hung down’	<i>tsuri-sageru</i>	‘hung down’
<i>ori-magaru</i>	‘be bent’	<i>ori-mageru</i>	‘bend’
<i>ii-tsutawaru</i>	‘be orally transmitted’	<i>ii-tsutaeru</i>	‘orally transmit’
<i>hari-tsuku</i>	‘be pasted’	<i>hari-tsukeru</i>	‘paste’
<i>tori-sorou</i>	‘be fully gathered’	<i>tori-soroeru</i>	‘gather fully’
<i>ire-kawaru</i>	‘be substituted’	<i>ire-kaeru</i>	‘exchange’
<i>tsukuri-agaru</i>	‘be made up’	<i>tsukuri-ageru</i>	‘make up’

<sup>19</sup>If this is a correct analysis of these transitive-unaccusative compounds, such intransitivization in many cases will involve back-formation, since most of the intransitive verbs used as V2 above are actually the morphological sources of their transitive counterparts (see Sakuma 1936, Inoue 1976a, Teramura 1984a, Hayatsu 1989). This is true of compounds with *ukabu* ‘float’, *tsuku* ‘be attached’, and *sorou* ‘be gathered’ above. Also, note that this analysis would involve the rule ordering of compounding before intransitivization. This ordering would be rather peculiar in light of the theory of Lexical Morphology (e.g., Kiparsky 1982). Lexical Morphology assumes that there are three levels of morphological operations. Non-productive morphological operations such as irregular past-tense formation in English and the above intransitivization process in Japanese are level 1 processes, while compounding and productive derivational processes are level 2. Thus, intransitivization should be expected to precede compounding.

*omoi-ukabu* ‘be called up to mind’ *omoi-ukaberu* ‘call up to mind’

A similar account is possible with the unaccusative-transitive compounds like *mai-ageru* ‘whirl up’ in (27), which might have been derived by transitivity of the corresponding unaccusative-unaccusative compounds like *mai-agaru* ‘soar up’ in (9).

One major problem with Kageyama’s view of argument structure harmony comes from the existence of transitive-unaccusative and unergative-unaccusative cause compounds like *nomi-tsubureru* ‘collapse from drinking, pass out cold’ and *hashiri-tsukareru* ‘get tired from running’ in (8) above. These compounds have no transitive-transitive or unergative-transitive counterparts from which they might have derived, and they therefore appear to be genuine cases of unaccusative verbs compounded with transitive or unergative verbs.<sup>20</sup> Unaccusative-unergative manner compounds also pose a problem. It is true, however, there are no means compounds that violate Kageyama’s generalization. In 8.5.2.2 below, I will propose that such patterns of combinability of two component verbs in each semantic type can be explained by constraints on the well-formed semantic structure of a predicate.

### 8.5.2 Semantic Linking and Constraints on Semantic Structure

In 8.1 I mentioned the differing patterns of referential identity which the arguments of two component verbs may have; these are to be understood in terms of semantic linking at s-structure. In the preceding section I also discussed patterns of combinability of the two component verbs. In this section I will argue that such restrictions on patterns of semantic linking and combination of component verbs are reflections of general well-formedness constraints on the semantic structure of a predicate that has a simplex argument structure.

#### 8.5.2.1 The Shared Participant Condition

There is one general condition that holds of all Japanese compound verbs with respect to semantic linking, and it is stated in (55).

(55) The Shared Participant Condition: each of the component verbs

<sup>20</sup>Some of the compounds in (8) do have a seemingly corresponding transitive-transitive or unergative-transitive counterpart. The verb *nomi-tsubureru* ‘pass out cold’, for example, has a transitive counterpart *nomi-tsubusu* ‘use up by drinking’ (cf. (35)). However, the former cannot have been derived from the latter, given the semantics of these two items.

forming a compound must have at least one argument which is semantically linked to an argument of the other component verb.

This condition is observed in all compounds that I have examined in which V1 and V2 are not deverbalized semantically.<sup>21</sup>

This condition might be seen as a possible general condition on the semantic structure of a predicate: subordinate semantic structures (e.g., MANNER, MEANS, CAUSE, etc.) must contain at least one argument that is semantically linked to an argument of the predicate (RELation) in the immediately dominating semantic structure.

Note that this condition does not have to be satisfied when the superordinate and subordinate semantic structures are realized in two independent predicates, as in (56).

- (56) Jon wa [Biru ga wairo o Ken ni watashita]  
 John Top Bill Nom bribe Acc Ken Datgave  
 koto ni yotte sono shigoto o e-ta.  
 Comp by the job Acc get-Past  
 'John got the job by Bill giving a bribe to Ken.'

The Shared Participant Condition is thus a condition on semantic structures that map onto a simplex argument structure.

This condition restricts the possible meanings of Japanese compounds. For example, the condition requires that in the semantic structure of *uchi-agaru* 'be hit up (in the air)' the entity that goes up must be something that is hit or shot; otherwise the condition is not satisfied. This is in fact the case: this compound could not be used if, for example, shooting at a tree resulted in some birds flying up.

It would be worthwhile to consider if this condition is a universal condition on compounding. In this respect, compounds that violate the condition do seem to exist in some languages. Chinese resultative compounds, for example, can have two component verbs that have no

<sup>21</sup>Counterexamples that have recently come to my attention are *ne-midareru* (sleep-get.disorderly) 'get disorderly because of sleeping' and *naki-nureru* (weep-get.wet) 'get wet because of weeping'. These compound verbs can take the hair of the person who has slept and the cheek of someone who has wept as their subject, respectively, violating the Shared Participant Condition. Such exceptions can perhaps be treated by introducing the notion of frame (Fillmore 1982b): two component verbs must share at least one entity which appears in both of the frames of the verbs. Note that one's hair and cheek might be a part of the frame of sleeping and weeping, respectively. One might be able to explain the case of (57) below in a similar way.

shared argument (Tan 1991:100). (57) is an example.<sup>22</sup>

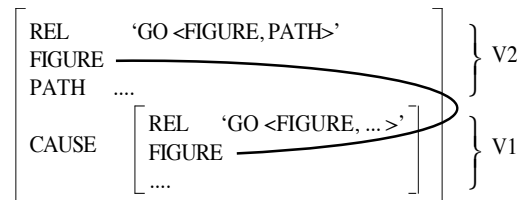
- (57) tā mǎi le qiánbǎo  
 he buy-be.empty Asp wallet  
 'He bought so much that his wallet got empty.'

It might be the case that Chinese resultative compounds are not lexical compounds (i.e., they might involve a complex argument structure); if so the Shared Participant Condition might then be a universal condition on the lexical compound verbs and other verbs which are simplex at argument structure.

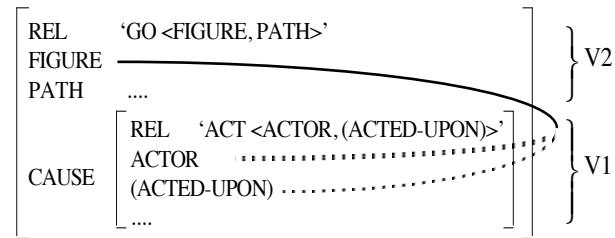
#### 8.5.2.2 Constraints on a Complex Semantic Structure

Further regularities in the patterns of semantic linking between arguments of V1 and V2 in each particular semantic type of lexical compound have been pointed out in 8.1. The pattern in cause compounds (sec. 8.1.3) can be summarized and rephrased in semantic terms as follows: V2 figure (theme) must be linked to V1 figure (theme), if V1 is a non-agentive verb, or to V1 actor (agent) or acted-upon (patient) (if present), if it is agentive. This semantic linking can be described as in (58a) and (58b). The heavy solid line indicates obligatory semantic linking; the heavy dotted line represents alternative linking. (The PATH of 'GO' can be a spatial path or a non-spatial path (as when a change of state is represented).)

(58) a. cause compounds with unaccusative V1



b. cause compounds with unergative/transitive V1



<sup>22</sup>In (57) it is not possible to express V1 patient (see Tan 1991). This shows that the arguments of V1 are not always preserved in Chinese resultative compounds, unlike what Li (1990) claims.

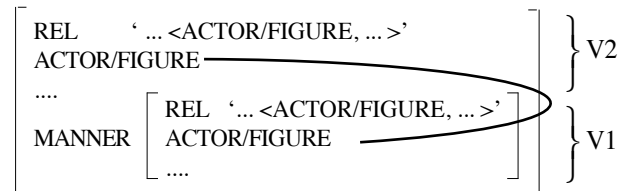
These patterns are understood to represent possibilities of semantic linking involving the CAUSE substructure of the semantic structure of a predicate.

As pointed out in 8.1.3, all cause compounds have an unaccusative V2. This means that the matrix semantic structure for a cause compound cannot involve an ACTOR. One can envision the possibility of having cause compounds with an agentive V2, but in fact there are no such cases (e.g., \**odoroki-hashiru* (be.surprised-run) ‘run because of being surprised’). This can be attributed to the Determinative Causation Condition on lexical predicates proposed in relation to lexical causatives in 6.6 (see (57) in Chapter 6). This condition states that in a lexical causative, the causing event must be the sole factor that determines the course of the caused event. However, if the caused event is an agentive action, then the causing event cannot be the sole factor that determines the course of the caused event, since its effect would necessarily be mediated by the psychology of the agent.

Next, consider manner compounds in which V1 represents the manner in which the process denoted by V2 occurs. All manner compounds except those in (27) are of this type. In all such cases, the logical subject of V1 and that of V2 are linked, and these two logical subjects must either be both agentive or both non-agentive in most cases. Some examples are seen, however, in which a non-agentive V1 and an agentive V2 are compounded. On the other hand, there is no example of an agentive V1 compounded with a non-agentive V2 (e.g., \**sakebi-ochiru* (shout-fall)), although such compounds are conceptually conceivable. There does not seem to be any simplex verb in English and Japanese in which an agentive manner adjunct is conflated with a non-agentive process, suggesting that this is a general semantic condition.

The pattern of semantic linking in manner compounds reflects a constraint on the complex semantic structure of a predicate involving MANNER. The schematic semantic structure of manner compounds is represented in (59).

(59) manner compounds

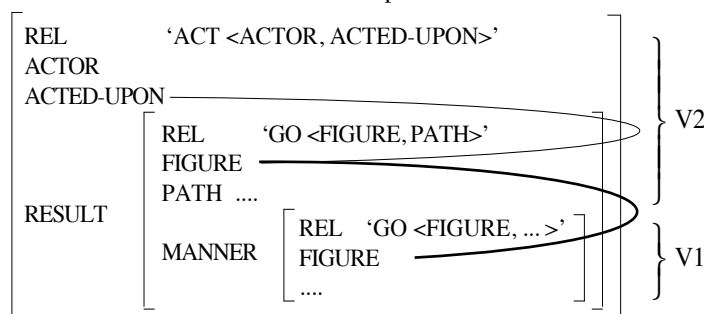


The most salient argument of the predicate of MANNER (i.e., ACTOR of

‘ACT’ or FIGURE of ‘GO’) is semantically linked with that of the immediately dominating semantic structure. (“ACTOR/FIGURE” in (59) indicates alternating possibilities.)

(60) below describes the semantic structure of the unaccusative-transitive manner compounds in (27), in which V1 represents the manner of motion, and V2, its causation (e.g., *mai-ageru* (dance-lift) ‘whirl up’). The semantic structure of V1 is embedded in the RESULT substructure of V2; the semantic linking involved is indicated by the heavy solid line. (The thin solid line represents an obligatory linking in lexical causative verbs involving RESULT.)

(60) unaccusative-transitive manner compounds

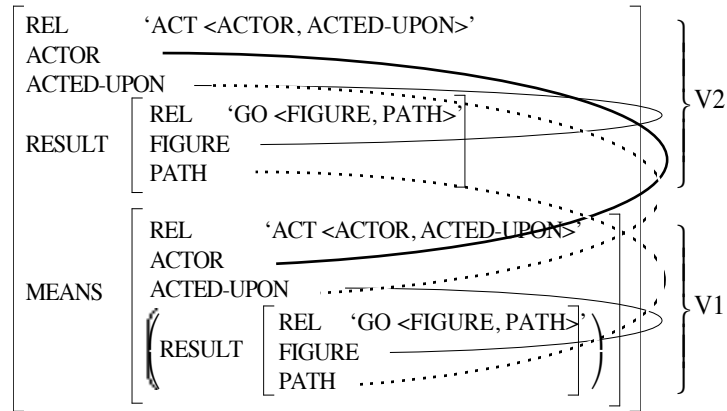


Given this semantic structure, this kind of compound is no longer exceptional: the linking involved is essentially the same as that described in (59).

I turn next to means compounds, in which V1 represents the means by which the process denoted by V2 is performed. As pointed out above (sec. 8.1.5), all means compounds have agentive V1 and V2, and the two actors (agents) must be linked to each other. Other, non-obligatory linkages may also occur. V1 acted-upon (patient) argument is very often (but not always) linked to V2 acted-upon (e.g., (30), (31), and (32); cf. (33), (34), and (35)). V1 source and goal are often linked to V2 source and goal, respectively, if present (e.g., (31)). There are also, much less typically, cases of V1 acted-upon linked to V2 source (see (33)), and V1 goal linked to V2 acted-upon (see (34)). Other linking possibilities are unattested.

These patterns can be seen as reflecting constraints on the complex semantic structure of a predicate involving a MEANS substructure. The schematic semantic structure of means compounds and the obligatory and typical semantic linkages found in such structures can be described in (61). The heavy solid line represents relevant obligatory linkage. The dotted lines represent some of the non-obligatory but typical linkages.

## (61) means compounds



The semantics of MEANS requires both the superordinate and the MEANS structure to represent an ACTION; it also requires the superordinate structure to have a RESULT substructure. The ACTOR in the MEANS substructure must be linked to the “matrix” ACTORas required by a general condition on the MEANS structure (see also Pinker 1989:198-200).

The above non-obligatory linking patterns concerning the source, acted-upon, and goal of V1 and V2 might be explained by appealing to the notion of conceptually possible causal events in the semantic structure involving means. Typical non-obligatory linkages described above can be schematically represented in (62a). Less typical linkages are represented in (62b). (62c) represents unattested linkages.

## (62) a. typical linkages

means event	source	acted-upon = figure	goal
resulting change	source	figure	goal

## b. less typical linkages

means event	source	acted-upon = figure	goal
resulting change	source	figure	goal

## c. unattested linkages

means event	source	acted-upon = figure	goal
resulting change	source	figure	goal

In (62a) what is acted upon in the means event (in V1) is the undergoer (figure) of the resulting change (represented by V2), as is true of *mushiri-toru* (pluck-take) ‘pluck off’. (Additional source-source linkage and goal-goal linkage indicate that the resulting change of the affected entity is expressed in V1 as well as V2; see (61).) In less typical linkages indicated in (62b) the acted-upon entity in the means event is the source of the resulting change undergone by another entity (as is true of *damashi-toru* (deceive-take) ‘take by deceiving’), and the goal that the acted-upon entity has reached in the means event is the undergoer (figure) of the resulting change (as is true in *ii-makasu* (talk-defeat) ‘defeat by talking’). These are certainly conceptually possible causal events.

In contrast, the unattested patterns in (62c) do not seem to represent conceptually possible causal events. It is not conceptually possible, for example, that an acted-upon entity in the means event is the goal of the resulting change, or the source of the acted-upon entity in the means event is the undergoer of the resulting change. This appears to be the reason such linkage patterns are unattested.

If one can conceptualize the sequence of source ---> figure ---> goal as a spatio-temporal chain (Croft 1991), one might say in general that an entity in the chain of a means event cannot be linked to any entity in the chain of a resulting event that is subsequent to it (i.e., an entity to the right; see (62) above). The idea behind this is that the progression of a change in the means event cannot follow the development of the resulting change.

## 8.6 Conclusion

In this chapter I have discussed Japanese lexical compounds, which I have argued are one word at a- and f-structure as well as at c-structure. Their argument structure is in most cases identical with that of the rightmost component verb that has an argument structure, though arguments of the two component verbs can mix when V2 is an unergative motion verb. This fact cannot be explained by the inheritance view of the argument structure of compounds. The compounding process is characterized as embedding of the semantic structure of a non-head verb in the semantic structure of the head predicate, and patterns in lexical compounding are stated at the level of semantic structure. I have also pointed out certain conditions on the semantic linking between arguments of the two component verbs. They include the Shared Participant Condition, and others specific to compounds of particular semantic types. I have argued that these are the reflections of conditions on the well-formedness of the semantic structure of a predicate. Such conditions will be discussed further in the next two chapters.

## CHAPTER 9

### Complex Motion Predicates

This chapter examines the nature of what I will call purposive and participial complex motion predicates.<sup>1</sup> First, consider the sentence (1a).

- (1) a. Taro<sub>o</sub> wa hon o Kanda ni *kai ni ita*-ta.  
Taro Top book Acc Kanda Goal buy Pur go-Past  
'Taro went to Kanda to buy a book there.'
- b. Taro<sub>o</sub> wa [PRO hon o *kai ni*] Kanda ni ita-ta.  
Taro Top [ book Acc buy Pur] Kanda Goal go-Past  
'Taro went to Kanda to buy a book.'

In (1a), the verb of motion *itta* 'went' (the past-tense form of *iku* 'go') occurs adjacent to another verb *kai* 'buy' which is marked with the purposive marker *ni*. This sentence is superficially similar to a sentence with an independent purpose clause, such as (1b), which is roughly synonymous with (1a). However, the sequence *kai ni itta* 'went to buy' in (1a) exhibits certain properties which suggest that it constitutes a single predicate and that the sentences like (1a) are monoclausal (Miyagawa 1987b, Matsumoto 1991a; see also Tsujimura 1992b). This type of complex predicate is limited to cases in which the main verb is *iku* 'go', *kuru* 'come', *irassharu* 'come, go' (honorific), and, for many speakers, *kaeru* 'return'. I will call this type of predicate the purposive complex motion predicate.

(2a) is an example of the participial complex motion predicate.

- (2) a. Taro<sub>o</sub> wa sono hon o gakkoo ni *motte ita*-ta.  
Taro Top the book Acc school Goal have go-Past  
'Taro brought the book to the school.'
- b. Taro<sub>o</sub> wa [PRO sono hon o *motte*] gakkoo ni itta.  
Taro Top the book Acc take school Goal went  
'Taking the book with him, Taro went to school.'

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<sup>1</sup>This chapter is partially based on Matsumoto 1991a.

In (2a) *motte* ‘have’, which is the *-te*-marked participial form of the verb *motsu* ‘have, take’, appears adjacent to the main verb *itta* ‘went’. The participial verb in this construction typically expresses the activity or state of the moving person during motion, or some temporally prior action of the moving person that has some effect during the motion (see below). In the case of (2a) the participial *motte* is interpreted as a resultative and represents the state of Taro having a book during his motion, a state which results from the previous action of taking a book.<sup>2</sup> This sentence is superficially similar to (2b), which involves an independent participial adverbial clause. As pointed out in Matsumoto (1991a), however, (2a) exhibits the same kinds of monoclausal properties that (1a) does, and therefore can be regarded as monoclausal. I will call predicates like *motte iku* in (2a) participial complex motion predicates.<sup>3</sup>

The purpose of this chapter is to show that the sequence of a purposive or participial verb and a motion verb in sentences like (1a) and (2a) constitutes one word at both f-structure and a-structure, though they are two words in c-structure. I will show this by carefully comparing these complex predicates with their biclausal counterparts like (1b) and (2b). I will also discuss Miyagawa’s (1987a) restructuring account of purposive complex motion predicates.

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<sup>2</sup>The verb *motsu* is an inchoative verb meaning ‘come to have’ or ‘take’. Because of the resultative meaning of the participial form, I will gloss *motte* as ‘have’ in this case. The participle in Japanese can also convey non-resultative meanings, and in such cases I will gloss *motte* as ‘take’ when this is more appropriate, as in (2b)

<sup>3</sup>This is not the only kind of complex predicate composed of a participial verb and a verb of motion. In (i) below, *kuru* ‘come’ is used to refer to the abstract motion (toward the speaker) implicit in the effect produced by Taro’s action. In (ii), it marks the gradual progress of a change. See Yoshikawa 1976 for discussion of such cases.

- (i) Taro wa soko ni hu o utte kita.  
Taro Top there Loc pawn Acc put came  
‘Taro placed a pawn there (with some effect to the speaker).’
- (ii) Sora ga kuraku natte kita.  
sky Nom dark become came  
‘It is getting dark (It has come to be dark).’

## 9.1 The C-structure of Complex Motion Predicates

### 9.1.1 Evidence for C-structure Monoclausality

First, let us consider the constituent structure of sentences with purposive and participial complex motion predicates. There is evidence suggesting that sentences like (1a) and (2a) are monoclausal in constituent structure, in contrast to (1b) and (2b), which are biclausal. Consider the purposive complex motion predicate first. The initial piece of evidence comes from scrambling (Miyagawa 1987b). In Japanese an adverbial clause is an island with respect to scrambling: elements in an adverbial clause cannot scramble with elements of a matrix clause (Saito 1985). This is shown by the unacceptability of (3a), which involves an independent purpose clause (cf. (1b)). The situation is different in a sentence like (3b). All the NPs and PPs in (3b) can be freely scrambled. For example, sentences (3c) through (3g) are all acceptable, suggesting that these NPs and PPs are all in the same clause.

- (3) a. \*Taroo wa hon o Kanda ni [PRO kai ni] jitensha de it-ta.  
       Taro Top book Acc Kanda Goal buy Pur bicycle Inst go-Past
- b. Taroo wa hon o Kanda ni jitensha de *kai ni* it-ta.  
       Taro Top book Acc Kanda Goal bicycle Inst buy Pur go-Past  
       'Taro went to Kanda by bicycle to buy a book.'
- c. Taroo wa Kanda ni hon o jitensha de *kai niitta*.  
       Kanda ni Taroo wa hon o jitensha de *kai niitta*.  
       Kanda ni hon o Taroo wa jitensha de *kai niitta*.  
       Hon o Taroo wa Kanda ni jitensha de *kai niitta*.  
       Hon o Kanda ni Taroo wa jitensha de *kai niitta*.

The second piece of evidence comes from the distribution of *shika* (Miyagawa 1987b). (4a) is ungrammatical, as expected from the violation of the Locality Condition (sec. 22.3.1); the negative marker does not occur in the same clause. However, (4b) is grammatical, showing that here the NP *hon (o)* appears under the top S position.

- (4) a. \*Taroo wa [PRO sono hon shika kai ni] Kanda ni ik-anakat-ta.  
       Taro Top the book buy Pur Kanda Goal go-Neg-Past  
       'Taro went to Kanda to buy the book only.' (intended reading)
- b. Taroo wa Kanda ni sono hon shika *kai ni* ik-anakat-ta.  
       Taro Top Kanda Goal the book buy Pur go-Neg-Past  
       'Taro went to Kanda to buy the book only.'

These phenomena are observed only when the main verb is one of the restricted set of motion verbs listed earlier. Other verbs of motion such as *mukau* 'head for' are not acceptable in (3b) through (3g) and in (4b).

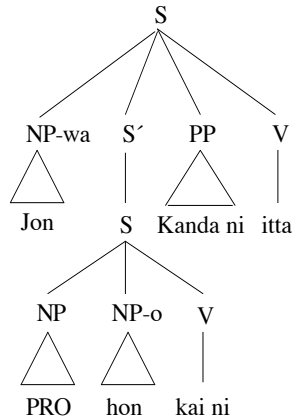
These pieces of evidence cannot be explained without assuming that purposive complex motion predicates create a monoclausal constituent structure. Note that one cannot assume a biclausal structure for (4b) and by an appeal to Functional Uncertainty explain the distribution of the arguments of the purposive verb (cf. sec. 2.4.1.3). Functional Uncertainty in the phrase structure of Japanese, as discussed in Chapters 3 (sec. 3.3.3) and 4 (sec. 4.3.2), allows only phrases in an embedded XCOMP to appear in an upper clause. The purposive clause, however, is not an XCOMP but an XADJ (open adjunct). One cannot postulate a rule in which all phrases in an XADJ can appear in an upper clause, either, since purposive complex motion predicates exhibit monoclausal properties only when the purposive verb is adjacent to a restricted set of verbs. Such a rule would incorrectly allow arguments and adjuncts of an XADJ to appear at a higher S level regardless of the position of the participial verb or the nature of the main verb.

Participial complex motion predicates also exhibit the same phenomena (Matsumoto 1991a). First, the NPs and PPs in (2a) scramble freely with respect to each other. Second, the particle *shika* can be placed on an NP associated with the participial verb with a negative morpheme appearing on *iku* 'go', as shown in (5a). (5b) shows that this is not possible with the biclausal counterpart.

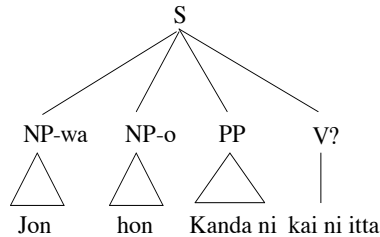
- (5) a. Taro<sub>Top</sub> wa sono hon shika gakkoo ni motte ik-anakat-ta.  
       Taro Top the book school Goal have go-Neg-Past  
       'Taro brought only the book to school.'
- b. \*Taro<sub>Top</sub> wa [PRO sono hon shika motte] gakkoo ni  
       Taro Top the book take school Goal  
       ik-anakat-ta.  
       go-Neg-Past  
       'Taro went to school, taking only the book.' (intended reading)

These observations suggest that sentences with a purposive complex motion predicate or a participial complex motion predicate have a constituent structure like (6b), in contrast to their biclausal counterparts, whose constituent structure is like (6a).

(6) a.



b.



Note that some sentences, such as (7) below, are ambiguous: they can be assigned a monoclausal structure as well as a biclausal structure.

- (7) Taroo wa Kanda ni hon o kai ni it-ta.  
 Taro TopKanda Goal book Acc buy Pur go-Past  
 'Taro went to Kanda to buy a book.'

In this sentence the object of the verb *kai* appears in a position adjacent to the verb. The sentence can therefore be interpreted either as a biclausal structure (with a purposive clause (*PRO hon o kai ni*) centrally embedded in the main clause), or as a monoclausal structure (with *kai ni itta* as the main predicate) in which the three phrases *Taroo wa*, *Kanda ni*, and *hon o* happen to appear in this order.

In the remainder of this chapter, I will use only sentences that can be unambiguously identified as monoclausal or biclausal owing to the positioning of the arguments of the participial or purposive verb, or to the use of *shika*.<sup>4</sup>

### 9.1.2 Morphological Status of Complex Motion Predicates

In (6b) it was left unclear whether the sequence of a participial or purposive verb and a motion verb comprises of one morphological word or two. In this

<sup>4</sup>There is another way to disambiguate sentences like (7): accentual pattern of purposive and participial complex motion predicates. When *kai ni itta* in (7) is pronounced as one accentual unit, the sentence is monoclausal; when it is pronounced as two accentual units, the sentence is biclausal. Thus, when *shika* is placed on *hon (o)* in (7) and *itta* is negated, *kai ni itta* must be pronounced as one accentual unit.

section, I will show that the sequence involves two morphological words. This analysis is supported by the tests that I introduced in Chapter 2 (sec. 2.2.3.2). For example, complex motion predicates do not undergo so-called Renyookei Nominalization (e.g., *\*kai ni iki*, *\*motte iki*). Moreover, various emphatic and focusing particles like *wa* and *nanka* can intervene between the two verbs, as shown in (8).

- (8) a. Taro<sub>Top</sub> wa sono hon o Kanda<sub>Goal</sub> ni *kai ni wa itta* ga, ....  
 Taro Top the book Acc Kanda Goal buy Pur Foc went but  
 ‘Taro did go to Kanda to buy the book, but....’
- b. Taro<sub>Top</sub> wa sono hon o gakkoo<sub>Goal</sub> ni *motte wa itta* ga, ....  
 Taro Top the book Acc school Goal have Foc went but  
 ‘Taro did bring the book to school, but ...’

One can also coordinate the participial or purposive verb.

- (9) a. Jon<sub>Top</sub> wa sono hon o doko<sub>Goal</sub> ni mo  
 John Top the book Acc anywhere Goal too  
*kai ni mo kari ni mo ik-anakat-ta.*  
 buy Pur even borrow Pur too go-Neg-Past  
 ‘John didn’t go anywhere to buy the book or to borrow it.’
- b. Jon<sub>Top</sub> wa sore o doko<sub>Goal</sub> ni mo *kakaete mo seotte mo*  
 John Top it Acc anywhere to too hold too carry.on.back too  
*ik-anakat-ta.*  
 go-Neg-Past  
 ‘John did not take the book anywhere, holding it (in his arms) or carrying it on his back.’

## 9.2 Functional Monoclausality

In spite of their two-word status in c-structure, purposive and participial complex motion predicates constitute a single predicate in f-structure. Evidence supporting this analysis is presented in the following sections.

### 9.2.1 Passivization

First, these complex predicates can be passivized, making the patient NP of the purposive or participial verb into the passive subject (Matsumoto 1991a). In (10a), for example, the complex predicate *motte iku* ‘go having’ or ‘bring’ is passivized. (10b) is an example in which the complex predicate *tori ni kuru* ‘come to take’ is passivized.

- (10) a. sono hon ga motte ik-are-ta (koto)  
 the book Nom have go-Pass-Past  
 ‘(the fact that) the book was taken away.’
- b. kono hon ga mada dare ni mo  
 this book Nom yet anybody by too  
*tori ni kor-arete inai* (koto)  
 take Pur come-Pass Asp-Neg  
 ‘(the fact that) this book has not been claimed (i.e., no one has come to take it).’

Interestingly, passivization is possible even when a particle intervenes between a participial (or purposive) verb and a verb of motion, as in (11).

- (11) Sono kodomo wa gakkoo ni tsurete wa ik-are-ta ga, ...  
 the child Top school Goal take Foc go-Pass-Past but  
 ‘The child was brought to school, but ...’

### 9.2.2 Adjunct Interpretation

The second piece of evidence comes from adjunct interpretation. Complex motion predicates restrict the adjuncts modifying the purposive or participial verb. First, consider (12).

- (12) a. Taroo wa [PRO yukkuri hon o yomi ni]  
 Taro Top slowly book Acc read Pur  
*isoide toshokan ni itta.*  
 hurriedly library Goal went  
 ‘Taro hurriedly went to the library to read a book leisurely.’
- b. \*Taroo wa yukkuri hon o isoide toshokan ni  
 Taro Top slowly book Acc hurriedly library Goal  
*yomi ni it-ta.*  
 read Pur go-Past  
 ‘Taro hurriedly went to the library to read a book leisurely.’  
 (intended reading)

While (12a) is a meaningful sentence, (12b) is not; here both *yukkuri* ‘slowly’ and *isoide* ‘hurriedly’ can only be interpreted with respect to Taro’s motion, and therefore the sentence is contradictory. This suggests that the purposive verb in complex motion predicates cannot be modified by a full range of adjuncts, thus arguing against functional biclausality.

Sentence (13) further shows that the interpretation of an adjunct PP treats a complex motion predicate as a single functional predicate. (13a) is ambiguous between the two readings, since *Marii to issho ni* ‘with Mary’ can modify either the purposive verb or the verb of motion (with the two alternative bracketing possibilities indicated in (13a)). On the other hand, (13b) is unambiguous, and the adverb phrase cannot be interpreted as modifying the purposive verb alone. In the most natural interpretation of this sentence, Mary both accompanies Taro to the library and shares his intention to borrow a book.

- (13) a. Taroo wa { [PRO Marii to issho ni hon o kari ni]  
 Marii to issho ni [ PROhon o kari ni]  
 Mary with book Acc borrow Pur  
 toshokan ni itta.  
 library Goal went  
 ‘Taro went to the library to borrow a book with Mary.’  
 (ambiguous)
- b. Taroo wa Marii to issho ni hon o toshokan ni  
 Taro Top Mary with book Acc library Goal  
*kari ni it-ta.*  
 borrow Pur go-Past  
 ‘Taro, along with Mary, went to the library to borrow the book.’

### 9.2.3 Desiderativization

Third, as Miyagawa (1987b) has observed, when the desiderative morpheme *-tai* is suffixed to a purposive complex motion predicate, the object of the purposive verb can be nominative-marked, as shown in (14a). This is also true of a participial complex motion predicate, as shown in (15a). (14b) and (15b) show that this is not possible with their biclausal counterparts.

- (14) a. Boku wa sono hon ga motte iki-takat-ta  
I Top the book Nom have go-want-Past  
'I wanted to take the book.'
- b. \*Boku wa [PRO sono hon ga motte]  
I Top the book Nom take  
gakkoo ni iki-takat-ta.  
school Goal go-want-Past  
'I wanted to take the book to school.' (intended reading)

- (15) a. Boku wa sono hon ga kai ni iki-takat-ta.  
 I Top the book Nom buy Pur go-want-Past  
 'I wanted to go to buy a book.'
- b. \*Boku wa [PRO sono hon ga kai ni] Kanda ni  
 I Top the book Nom buy Pur Kanda Goal  
 iki-takat-ta.  
 go-want-Past  
 'I wanted to go to Kanda to buy the book.' (intended reading)

Given the analysis of nominative case marking of objects proposed in Chapter 5 (sec. 5.5), this fact is consistent with the functional monoclausality of complex motion predicates.

#### 9.2.4 Verbal Anaphora

Finally, the *soo suru* test also shows that complex motion predicates are functionally monoclausal.

- (16) Jon wa hon o gakkoo ni motte it-ta.  
 John Top book Acc school Goal have go-Past  
 \*Marii mo soo shite itta.  
 Mary too so do went  
 'John brought the book to school. Mary did so, too.'

Sentence (16) is completely unacceptable  $\lambda$  precisely the pattern observed in sentences with monoclausal functional and argument structures.

### 9.3 Monoclausality at Argument Structure: Evidence from Semantic Constraints

#### 9.3.1 The Shared Figure Condition

There is also evidence suggesting that complex motion predicates constitute one predicate even in argument structure. I have already pointed out that the pattern of *soo suru* replacement with these predicates is consistent with this analysis. Another piece of evidence is the fact that complex motion predicates are subject to the same semantic conditions on possible argument structure as those placed on lexical verbs, which clearly constitute a single predicate at argument structure. This phenomenon is accounted for if these complex motion predicates themselves have a simplex argument structure.

There are various semantic constraints on possible argument structures of a predicate in Japanese. One such constraint is (17), which has already been mentioned in 8.1.4.2 above.

- (17) **The Shared Figure Condition:** The argument structure of a Japanese verb cannot have two (or more) locational arguments (e.g., locative, source, goal, etc.) which indicate the locations of two (or more) different entities (Figures).

The argument structure of complex motion predicates is a mixture of the arguments of a purposive or participial verb and those of a verb of coming or going. Therefore, when the purposive or participial verb itself takes locational arguments, there is a possibility of violating the Shared Figure Condition. The data below show that the condition is in fact respected in such cases: the argument structure of complex motion predicates cannot have locational arguments interpreted with respect to two different entities, even when their biclausal counterparts do allow such a reading. The complex motion predicates allow the following possibilities when a potential violation threatens to occur: when two moving entities can be regarded as moving together, locational phrases are interpreted with respect to the motion of both; otherwise, when the locational argument of the purposive or participial verb is optional or can be suppressed under the Specified Argument Deletion (Fillmore 1985, Lehrer 1970), that argument is suppressed; otherwise, the locational argument of the verb of motion is suppressed.

The Shared Figure Condition explains the following observations. First, the condition would exclude two goal arguments interpreted with respect to two different moving entities (Matsumoto 1991a). Consider (18).

- (18) a. Jon wa [PRO soko ni gomi o sutete] gakkoo ni itta.  
 John Top there Goal trash Acc throw school Goal went  
 ‘Throwing away trash there, John went to school.’
- b. Jon wa (\*gakkoo ni) soko ni sono gomi shika sutete  
 John Top school Goal there Goal the trash throw  
*ik-anakat-ta.*  
 go-Neg-Past  
 ‘(After) throwing away only the trash there, John went (\*to school).’

The combination of the verbs *suteru* ‘throw’ and *iku* ‘go’ in *sutete iku* ‘throw and go, leave behind’ would create an argument structure with two goal arguments interpreted with respect to two different entities, namely, the

thrown object and the moving person<sup>5</sup> (This is the type of participial complex motion predicate involving a perfect reading, in which the participial verb represents a temporally prior action which has some effect on the motion described; see below.) In spite of the acceptability of biclausal (18a), (18b) shows that such an argument structure is not possible, suggesting that two goals of two different entities cannot in fact appear in the same argument structure. Note that (18b) would be acceptable with the first goal PP *gakkoo ni* 'to school' suppressed.<sup>6</sup>

The same is true of purpose complex motion predicates, as exemplified in (19).

- (19) a. Jon wa [PRO ie no naka ni jibun no  
 John Top house Gen inside Goal self Gen  
 sentaku-mono o ire ni] soto ni itta.  
 laundry Acc put.in Pur outside Goal went  
 'John went outside to take his laundry into the house.'
- b. Jon wa soto ni jibun no sentaku-mono shika  
 John Top outside Goal self-Gen laundry  
 (??ie no naka ni) ire ni ik-anakat-ta.  
 house Gen inside Goal put.in Pur go-Neg-Past  
 'John went outside to take only his laundry (??into the house).'

Complex motion predicates also cannot have both locative and goal in their argument structure if they indicate the locations of two different entities (Matsumoto 1991a). Consider the sentences in (20).

- (20) a. Jon wa [PRO soko ni hon o oite] gakkoo ni it-ta.  
 John Top there Loc book Acc put school Goal go-Past  
 'John went to school, leaving the book there.'
- b. Jon wa (\*gakkoo ni) soko ni hon shika oite ik-anakat-ta.  
 John Top school Goal there Loc book put go-Neg-Past  
 'John went (\*to school), leaving only the book there.'

<sup>5</sup>A semantic relationship similar to that of (18b) is lexicalized in the English verb *leave* in *John left the book behind*, which involves an action of placing the book somewhere and a subsequent motion away from that location.

<sup>6</sup>According to this analysis, the unspecified argument deletion is an operation on the argument structure of a predicate, as Bresnan & Moshi (1990) claim for unspecified object deletion.

(20b) is unacceptable with a goal argument because of the violation of the Shared Figure Condition. Note that it is acceptable if the goal phrase is suppressed.

The Shared Figure Condition does *not* rule out the possibility of locative and goal indicating the location of the same moving entity. This is in fact borne out by the data. Consider (21).

- (21) a. Ken wa [PRO sono uma ni notte] soko e it-ta.  
 Ken Top the horse Loc ride there Goal go-Past  
 'Ken went there, riding the horse.'
- b. Ken wa sono uma ni shika soko e notte ik-anakat-ta.  
 Ken Top the horse Loc there Goal ride go-Neg-Past  
 'Ken rode there only on the horse.'

In (21b), *notte iku* 'go riding' can take both locative and goal, both describing the location of the same person.

The prohibition against syntactic expression of the location of more than one entity also rules out an argument structure containing a source and a goal interpreted with respect to two different moving entities. Interesting cases in this regard are (22) and (23) below.

- (22) a. Taroo wa [PRO booenkyoo o sooko kara dashi ni]  
 Taroo Top telescope Acc storehouse Src take.out Pur  
 soto ni itta.  
 outside Goal went  
 'Taro went outside to take a telescope out of the storehouse.'
- b. Taroo wa booenkyoo shika sooko kara soto ni  
 Taroo Top telescope storehouse Src outside Goal  
*dashi ni* ik-anakat-ta.  
 take Pur go-Neg-Past  
 'Taro went (out) to take only a telescope out of the storehouse (i.e. to move it from the storehouse to outside).'
- (23) a. Jon wa [PRO seetaa no shita kara shatsu o dashite]  
 John Top sweater Gen under Src shirt Acc take.out  
 gakkoo ni kita.  
 school Goal come-Past  
 'John came to school, with his shirttail showing from under his sweater.'

- b. Jon wa seetaa no shita kara shatsu shika (\*gakkoo ni)  
 John Top sweater Gen under Src shirt school Goal  
*dashite ko-nakat-ta.*  
 take.out come-Neg-Past  
 'John came (\*to school) with only his shirttail showing from under his sweater.'

In biclausal (23a), source and goal are interpreted with respect to different moving entities, namely Taro and a telescope. However, such a reading is not possible with (23b). The source and goal in (23b) must be interpreted with respect to the movement of the telescope, which might or might not be accompanied by the movement of Taro. The sentence means either 1) Taro went (to the storehouse) to take the telescope out of the storehouse (i.e., from inside the storehouse to the outside of it), or 2) Taro carried the telescope out of the storehouse. In the former case the locational arguments indicate the location of the telescope only, while in the latter they indicate the location of the telescope and Taro, which move together. Similarly, the goal phrase in (23b) must be suppressed, since otherwise the complex predicate *dashite kuru* would violate the Shared Figure Condition.

### 9.3.2 An Apparent Counterexample

In Matsumoto (1991a, 1992a) I observed that sentences like (24b) are unacceptable (cf. (24a)), attributing this to the violation of the Shared Figure Condition (the locative and goal PPs are interpreted with respect to two different entities). However, it has since been pointed out to me that (24c) is acceptable, at least much more so than (24b). The unacceptability of (24b) might be attributed to some constraint on the order of locational PPs (cf. Gruber 1976).

- (24) a. Jon wa [PRO sono hon o migi-te ni motte]  
 John Top the book Acc right-hand Loc have  
*gakkoo ni itta.*  
 school Goal went  
 'John went to school, holding the book in her right hand.'
- b. \*Jon wa sono hon shika migi-te ni gakkoo ni  
 John Top the book right-hand Loc school Goal  
*motteik-anakat-ta*  
 have go-Neg-Past  
 'John went to school, holding only the book in his right hand.'  
 (intended reading)

- c. Jon wa gakkoo ni wa migi-te ni sono hon shika  
 John Top school Goal Top right-hand Loc the book  
*motte ik-anakat-ta.*  
 have go-Neg-Past  
 ‘John went to school, holding only the book in his right hand.’

What is the difference between (24c) and similar but unacceptable sentences like (20b), which I argued is ruled out by the Shared Figure Condition? The crucial difference appears to lie in whether the theme of the participial verb moves together with the theme of the verb of motion. In (24) the book moves together with John and the two objects share a path, while the book in (20) does not. In this sense all the locational arguments in (24) can be said to indicate the location of the book, and the acceptability of (24c) is consistent with the Shared Figure Condition.<sup>7</sup>

This point can be seen perhaps more clearly in (25) below. In (25a) the thing attached moves together with the subject, while in (25b) it does not. This difference is correlated with the possibility of adding a goal phrase *soko ni*.

- (25) a. Jon wa soko ni migi-mune ni akai hane shika  
 John Top there Goal right-chest Loc red feather  
*tsukete ik-anakat-ta.*  
 attach go-Neg-Past  
 ‘John went there with only a red feather attached on the right side of his chest.’  
 b. Jon wa (\*soko ni) genkan ni hyoosatsu shika  
 John Top there Goal door Loc name.plate  
*tsukete ik-anakat-ta.*  
 attach go-Neg-Past  
 ‘John went out, having attached only his name plate to the door.’

<sup>7</sup>In this sense, the meaning of *motte iku* ‘go having’ is similar to *take*, or ‘cause ... to go’. Note that in some cases this predicate can be used even when the subject does not itself move but only causes the object to move, as in the following example.

- (i) Matsui wa sono booru o refuto sutando ni motte it-ta.  
 Matsui Top the ball Acc left stand Goal have go-Past  
 ‘Matsui brought the ball to the left stand (i.e., homered to the left stand).’

In this meaning *motte iku* must be pronounced with a LHHHH accentual pattern, though otherwise it can be pronounced as either HLLLL or LHHHH.

To summarize, there are certain restrictions on the argument structure of a complex motion predicate. It cannot include two goals of two different moving entities, or locative and goal representing the locations of two different entities, or goal and source of two different moving entities. These observations are consistent with the Shared Figure Condition on the argument structure of Japanese verbs.

### 9.3.3 Alternative Accounts

In the present account, the facts reported above have been attributed to a semantic constraint on argument structure. As we will now see, they cannot be accounted for by reference to other, related notions.

#### 9.3.3.1 Constraints on Case Markers

One possible alternative account would appeal to a constraint on the cooccurrence of surface case markers in a clause. Many of the sentences ruled out by the Shared Figure Condition have two occurrences of the case marker *ni*, which can mark both goal and locative. In Japanese the multiple occurrence of the same case marker in one clause is often disfavored. One typical example is the double-*o* constraint (sec. 2.2.2.2), which prohibits the occurrence of two or more accusative marked NPs in the same clause (see Harada 1973, Poser 1983, etc.). One might, therefore, attempt to account for the above phenomena by a constraint forbidding two or more occurrences of the case marker *ni*.

This alternative account cannot be accepted for two reasons. First, it cannot exclude a source and a goal interpreted with respect to two different moving entities. Second, the existence of the alleged double-*ni* constraint cannot be substantiated empirically, given the acceptability of the sentences in (26). (Some of these sentences do not sound perfect without *mo* or other particles following *ni*, perhaps for stylistic reasons. However, this is not crucial here. Those sentences with two *ni*'s that are ruled out by the Shared Figure Condition do not improve with the addition of such particles.)

- (26) a. Jon wa donna seito ni mo shitsumon ni kotaeru.  
       John Top any student Goal even question Goal answer  
       'John gives an answer to any question to any student.'
- b. Jon wa Koobe ni mo Biru ni kozutsumi o okutta.  
       John Top Kobe Goal too Bill Dat parcel Acc sent  
       'John sent a parcel to Kobe to Bill.' (cf. Gruber 1976)

- c. Jon wa daigaku ni wa toshokan ni shika ik-anai.  
John Top university Goal Top library Goal go-Neg  
'John goes to the university to the library only.'

The sentences in (26) are in fact very interesting in terms of the Shared Figure Condition. Note that these sentences have two goal arguments, but they are both goals of the same entity: the answer is directed both at the question and at the student, the parcel goes both to Bill and to Kobe, and John goes both to the university and to the library. Therefore, they do not violate the Shared Figure Condition.

#### *9.3.3.2 Constraints on the Cooccurrence of Thematic Roles*

Another possible alternative is a constraint on the cooccurrence of thematic roles in an argument structure. It has sometimes been claimed that two or more occurrences of the same thematic role in the argument structure of a predicate is prohibited (Fillmore 1968, Grimshaw 1990). Such a restriction, however, cannot explain the whole range of data considered above. It does explain the prohibition against the occurrence of two goals in an argument structure, but it cannot explain other cases, like the restriction on the cooccurrence of locative and goal.

Alternatively, one might say that certain combinations of thematic roles in an argument structure are prohibited, and appeal to such a constraint to account for the observations above. But such an account does not work, either. One cannot say that the combination of locative and goal is prohibited in the argument structure of Japanese verbs, since such a combination does occur if the locative and goal indicate the locations of the same entity (see above). The real condition involves not the occurrence of locational roles in an argument structure per se, but the mapping between the semantic structure and the argument structure, as formulated in the Shared Figure Condition.

#### *9.3.3.3 Constraint on Semantic Structure*

The facts described above cannot be explained by constraints on the semantic structure of a predicate per se, either. For example, a constraint such as (27) cannot be maintained.

- (27) The semantic structure of a predicate can contain information on the location of only a single figure.

In fact, the semantic structure of complex motion predicates can have two paths of two different entities represented. This is true of *sutete iku* 'go after throwing, leave behind' in (18) above. I have pointed out that this complex predicate can take the goal of throwing, but not the goal of going as its

argument. However, the semantic structure of this verb does contain some information on the goal of going as well as the goal of throwing, since this verb explicitly requires the goal of motion to be distant from the position of the speaker: *sutete iku* is not the same as *sutete kuru* ‘come after throwing’. This means that the semantic structure of this predicate necessarily includes the representation of two paths involving two different moving objects, though only one of the path can be expressed syntactically (via the arguments of the predicate).<sup>8</sup>

#### 9.3.3.4 *Single Delimiting Constraint and Unique Path Constraint*

Finally, I will discuss Tenny’s (1987, 1994) Single Delimiting Constraint and Goldberg’s (1991, 1995) Unique Path Constraint. These two constraints have been used to explain a similar set of data involving the prohibited cooccurrence of two or more goal phrases, resultative phrases, and/or similar phrases that mark the endpoint of the event described. Tenny’s Single Delimiting Constraint is stated in (28).

- (28) The event described by a verb may only have one measuring-out and be delimited only once.

Here measuring-out refers to “the role played by the argument in marking the temporal terminus of the event” in relation to the role of certain direct internal arguments and path objects (Tenny 1994:10-11), while delimitedness “refers to the property of an event’s having a distinct, definite and inherent endpoint in time” (1994:4) in relation to the role of an indirect internal argument. This constraint is phrased as if it were a constraint on the semantic structure of a predicate, but in fact it is intended as a semantic constraint on the syntactically expressed arguments of a predicate. In the case of motion sentences this constraint essentially states that there can be only one path and one goal expressed as arguments of the predicate.

Goldberg’s condition is given in (29).

- (29) If an argument X refers to a physical object, then more than one distinct path cannot be predicated of X within a single clause.

Goldberg does not state that there can be only one such X of which a path is predicated, though she appears to assume so. She claims that this constraint is different from Tenny’s in that it can treat non-delimiting directional phrases, too. This constraint appears to be intended as a constraint on the semantic structure of the predicate.

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<sup>8</sup>There are some simplex verbs in English whose semantic structure similarly involves two moving entities, such as *chase* and *follow*.

One difference between my Shared Figure Condition on the one hand and the Unique Path Constraint and Single Delimiting Constraint on the other lies in the target of their restriction. The Shared Figure Condition does not constrain the number of Paths, but rather restricts the number of Figures in relation to locational arguments, whereas the Single Delimiting Constraint and Unique Path Constraint restrict the number of Paths to one.

The question is whether both kinds of constraints are needed or not. The answer appears to be that both are in fact necessary in one way or another. One need for the Shared Figure Condition comes from the restriction on the interpretation of locative and goal arguments observed in complex motion predicates (see above). The Single Delimiting Constraint and Unique Path Constraint cannot treat such restrictions involving locatives. In fact Goldberg (1991: 372) explicitly exclude locatives in formulating her condition, given that more than one locative arguments can occur with one verb (e.g., *They found her in Kansas in a deep depression*). Such examples appear to be restricted to cases where both locatives are interpreted with respect to the same entity, as the Shared Figure Condition states.

On the other hand, the number of paths that can be expressed with respect to one figure must be restricted. In this respect, the notion of unique path must be elaborated in order to accommodate some apparent counterexamples. First, consider the sentences in (26). In these sentences the verbs *kotaeru* 'answer', *okuru* 'send', and *iku* 'go' take two goal arguments, interpreted with respect to the same moving entity. This shows that multiple specifications of path are indeed possible under certain circumstances. In the case of (26) the two goal phrases indicate two different aspects of the goal of the same path (see Goldberg 1991:370-371 for examples from English).

Another case in which two goal arguments can occur with one predicate is when two successive paths are involved.<sup>9</sup> Consider (30).

- (30) a. Shoobooshi-tachi wa [PRO nikai ni agari ni]  
           fireman-Pl Top                   second.floor Goal go.up Pur]  
           sono kaidan-guchi ni it-ta.  
           the stairs-entrance Goal go-Past  
           'The firemen went to the stairway entrance in order to go up to the  
           second floor.'

---

<sup>9</sup>This is also true of English example (i), in which two goal phrases occur. This sentence must be interpreted such that the path to Nagoya and the path to Osaka are sequentially located and are traversed in succession.

(i) John went from Tokyo to Nagoya to Osaka.

- b. Shoobooshi-tachi wa sono kaidan-guchi ni wa  
 fireman Top the stairs-entrance Goal Foc  
 nikai ni shika agari ni ik-anakat-ta.  
 second.floor Goal go.up Pur go-Neg-Past  
 'Firemen went to the stairway entrance to go up to the second  
 floor only.'

In (30b), the complex motion predicate *agari ni iku* 'go to go up' can have two goal arguments, at least for many speakers. These two goal arguments are interpreted with respect to the same person traversing two sequential paths.

Given these observations, one might postulate the following condition on path in addition to the Shared Figure Condition.

- (31) **The Path Condition:** Path arguments of a verb (source, route and goal) must represent aspects of a single path or a spatially continuous sequence of paths.

The need for the Shared Figure Condition as well as the Path Condition must be carefully evaluated on the basis of English data for which Tenny's and Goldberg's proposals have been made. This, however, goes beyond the scope of this book.

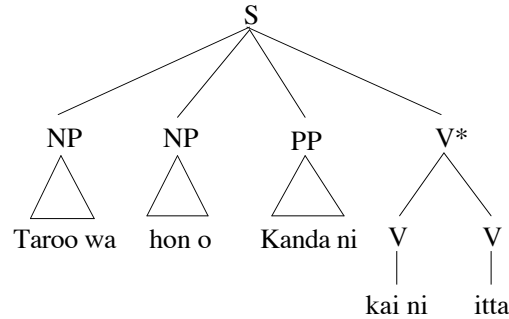
## 9.4 Summary

The above considerations show that complex motion predicates constitute two morphological words but one predicate at both functional and argument structures. That is, the constituent structure, functional structure and argument structures of sentence (1a), repeated here as (32a), would be represented as (32b), (32c), and (32d) respectively.

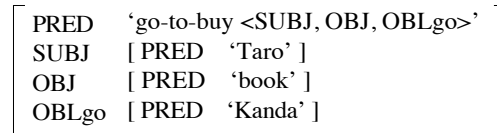
The nature of the node dominating the complex motion predicate is not entirely clear. For lack of a better solution, I will use the V\* notation of Booij's (1990). Booij uses this notation for separable complex verbs in Dutch, which, like complex motion predicates in Japanese, are two morphological words functioning as a single predicate (see Neeleman & Weerman 1993 for a discussion of Booij's solution).

- (32) a. Taroo wa hon o Kanda ni kai ni it-ta.  
 Taro Top book Acc Kanda Goal buy Pur go-Past  
 'Taro went to Kanda to buy a book there.'

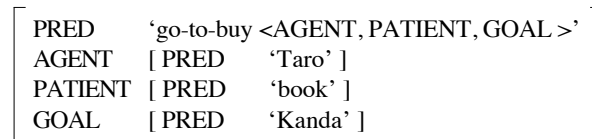
b.



c.



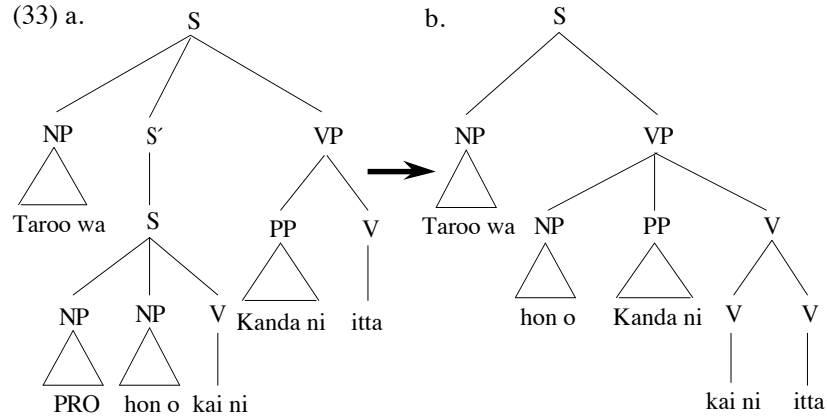
d.



## 9.5 The Semantics of Complex Motion Predicates and Restructuring

### 9.5.1 The Restructuring Account

Miyagawa (1987b), noting some of the monoclausal properties of purposive complex motion predicates, has proposed that sentences involving purposive complex motion predicates are to be derived from corresponding biclausal structures by a restructuring rule similar to that proposed for Italian restructuring constructions (Burzio 1986, Rizzi 1992, etc.). Such a rule, he claims, converts a biclausal structure like (33a) into a monoclausal structure like (33b). This rule is to apply during the mapping from D-structure to S-structure.



Resorting to a restructuring rule, however, is an undesirable solution in GB, since it produces structures that violate the Projection Principle. Therefore, the use of such a rule must be carefully evaluated. In this regard, it is not entirely clear why such a rule is to be preferred over base-generation of a monoclausal structure for the complex predicates under discussion. No evidence has been found as to why sentences with a complex motion predicate *must* be analyzed as biclausal at D-structure, while there is evidence for analyzing them as monoclausal at S-structure.

The restructuring account will require modifications if it is to explain some of the phenomena discussed above. For example, the observations noted earlier regarding restrictions on the possible argument structures of a complex motion predicate might be accounted for by assuming that constituent restructuring is accompanied by the restructuring of argument structure and that the result must satisfy the conditions on the possible argument structures of a predicate.

However, the restructuring account encounters a much more serious problem in dealing with the meanings of complex motion predicates.

### 9.5.2 Semantic Differences between Complex Motion Predicates and Their Biclausal Counterparts

#### 9.5.2.1 Purposive Complex Motion Predicates

Earlier, I pointed out that complex motion predicates are roughly synonymous with their biclausal counterparts. However, there are many kinds of subtle differences in meaning between the two (Matsumoto 1991a). Consider first purposive complex motion predicates. Compare the following two sentences.

- (34) a. Taroo wa suutsu o Meeshiizu to Enporiamu ni *kai ni itta*.  
 Taro Top suit Acc Macy's and Emporium Goal buy Pur went  
 'Taro went to Macy's and Emporium to buy a suit there.'
- b. Taroo wa [PRO suutsu okai ni] Meeshiizu to  
 Taro Top suit Accbuy Pur Macy's and  
 Enporiamu ni itta.  
 Emporium Goal went  
 'Taro went to Macy's and Emporium so that he could buy a suit.'

There is a certain semantic difference between (34a) and (34b). (34a) entails that both Macy's and Emporium are Taro's intended locations of buying a suit, whereas (34b) simply means that Taro's trip to Macy's and Emporium was made with the overall intention of buying a suit. Therefore (34b) is acceptable if, for example, Taro intends to buy a suit at just one of the two stores, going to the other only to compare prices. (34a), on the other hand, is not acceptable in this case, because it suggests that Taro had the intention of buying a suit at both stores (i.e., he wanted to buy two different suits). Thus, the goal argument of a complex predicate must be the intended location at which the action described in the purposive verb is to be performed. This is a natural consequence of the goal being an argument of the complex verb 'go to buy' rather than 'go'.

The goal argument of a complex predicate must also represent a location where the intended action is to be performed *immediately* after the termination of the motion. Consider (35a) and (35b).

- (35) a. Taroo wa [PRO ichigatsu kara hajimaru myuujikaru o mi ni]  
 Taro Top January from begin musical Acc watch Pur  
 kurisumasu no Nyuuyooku ni itta.  
 Christmas Gen New York Goal went.  
 'Taro went to New York at Christmas, in order to see a musical that was to begin in January.'
- b. Taroo wa ichigatsu kara hajimaru myuujikaru o  
 Taro Top January from begin musical Acc  
 kurisumasu no Nyuuyooku ni mi ni itta.  
 Christmas Gen New York Goal watch Pur went  
 'Taro went to New York at Christmas to see a musical that was to begin in January (right after arrival).'

(35a) is true if Taro went to New York intending to stay there till January, when he intended to see a musical. (35b), on the other hand, is not true under such circumstances; it entails that Taro intended to see a musical directly after getting to New York, and therefore it implies that Taro went to New York during the Christmas season by mistake (or that he had some special way to preview the musical before it was open to the public). Note that *kurisumasu no* ‘at (of) Christmas’ in (35) is a modifier of the noun *Nyuu-yooku* ‘New York’ rather than an adjunct of *mi ni itta* ‘went to see’; the difference between (35a) and (35b) therefore cannot be attributed to the way adjuncts are interpreted with respect to complex motion predicates.

This observation suggests that purposive complex predicates denote a motion where the intention described by the purposive verb is accomplished when the motion ends, or a negligibly short time thereafter.

#### 9.5.2.2 Participial Complex Motion Predicates

Semantic differences can also be found between sentences with a participial complex motion predicate and their biclausal counterparts. This point is illustrated by the possible semantic relations which a participle can convey in a biclausal structure and in a complex predicate. In the case of participial complex motion predicates, participles can indicate only four kinds of semantic relations with respect to a verb of motion. These are what I call resultative, progressive, iterative, and perfect, as illustrated in (36).

- (36) a. Taroo wa sono suutsukeesu o kooban ni *motte itta*.  
 Taro Top the suitcase Acc police.box Goal have went  
 ‘Taro brought the suitcase to the police box.’
- b. Taroo wa sono otoko shika kooen made *otte ik-anakat-ta*.  
 Taro Top the man park as.far.as chase go-Neg-Past  
 ‘Taro chased only the man to the park.’
- c. Taroo wa sono booru o koko ni *kette ki-ta*.  
 Taro Top the ball Acc here Goal kick come-Past  
 ‘Taro came kicking the ball here.’
- d. Taroo wa sono jugyoo ni sono kiji shika *yonde ik-anakat-ta*.  
 Taro Top the class Goal the article read go-Neg-Past  
 ‘Having read only the article, Taro went to the class.’

The resultative reading involves verbs which denote a change of state of the subject NP, such as *motsu* in (36a), which is an inchoative verb meaning ‘come to have’ (or ‘take’). In this case, the complex predicate indicates that the state resulting from the change holds during the motion of the subject

NP. The progressive reading involves verbs that denote some durative activity that can accompany the motion of the subject NP, such as *ou* 'chase' in (36b). In this case, the complex predicate indicates that the activity described by the participle accompanies the motion of the subject NP. The iterative reading involves verbs denoting repeatable telic action, such as *keru* 'kick' in (36c). In this case the repetition accompanies the motion described. Finally, the perfect reading involves verbs that denote any activity that does not entail a change of state of the subject NP, such as *yomu* 'read' in (36d). In this case, the complex predicate indicates that the activity has finished before the motion of the subject NP begins. Such an activity must be interpreted as affecting the motion of the subject NP in some way. In the case of (36d) the reading of the article is interpreted as some sort of prerequisite for coming to class (e.g., it was part of a homework assignment).

Participial adverbial clauses can have some other semantic relations to the main verb (see Kuno 1973, Hasegawa 1995, etc.). For example, they can indicate reasons, as in one reading of (37). Note that such a reading is not possible with the corresponding complex predicate in (36d).

- (37) Taroo wa [PRO sono kiji o yonde] sono jugyoo ni kita.  
Taro Top the article Acc read the class Goal came  
'Taro read the article and (that's why he) came to the class.'

Semantic differences can be found between participial complex motion predicates and their biclausal counterparts even when the participle marks the same semantic relationship in the two cases. For example, observe the semantic difference between (36a) and (38), in which the participial verbs have a resultative reading.

- (38) Taroo wa [PRO sono suutsukeesu o motte] kooban ni itta.  
Taro Top the suitcase Acc take police.box Goal went  
'Taking the suitcase with him, Taro went to the police box.'

(38) is true even when Taro just happened to take a suitcase along with him when going to the police box, whereas (36a) suggests that there is a close relationship between taking the suitcase and going to the police box (e.g., Taro wanted to make a report to the police about the suitcase). Also, (36a) requires that Taro kept the suitcase with him throughout his trip to the police box, while this is not the case with (38). Thus, the motion of the subject NP and the action or state accompanying it must be more closely related semantically in a participial complex motion predicate than in the corresponding biclausal structure.

Another difference concerns the range of verbs that can appear in the participial form, as shown in (39).

- (39) a. Jon wa [PRO sono koto o {kangaete/shinjite}] soko ni itta.  
John Top the thing Acctthink / believe there Goal went  
'John went there, {thinking about it/believing it}.
- b. Jon wa sono koto shika {kangaete/?shinjite} ik-anakat-ta.  
John Top the thing think / believe go-Neg-Past  
'John went there, {thinking about it only / believing it only}.

(39) indicates that some non-agentive verbs do not form a complex motion predicate naturally, though the acceptability of *kangaete iku* suggests that this is possible in some cases (see a similar observation in manner compounds in sec. 8.5.2.2).

Such phenomena cannot be accounted for in a restructuring account without adding many semantic conditions on restructuring. However, the addition of such semantic constraints is not a desirable solution, given that an important goal of Government and Binding Theory is to eliminate such semantic conditions on syntactic rules. On the other hand, such phenomena are to be expected in the present account, in which complex motion predicates count as a single predicate in a-structure and are semantically one unit.

### 9.5.3 Idiosyncrasies

Finally, some complex motion predicates have acquired idiosyncratic meanings, which are not available when a participial or purposive verb and a motion verb are used in a biclausal sentence. Such idiosyncrasies are characteristic of semantically “lexical” items (cf. Chomsky 1970). Some examples are given in (40).

- [illegible]

Such idiosyncrasies cannot be explained in the restructuring account; on the other hand, they are consistent with the view that complex motion

predicates are semantically a single unit (i.e., one predicate in argument structure), and are lexical in this sense.

## **9.6 Conclusion**

In this chapter, I have argued that purposive and participial complex motion predicates constitute one word at functional structure and argument structure, although they are two words at c-structure. One piece of evidence for their wordhood at argument structure is that they are subject to the same constraint that appears to be placed on a semantically lexical unit (one word at argument structure).

I have also pointed out certain semantic differences between complex motion predicates and their corresponding biclausal counterparts. In the next chapter, I will argue that these differences reveal even more about the semantic constraints on what can constitute a single predicate at argument structure.

## CHAPTER 10

### **Constraints on Semantically Lexical Items: The Semantics of Motion Predicates**

In the previous two chapters I have argued that Japanese lexical compound verbs and complex motion predicates have a monoclausal argument structure. This means that for these predicates, a complex semantic structure (involving manner of motion, cause of motion, etc.) is mapped onto a simplex argument structure (the process called lexicalization), and that in this sense such predicates are semantically lexical.

A complex semantic structure has to satisfy certain conditions in order to be mapped onto a simplex argument structure.<sup>1</sup> For example, a causing event and a caused event must be related to each other in a direct way in order to be expressed as a lexical causative, which is monoclausal at a-structure (as opposed to morphological or periphrastic forms), as discussed in Chapter 6 (The Determinative Causation Condition, sec. 6.6; see also sec. 8.5.2.2). In Chapter 8 I discussed some constraints on the semantic structure of a predicate in terms of the pattern of semantic associations (e.g., The Shared Participant Condition and an agentivity condition on MEANS structure; sec. 8.5.2). In Chapters 8 and 9 I argued that a certain semantic condition must be satisfied by the argument structure of a predicate that contains locational arguments (The Shared Figure Condition, sec. 8.1.4.2, 9.3.1, 9.3.3.4).

In this chapter, I will go into greater detail on the constraints imposed on what can constitute a single predicate at a-structure (i.e., a semantically lexical item), primarily on the basis of predicates describing a motion event. I will first identify some constraints on the mapping of a complex semantic structure onto a simplex argument structure, on the basis of English and Japanese simplex motion verbs. I will then show that the same conditions are respected by the semantic structures of complex motion predicates and compound motion verbs in Japanese. This fact, I argue, confirms the analysis in which these predicates constitute a single word in argument structure. The applicability of the proposed conditions on lexicalization to

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<sup>1</sup>McCawley 1973, Carter 1976, Wierzbicka 1980, Croft 1991, and Tenny 1994 are some of the works that addressed this issue.

these predicates also strengthens the validity of the proposed conditions. The discussion will also clarify the nature of the semantic structures, especially as regards the temporal structure of lexical meaning.

The present chapter is somewhat different from the predecessors in that the focus is not placed on the analysis of any one particular kind of predicate. Different kinds of predicates are discussed in different sections in this chapter. In Section 10.1, I will spell out some background issues to be addressed. Then, I will examine constraints placed on motion predicates, first on the basis of simplex motion verbs in English and Japanese (sec. 10.2) and then of complex motion predicates and compound verbs in Japanese (sec. 10.3). In 10.4, I formalize these conditions, and extend the present analysis to more examples in 10.5. In 10.6, finally, I return to the predicates that I discussed in Chapters 3 through 7 and briefly examine whether there are any semantic constraints on morphological and functional wordhood.

## 10.1 Conflation and the Semantics of Motion

The notion of mapping from a semantic structure to an argument structure is not new to linguistic theory. The nature of such a mapping has been discussed in a variety of ways: under the heading of (semantic) incorporation (Gruber 1976, Kageyama 1980a), pre-lexical predicate raising in Generative Semantics (e.g., McCawley 1968a), and conflation and lexicalization patterns in cognitive semantics (Talmy 1985, 1991) and conceptual semantics (Jackendoff 1990).

Talmy's (1985, 1991) study of lexicalization is especially relevant here, since it concerns the lexicalization of motion events which will be primary concern in this chapter. Talmy identifies several different components of meaning that can be expressed in the meaning of a motion verb. According to him, a motion event is composed of the fact of Motion per se, Figure (a moving object), Path, and Ground (the reference object with respect to which the Path is defined). A motion event often involves a secondary event, which may include cause of motion, manner of motion, purpose of motion, etc., as shown in (1) (Talmy 1985).

- (1) [motion Figure Motion Path Ground] [activity EVENT]  
cause  
manner  
purpose, etc.

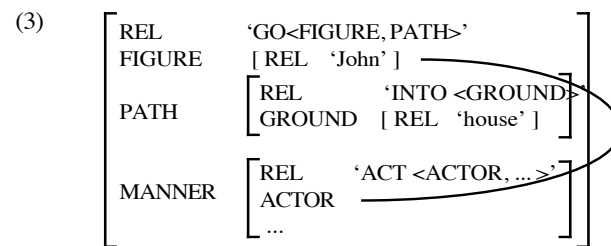
Talmy (1985) claims that a verb expressing motion can “conflate” the fact of Motion with other aspects of the motion (e.g., path) or of a secondary event (e.g., cause, manner). He further observes that different

languages tend to lexicalize different sets of these components in the meaning of a motion verb. For example, Romance languages such as Spanish typically conflate Motion with some aspects of Path such as direction (e.g., *entrar* 'enter'), while native English verbs typically conflate Motion with Manner (e.g., *walk*).

This difference in conflation pattern can be illustrated in English by the native verb *walk* and the borrowed verb *enter*, which is Romance in origin and which still retains its original Romance conflation pattern. As just indicated, the verb *walk* conflates the fact of Motion with the Manner of motion, while *enter* conflates the fact of Motion and the Path of motion. Consider the following sentences.

- (2) a. John walked into the house.  
b. John entered the house, walking (slowly).

The semantic structures of these two sentences are roughly the same, and can be (tentatively) described as (3) below.



The MANNER substructure is not fully described here, but it is supposed to represent the specific manner of motion that *walk* indicates (e.g., moving one's legs alternately in such a manner that one leg begins to touch the ground before the other leaves the ground, etc.). I will provisionally represent a Path relation in terms of a relation like 'INTO', which takes GROUND as its argument. (This analysis of Path relations will be revised below.)<sup>2</sup>

The difference between (2a) and (2b) lies in the pattern of conflation. The verb *walk* conflates 'GO' and the 'ACT' of MANNER substructure (i.e., moving one's legs alternately), while *enter* conflates 'GO' and 'INTO'.

<sup>2</sup>The term Path is used here to refer to the whole extent of the line along which a moving object moves. It comprises a set of a Source, a Goal, and all intermediate points which a moving object occupies during its motion. In the semantic structure it is Path, rather than its components like Source and Goal, that is an argument of a motion predicate. See Jackendoff 1990; footnote 4, Chapter 2 for more discussion on this issue.

Talmy uses the term *lexicalization* to refer to this kind of conflation in the meaning of a *verb stem*. In the present chapter, I will extend this use slightly, and use the term to refer to such conflation in the meaning of a single predicate at a-structure, regardless of whether it comprises morphologically one verb stem or not.

Many Japanese verbs of motion conflate the fact of Motion with a certain aspect of Path (e.g., direction) (Miyajima 1984, Matsumoto 1996b). Examples include *iku* 'go', *kuru* 'come', *agaru* 'go up', *oriru* 'go down', *deru* 'go out', *hairu* 'go into', *tooru* 'go through, pass', *noboru* 'go up, climb', *mawaru* 'go around', *tsuku* 'arrive', *itaru* 'reach', *hanareru* 'leave', *shuppatsu suru* 'depart', etc.

There are some verbs which appear to conflate Manner and Motion, such as *hashiru* 'run', *aruku* 'walk', *kakeru* 'run, gallop', and *hau* 'crawl'. It is in fact controversial whether these verbs represent just a particular manner of moving limbs, or the fact of Motion as well (see Ikegami 1981, Miyajima 1984, Matsumoto 1996b). As pointed out in Matsumoto (1996b), the facts are subtle. These verbs do represent the activity of driving one's body forward by a certain motion of the limbs ("body-relative motion"). For example, (4) below means that cheetahs move forward faster than any other animal, not that they move their limbs faster than any other animal.

- (4) Chiitaa wa doobutsu no naka de ichiban hayaku hashiru.  
 cheetah Top animal Gen inside Loc first fast run  
 'Cheetahs run fastest of all animals.'

However, this verb does not entail a change in location, as shown by the acceptability of the following sentence.

- (5) Jon wa aruku hodoo no ue o hantai-muki ni  
 John Top walk sidewalk Gen top Acc opposite-direction Goal  
 hashit-ta ga, mae ni susum-anakat-ta.  
 run-Past but front toward proceed-Neg-Past  
 'John "ran" backward on a moving sidewalk, but he was not able to go forward.'

One notable fact regarding the verb *hashiru* (and other manner of motion verbs in Japanese) is that, unlike English *run*, it cannot take a Goal argument (Miyajima 1972, Ikegami 1981, etc.). In order for a Goal to be expressed, one must embed the verb in a participial complex motion predicate involving a deictic verb, as in *hashitte iku* (run go) 'run'. Observing this, Jackendoff (1990) states that Japanese complex motion predicates transparently encode in two component verbs two aspects of a

motion event  $\Delta$  the fact of Motion and the Manner of motion  $\Delta$  which are conflated into the meaning of a single manner of motion verb in English (cf. Levin & Rapoport 1988). This statement is true, except that *hashiru* does itself encode body-relative motion. A complex motion predicate consisting of a manner of motion verb and a deictic verb entails an actual change of location, and therefore it cannot be used in (5) in place of *hashiru*.<sup>3</sup>

Complex motion predicates like *hashitte iku* (run go) ‘run’ can be regarded as conflating the fact of Motion with some other aspect of Motion (typically Manner or Purpose) in the meaning of a predicate, since a complex semantic structure involving manner or some other aspect of motion is mapped onto a single predicate at argument structure. Japanese complex motion predicates (and compound verbs) differ from English verbs like *run* and *enter* in that they are morphologically complex and different aspects of the motion are expressed by different parts of the predicate, rather than conflating all of these aspects of motion in a single morpheme. However, they do conflate these aspects in the meaning of a single *predicate* (semantic word), and in this sense they involve lexicalization as I use the term here.

Some examples of complex motion predicates conflating the fact of Motion with manner of motion, accompanying state, or purpose of motion, respectively, are provided in (6).

- (6) a. Taro wa Kanda ni hashitte itta.  
       Taro Top Kanda Goal run went  
       ‘Taro ran to Kanda.’
- b. Taro wa sono hon o gakkoo ni motte itta.  
       Taro Top the book Acc school Goal have went  
       ‘Taro brought the book to the school.’

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<sup>3</sup>Levin (Levin 1993, Levin & Rapoport 1988, Levin & Rappaport Hovav 1992) argues that an English manner of motion verb such as *run* does not itself represent displacement, but acquires this component by cooccurring with what she calls directional phrases (path phrases) such as *to the school*. However, the English verb *run* does encode body-relative motion, as the translation of (5) suggests. See Matsumoto (1996b) on this.

- c. Taro wa    hon o    Kanda ni    kai ni    itta.  
     Taro Top   book Acc   Kanda Goal buy Pur   went  
     ‘Taro went to Kanda to buy a book there.’

Complex motion predicates can be quite useful in examining the semantic constraints placed on lexicalization. Since complex motion predicates have corresponding biclausal structures involving an independent participial or purposive clause, the semantic difference between these predicates and their corresponding biclausal expressions can be interpreted as revealing what can and what cannot be expressed in a single predicate. The productivity of these predicates also makes the study of such constraints more rewarding. The study of simple lexical verbs may be less than fully effective in pinning down semantic constraints on lexicalization, since the absence of certain lexical items (gaps) may not be a reflection of semantic constraints. A gap can be accidental (non-existent by accident) as well as systematic (excluded by constraints). Given the productivity of complex motion predicates, however, any gaps found in the meanings of complex motion predicates are very likely to be systematic ones.

Many Japanese compound motion verbs, too, conflate motion with some other aspect of motion or secondary activity. There are a number of manner compound verbs in which V1 represents the manner of motion and V2, the configuration or direction of the path of motion as well as the fact of motion; an example is *kake-agaru* ‘run up’, which is composed of *kake(ru)* ‘run’ and *agar(u)* ‘go-up’. There are also means compounds in which V1 represents the means of the causation of motion, and V2, the causation of motion as well as the fact and path of motion; an example is *oshi-ageru* (push-lift) ‘push up’.

## 10.2 Conditions on Lexicalization

### 10.2.1 Proposed Conditions

The constraints on lexicalization which I would like to argue for are tentatively stated in (7) (see also Goldberg 1995 for a related proposal).

(7) **Lexicalization Constraints:**

A main component event (represented by a higher semantic structure) and a subordinate component event (represented by a subordinate semantic structure; e.g., substructures representing manner, means, etc.) can be conflated in the meaning of a single predicate, only when (a) and (b) are both satisfied:

- (a) **Shared Participant Condition:** the two component events (semantic structures) share at least one participant; and

- (b) One of the following conditions is satisfied:
- (i) **Determinative Causation Condition:** one of the component event must be the only crucial cause of the other; or
  - (ii) **Coextensiveness Condition:** the main component event must be temporally coextensive with 1) the subordinate component event itself, or 2) its result or effect, or 3) an intention to execute or actualize it.

This formulation differs from that of Croft (1991), who states that only those component events that form a single causal chain can be lexicalized. The above condition is motivated by the observation that lexicalization can be licensed by other factors, such as temporal coextensiveness, coupled with causal notions such as result and effect and intentionality (see Croft 1991:291, note 15).<sup>4</sup>

The conditions stated in (7) are intended to be necessary conditions that must be satisfied by all semantically lexical verbs in human language, though different kinds of predicates (in different constructions) in different languages may be subject to additional conditions.

I have already discussed the Shared Participant Condition in Chapter 8 and the Determinative Causation Condition in Chapters 6 and 8. In this chapter I will be concerned with the Coextensiveness Condition and again with the Determinative Causation Condition.

### 10.2.2 Evidence from English Motion Verbs

To motivate and illustrate the conditions above, we turn first to English motion verbs. English verbs conflating manner of motion with the fact of motion respect the Coextensiveness Condition. For example, the verb *run* in (8) below requires that the manner of motion represented by this verb must be present all the way through the runner's (John's) motion through the hallway. The sentence is not true if John ran only part of the way in going through the hallway.

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<sup>4</sup>The Determinative Causation Condition might be reduced to the Coextensiveness Condition, in view of the fact that the effect of causation is necessarily co-extensive with a caused event (given that a caused event is a result of causation). The only problem that I see in this treatment is that the Coextensiveness Condition as it is formulated allows conflation of causing and caused events only when a main event is a causing event and a subordinate event is its result, whereas there are cases where the main event appears to be a caused event, as in cause compounds. A better understanding of what can be a main event in semantic structure might allow the reduction of the two conditions to one.

- (8) John ran through the hallway.

English has a rich pattern of conflating a manner of motion or some accompanying activity with the fact of motion in the meaning of motion verbs. One such example is seen in the *way* construction, exemplified in (9) (Jackendoff 1990, Marantz 1992, Goldberg 1995, 1996). Note that the rolling in (9a) is the manner as well as the cause of the motion, but the belching in (9b) is an accompanying activity which is not causally related to the motion.

- (9) a. The barrel rolled its way down the alley.  
b. John belched his way through the hallway.

Jackendoff (1990) observes that the actions accompanying the motion in this construction (e.g., rolling and belching in (9a) and (9b)) must be unbounded (see also Goldberg 1995, 1996). For this reason, he notes, belching in (9b) must be interpreted as a repetitive action. However, the real condition appears to be that this kind of action accompanying a motion must occur *throughout* the motion. That is, (9a) requires that the rolling have occurred throughout the change of location of the barrel described in this sentence. Similarly, (9b) requires that John repetitively belched throughout his way down the hallway.<sup>5</sup>

The same is true of sentences like (10), in which a non-motion verb is used to represent a motion (Talmy 1985).

- (10) John wore a green dress to the party.

In this example the fact of motion and the state that accompanies the motion are lexicalized into one verb. This case is also constrained by the Coextensiveness Condition: the state of wearing a green dress must continue throughout the motion described by the verb.

There are some English simplex verbs which semantically incorporate (conflate) the purpose of the motion. For example, consider the verb *chase*. This verb requires that the chaser have the intention of catching up with the chasee. (The verb *follow* differs in that it lacks this requirement.) This conflation is also subject to the Coextensiveness Condition: the intention must be present throughout the motion represented by the verb. Thus, sentence (11) is not true if John did not have the intention of catching up

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<sup>5</sup>Goldberg (1995) states that the manner reading of the *way* construction is marginal for many speakers, including herself. On the other hand, she notes attested manner examples like the following.

(i) She knitted her way across the Atlantic.

with Bill when he started running behind Bill at his house (but only decided later to catch up with him).

(11) John chased Bill from his house to the building.

There are also cases in which two component events are lexicalized because the effect of one event continues during the other component event. An example is the verb *leave* in (12), which can be paraphrased as ‘put and go away’.

(12) John left his suitcase on the desk.

Here again the Coextensiveness Condition applies. Sentence (12) is true only if the effect of putting his suitcase on the desk (e.g., the absence of the suitcase on his person) obtains when John moved away from the location. It would not be true if he re-picked up the suitcase before leaving the location.

The Determinative Causation Condition, too, is respected in English verbs in cases where the component events are causally related. An example of a causation of motion and a caused motion being lexicalized into one verb is given in (13).

(13) John kicked the ball up onto the roof.

An interesting observation has been made by Goldberg (1995) with regard to this kind of caused motion expression in English. She observes that English transitive sentences with a path PP require the path described by the PP to be determined solely by the causation of motion described by the verb. For example, (14a) and (15a) are acceptable; but (14b) and (15b) are not, because, she claims, here the entire path of motion is not likely to be determined solely by the action described by the verb. ((14b) is in fact acceptable in the reading in which John tapped the ball repetitively. This reading is licensed by the Coextensiveness Condition.)

(14) a. John tapped the golf ball into the hole.  
b. \*John tapped the ball down the incline.

(15) a. They laughed the poor guy out of the auditorium.  
b. \*They laughed the poor guy into his car.

This condition proposed by Goldberg is essentially a special case of the Determinative Causality Condition in which the caused event is motion.

Another relevant observation has been made with respect to the *way* construction in English. Jackendoff (1990) and Goldberg (1995, 1996) note that the verb in the *way* construction can represent not only an

accompanying action but also an event that causes (or results in) a motion event. Consider (16).

(16) John {lied / joked} his way into the meeting room.

This sentence means that John was allowed into the meeting room because of his lying or joking. The lying/joking and the motion need not be coextensive; rather, this case of lexicalization is licensed by the Determinative Causation Condition.

### 10.3 Semantic Constraints on Complex Motion Predicates and Compound Verbs

The conditions introduced above on the basis of English data on lexicalization are also respected by Japanese complex motion predicates and compound verbs.

#### 10.3.1 Participial Complex Motion Predicates

##### 10.3.1.1 Evidence for the Coextensiveness Condition

First, let us examine the meanings of participial complex motion predicates in relation to the Coextensiveness Condition. In the preceding chapter (sec. 9.5.2.2), I pointed out that participial complex motion predicates have four readings, i.e., resultative, progressive, iterative, and perfect, illustrated here in (17), (18), (19), and (20) together with their biclausal counterparts.

#### (17) RESULTATIVE

- a. Jon wa sono suutsukeesu o kooban ni motteitta.  
 John Top the suitcase Acc police.box Goal have went  
 'John brought the suitcase to the police box.'

- b. Jon wa [PRO (sukunaku to mo tochuu made wa)  
 John Top at.least halfway as.far.as Foc  
 [PRO sono suutsukeesu o motte] kooban ni itta.  
 the suitcase Acc take police.box Goal went  
 'Taking the suitcase with him (at least till the halfway point), John went to the police box.'

#### (18) PROGRESSIVE

- a. Jon wa kooen ni sono otoko shika otte ik-anakat-ta.  
 John Top park Goal the man chasego-Neg-Past  
 'John chased only the man to the park.'

- b. Jon wa [PRO (saisho no uchi wa sono otoko o otte )  
 John Top beginning Gen time Foc the man Acc chase  
 kooen ni it-ta.  
 park Goal go-Past  
 'John went to the park, chasing the man (at the beginning).'

(19) ITERATIVE

- a. Jon wa kooen ni sono booru shika kette ik-anakat-ta.  
 John Top park Goal the ball kick go-Neg-Past  
 'John dribbled only the ball to the park.'
- b. Jon wa [PRO sono booru o kette] kooen ni it-ta.  
 John Top the ball Acc kick park Goal go-Past  
 'Kicking the ball, John went to the park.'

(20) PERFECT

- a. Jon wa koko ni sono kiji shika yonde ko-nakat-ta.  
 John Top here Goal the article read come-Neg-Past  
 'John came here, having read only the article.'  
 ('He read only the article to come here.')
- b. Jon wa [PRO sono kiji o yonde] koko ni ki-ta.  
 John Top the article read here come-Past  
 '(After) reading the newspaper article, John came over.'

The participial verb in these complex motion predicates cannot represent the cause or purpose of motion. Therefore, these complex motion predicates are expected to satisfy the Coextensiveness Condition, if they are really one predicate. As briefly mentioned in 9.5.2.2, (17a) requires that the possession of the book, which is the result of the process denoted by the verb *motsu* 'take', must continue throughout motion. This required meaning of (17a) is consistent with the Coextensiveness Condition. The corresponding biclausal sentence (17b) is not subject to this condition.

Complex motion predicates in the progressive reading must also satisfy the Co-extensiveness Condition. (18a) can only mean that John chased the man throughout the motion: all the way to the park John must run with the intention of catching up with the man. The judgment on (18b), in this regard, is a subtle one, but to me (18b) is acceptable even if John did not continue to have such an intention (or even to run behind the man) all the way to the park. The relevance of the Co-extensiveness Condition in (19a) is slightly different. Since a single act of kicking cannot continue throughout the motion, the participial verb *kette* 'kick' is therefore interpreted as repetitive

to satisfy the condition: the kicking occurs iteratively throughout the motion (e.g., John dribbled). Note, again, that (19b) does not require such coextensiveness. Sentence (19b) is true when John kicked a ball once and then went to the park as well as when he kicked the ball repeatedly during the motion.

The relevance of the Coextensiveness Condition for complex motion predicates in the perfect reading (20a) is subtler than in the other readings. The perfect reading of *-te* here entails that some effect of the just completed action described by the verb remains on the referent of its subject NP, so that the just completed action continues to hold some relevance to the ensuing motion. The Coextensiveness Condition requires that this effect or relevance must be coextensive with the motion. The meaning of (20a) is consistent with this prediction: the effect of having read an article must be present throughout Taro's motion. In contrast, the two events in (20b) do not even have to be related.

In this regard, the semantics of the sentences in (21) is more telling.

- (21) a. Boku wa sukoshi shika nete ko-nakat-ta.  
           I Top little sleep come-Neg-Past  
           'I came, having slept only a little.'
- b. Boku wa sono hon shika soko ni oite ko-nakat-ta.  
           I Top the book there Loc put come-Neg-Past  
           'I came, leaving there only the book.'

(21a) can be uttered truthfully only when the speaker knows that at the time of arrival s/he was feeling the effects of having slept only a little. Similarly, (21b) can be uttered truthfully only when the speaker did not pick up the book, or else got it back only by some indirect means before arrival (cf. the case of English *leave* in (12) above).<sup>6</sup>

#### 10.3.1.2 More on Coextensiveness

We turn now to the discussion of what is exactly meant by "coextensiveness". So far, I have argued that the process, resulting state, or effect of the process which is denoted by the participial verb must be present throughout the motion. A question that one might consider here is whether the process, result, or effect of an event must actually begin and end with the start and end of motion, or whether it can begin before the

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<sup>6</sup>In one alternative analysis, the complex motion predicate involving the perfect reading is licensed because of the co-extensiveness of one event (e.g., reading in (20a) and the intention of motion. However, this cannot explain the cases like (21b), in which the subject did not have the intention of coming when placing the book.

beginning of the motion and/or end after the end of motion. I will argue that the Coextensiveness Condition simply requires that the combination of motion and accompanying activity or state should endure during the described motion, and that it is irrelevant to the meaning of a predicate what happens outside this period. For this reason, the condition does not *prevent* the accompanying activity or state from starting before the motion or continuing after the motion.

This point is illustrated by the following examples ((22) has already been discussed in Chapter 9 as example (36a)).

- (22) a. Taroo wa sono suutsukeesu o kooban ni motte itta.  
 Taro Top the suitcase Acc police.box Goal have went  
 'Taro brought the suitcase to the police box.'
- b. Taroo wa [PRO sono suutsukeesu o motte] kooban ni itta.  
 Taro Top the suitcase Acc take police.box Goal went  
 'Taking the suitcase with him, Taro went to the police box.'
- (23) a. Marii wa kawaii doresu o mise ni kite itta.  
 Mary Top pretty dress Acc shop Goal wear went  
 'Mary wore a pretty dress to the shop.'
- b. Marii wa [PRO kawaii doresu o kite] mise ni itta.  
 Mary Top pretty dress Acc put.on shop Goal went  
 'Mary went to the shop, wearing a pretty dress.'

What (22a) and (23a) asserts is that the state described by the participial verb holds till the subject reaches the goal; neither asserts that the state ends when the described motion ends (as a part of its meaning). The state of having a suitcase or wearing a dress can perfectly well continue after the motion stops. Sentence (23a) does not mean, for example, that Mary undressed once she got to the shop. (This is also true of the English translation of (23a).)<sup>7</sup>

However, both (22a) and (23a) do suggest a different point: the *significance* of the state described by the participial verb ends at the goal of the motion. (22a) suggests, for example, that Taro did something with the suitcase upon arriving at the police station, and (23a), that Mary's wearing a

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<sup>7</sup>The same can be said of the meaning of the verb *chase*. Sentence (i) only entails that the combination of John's motion and his intention of catching up with Bill continued till he got to the station; he might have continued to walk/run without such an intention after that.

(i) John chased Bill to the station.

pretty dress had something to do with her arrival at the shop (e.g., she wanted to show it to someone there). (Such a nuance is not conveyed by (22b) and (23b).) This implication is to be attributed to the very fact that the activity or state is conflated with the fact of motion. Obviously, in order for some particular accompanying activity or state to be conflated with the fact of motion, it must be salient enough to merit being singled out among all other accompanying states of the moving person. That is, it must be a significant part of the motion event. This significance, however, will be automatically in force only as long as the state is conflated with the fact of motion and is asserted to hold true by the predicate. This accounts for the implied ending of the accompanying state's significance in (22a) and (23a) above.

### 10.3.2 Purposive Complex Motion Predicates

The meanings of purposive complex motion predicates are similarly constrained by the Coextensiveness Condition. Here, what must be coextensive with the motion is the possession of a purpose or intention of doing some action rather than the intended action itself. This condition explains the contrast in (24).

- (24) a. Boku wa sono hannin o        koko ni    tsukamae ni kita.  
       I Top    the    criminal Acc   here Goal   arrest Pur    came  
       'I came here to arrest the criminal.'
- b. Boku wa [PRO (saisho no    uchi wa)    sono    hannin o  
       I Top                    at.first Gen   time Foc   the    criminal Acc  
       tsukamae ni] koko ni    kita  
       arrest Pur    here Goal   came  
       'I came here at first in order to arrest the criminal.'

The judgment is subtle, but (24a) is true only if the speaker has the intention (of arresting the criminal) continuously until reaching the goal, while (24b) can be true even when the speaker's initial intention ceases to exist en route.

### 10.3.3 Compound Verbs

#### 10.3.3.1 Evidence for the Coextensiveness Condition

The Coextensiveness Condition holds also for compound verbs of motion. Let us first consider manner compounds in which the first verb represents the manner of motion. Some compound verbs of this type are listed in (25).<sup>8</sup>

<sup>8</sup>This compounding process is not fully productive. There are no such compounds as \**aruki-agaru* (walk-go.up) or \**hai-saru* (crawl-leave).

(25)	<i>kake-agaru</i>	(run-go up)	'run-up'
	<i>kake-noboru</i>	(run-climb)	'run up'
	<i>kake-oriru</i>	(run-go.down)	'run down'
	<i>kake-mawaru</i>	(run-go.around)	'run about'
	<i>hai-agaru</i>	(crawl-go.up)	'crawl up'
	<i>hai-deru</i>	(crawl-go.out)	'crawl out'
	<i>aruki-mawaru</i>	(walk-go.around)	'walk around'
	<i>hashiri-mawaru</i>	(run-go.around)	'run about'
	<i>hashiri-saru</i>	(run-leave)	'run away'

In all of these cases, the manner of motion indicated by V1 must be coextensive with the motion represented by V2. For example, the verb *kake-agaru* 'run up' cannot be used to describe the motion as a whole if the moving person runs up only part of the way and walks up the rest.

There are also some manner compound verbs in which V1 represents a pre-action whose resulting state accompanies the causation of motion described by V2. There are two types of such compound verbs. The first includes such verbs as the following.

(26)	<i>mochi-ageru</i>	(take-lift)	'lift up in one's hands'
	<i>tsumami-ageru</i>	(hold.between.fingers-lift)	'pick up in one's fingers'
	<i>kakae-ageru</i>	(hold.in.one's.arms-lift)	'hold up in one's arms'

In these compounds, the result of the process denoted by the first verb of the compound represents the state of the causer of motion during the causation of motion. In all of these cases, V1 denotes some change in position of the hands and arms of a person, the result representing the various ways a person can support an object while causing it to move. (The verbs *motsu* 'take', *tsumamu* 'pick up', and *kakaeru* 'hold' are all action verbs, not stative verbs as the translations might suggest.) Thus, *tsumami-ageru* 'pick up in one's fingers' denotes the process of causing something to move up while holding it in one's fingers (the resulting state of the action denoted by *tsumamu* 'hold in one's fingers'). Note that the first verb does not denote an action that causes the object to move: it represents Manner, not Cause.

In these verbs, the manner in which a person supports the object must be coextensive with the causation of motion described by the second verb. Consider, for example, the verb *tsumami-ageru* (pick-lift) 'pick up in one's fingers' in (27).

- (27) Taro wa   ari o    yuka no   ue kara   tsumami-age-ta.  
       Taro Top   ant Acc floor Gen   top Src   pick-lift-Past  
       ‘Taro picked up an ant from the floor.’

This sentence is true only if Taro started holding the ant between his fingers when it was still on the floor; the state of holding between two fingers must be coextensive with the causation of motion (i.e., lifting). Since the causation of motion in this example is also coextensive with the caused motion (see next section), the accompanying state of the causer of motion in these examples is coextensive with both the causation of motion and the motion itself.

In the second type, the result of the process denoted by the first verb of the compound represents the state of the moved object during the causation of motion. An example is (28) below. (There are some speakers who do not accept this sentence.)

- (28) Jon wa    huton o    oshiire ni    marume-kon-da  
       John Top   futon Acc   closet Goal   roll-put.in-Past  
       ‘John rolled the futon mat and put it in a closet.’

For the compound verb in this example, what is coextensive with the causation of motion described by V2 is the state of the moved object resulting from the action denoted by V1. Thus, (28) requires that the futon mat must remain in the state of having been rolled up when put into the closet; the sentence is not true if John first rolled up the futon mat and then unrolled it before putting it into the closet.

### 10.3.3.2 Evidence for the Determinative Causation Condition

We next consider means compounds, where V1 represents a specific action that causes motion (i.e., means of causation), and V2, the causation of motion. The semantic nature of these verbs supports the Determinative Causation Condition as well as the Coextensiveness Condition.

Such compound verbs can be categorized into two groups, depending on the type of causation. As argued by Shibatani (1973a), McCawley (1976), Talmy (1976), Pinker (1989), and Jackendoff (1990), there are two major types of causation of motion, defined by the duration of causation relative to the duration of motion. These are what Shibatani calls ‘ballistic causation’ and ‘continuous causation’. (29a) and (29b) are examples in which ballistic causation and continuous causation are expressed by compound verbs.

- (29) a. Jon wa huusen o soko made keri-age-ta.  
 John Top balloon Acc there as.far.as kick-lift-Past.  
 'John kicked the balloon up there.'
- b. Karera wa kodomo o ana karahippari-age-ta.  
 they Top child Acc hole Src pull-lift-Past.  
 'They pulled up the child from the hole.'

Sentence (29a) is a case of ballistic causation, in which the motion is typically caused by the impact produced by an abrupt action that immediately precedes it. In this example, *keru* 'kick' specifies the particular action that causes the motion. This verb is compounded with the verb *ageru* 'lift', which denotes causation of motion but is unspecified as to the particular type of causing action (e.g., kicking, pulling, throwing). (29b) is a case of continuous causation, in which motion is typically caused by a continuous force that is applied throughout the motion. In this example, *hipparu* 'pull', which is compounded with *ageru* 'lift', represents the particular continuous action that causes the motion.

Compound verbs representing ballistically caused motion include those in (30a), and those representing continuously caused motion include those in (30b).

- |                           |                 |                        |
|---------------------------|-----------------|------------------------|
| (30) a. <i>nage-ageru</i> | (throw-lift)    | 'throw up'             |
| <i>keri-ageru</i>         | (kick-lift)     | 'kick up'              |
| <i>huki-ageru</i>         | (blow-lift)     | 'blow up'              |
| <i>uchi-ageru</i>         | (shoot-lift)    | 'shoot up'             |
| <i>tataki-otosu</i>       | (hit-drop)      | 'make fall by hitting' |
| <i>keri-otosu</i>         | (kick-drop)     | 'kick down'            |
| <i>ke-otosu</i>           | (kick-drop)     | 'kick down'            |
| <i>harai-otosu</i>        | (brush-drop)    | 'brush down'           |
| <i>huki-otosu</i>         | (blow-drop)     | 'blow down'            |
| <i>uchi-otosu</i>         | (shoot-drop)    | 'shoot down'           |
| <i>oshi-taosu</i>         | (push-topple)   | 'push down'            |
| <i>keri-taosu</i>         | (kick-topple)   | 'kick down'            |
| <i>huki-tobasu</i>        | (blow-fly)      | 'blow off'             |
| <i>keri-dasu</i>          | (kick-take.out) | 'kick out'             |
| <i>nage-komu</i>          | (throw-put.in)  | 'throw in'             |
| <i>keri-komu</i>          | (kick-put.in)   | 'kick in'              |

b. <i>hippari-ageru</i>	(pull-lift)	'pull up'
<i>hiki-ageru</i>	(pull-lift)	'pull up'
<i>oshi-ageru</i>	(push-lift)	'push up'
<i>tsuri-ageru</i>	(hang-lift)	'haul up'
<i>hiki-orosu</i>	(pull-lower)	'pull down'
<i>oshi-dasu</i>	(push-take.out)	'push out'
<i>hikizuri-dasu</i>	(drag-take.out)	'drag out'
<i>oshi-komu</i>	(push-put.in)	'push in'
<i>hiki-komu</i>	(pull-put.in)	'pull in'

As can be seen from this list, some verbs such as *ageru* 'lift', *dasu* 'take out', and *komu* 'put in' can serve as V2 in both ballistic and continuous causation of motion, depending on the nature of V1. Other verbs can only be used for one of the two types. For example, *orosu* 'lower' is restricted to continuous causation of downward motion, while *otosu* 'drop' is used only for ballistic causation of downward motion.

Consider how the temporal relationship between the causing action and the caused motion. In continuous causation verbs, the causation is coextensive with the motion. However, ballistic motion is clearly different: the causation precedes the motion. In this respect, the causation of motion presents a different pattern of lexicalization from that seen in the participial complex motion predicates and compound motion verbs discussed so far. Here the Coextensiveness Condition is not satisfied; the causation and the caused event can be conflated even though the causation of motion (i.e., main event) is not coextensive with the caused event (i.e., subordinate component event), nor with its result or effect, nor with the intention of executing it. Such a conflation is licensed by the Determinative Causation Condition.

The Determinative Causation Condition requires that an event which is conflated with a non-coextensive causing event must be caused solely as a result of the causing event (cf. sec. 6.6 above). That is, the entire motion must be directly and exclusively caused by the action represented by V1. This is in fact the case in ballistic causatives. For example, sentence (29a) above is unacceptable if the balloon moved halfway up due to John's kicking and then drifted up the rest of the way due to its natural buoyancy; in this case the upward motion as a whole would not be the direct and exclusive consequence of kicking. That is, (29a) requires that the entire movement of the balloon to the position designated by the goal argument must be ascribable to John's kicking.

The temporal relationships between causing and caused events seen above for ballistic and continuous causation are not the only cases possible.

Upon closer examination, other patterns can also be found. For example, consider (31a) and (31b).

- (31) a. Jon wa sono tori o uchi-otoshi-ta.  
 John Top the bird Acc shoot-drop-Past  
 'John shot the bird down.'
- b. Jon wa sono ishi o ana no oku kara  
 John Top the stone Acc hole Gen depth Src  
 soto ni hipari-dashi-ta.  
 outside Goal pull-take.out-Past  
 'John pulled out the stone from the depths of the hole.'

(31a) is true even when there is a pause between the shooting (causing event) and the falling of the bird (caused event)<sup>9</sup> e.g., the twigs of a tree might temporarily block the fall.<sup>9</sup> And (31b) can be used to describe a process whereby John pulls the stone continuously from deep inside the hole to near the mouth of the hole before giving it a final quick tug that makes it pop out of the hole. Both of these cases involve relatively complex temporal scenarios that go beyond a simple dichotomy of 'coextensive' vs. 'immediately precede'. The only conditions appear to be that 1) the causation event starts not later than the start of the caused event, and 2) the causation event ends not later than the end of the caused event.

This temporal restriction on causation is a constraint on what constitutes a well-formed semantic structure for causation, and not a constraint on lexicalization. It must be satisfied whether or not causing and caused events are lexicalized. Note in contrast that coextensiveness is a constraint on lexicalization, not a constraint on some particular semantic substructure; although most examples considered in relation to coextensiveness involve manner substructures, it is perfectly conceivable that a certain manner of motion might accompany only a part of the entire motion, but such a manner cannot be conflated with motion.

Thus, there is evidence showing that a complex semantic structure must satisfy the Coextensiveness Condition or the Determinative Causation Condition in order for it to be expressed as a complex motion predicate or a manner or means compound. The fact that these predicates are subject to

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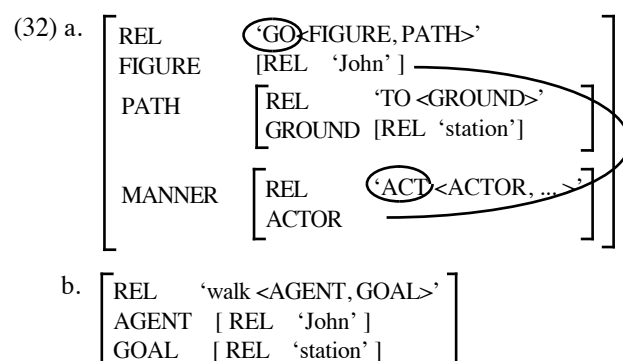
<sup>9</sup>This is a case of what Talmy (1976) calls 'enabling causation'. The shooting does not directly provide an impact that causes the falling; rather, it enables a free fall to take place by removing the bird's normal resistance to fall. In this case, too, the causing event (shooting) must determine the entire path of motion, and in this sense the Determinative Causation Condition is satisfied.

these conditions confirms the conclusion which was reached in Chapter 8 and 9: these predicates constitute a single predicate at argument structure.

### 10.4 The Formalization of Lexicalization Conditions

How one can formulate these conditions more explicitly? The answer to this question rests partially on an adequate understanding of what the semantic structure of a predicate is, and how a semantic structure is mapped onto an argument structure. In fact, the Co-extensiveness Condition and Determinative Causation Condition tell us much about what one should encode in the semantic structure of a predicate.

As argued at the beginning of this chapter, a constraint on lexicalization is a condition on the kind of semantic structures that can be mapped onto a single argument structure. Consider the semantic structure of the verb *walk* in the sentence *John walked to the station* in (32a) (cf. (2) above).



The verb *walk* maps the two semantic structures headed by 'GO' and 'ACT' onto a simplex argument structure. That is, the RELs 'GO' and 'ACT' circled in the semantic structure (32a) are mapped onto the REL 'walk' of the argument structure (32b). The notion of conflation can thus be defined as the merging of two or more semantic structures during the mapping process. I argue that this conflation is possible only when an embedded semantic structure (e.g., MANNER in (32a)) is "transparent" for the sake of mapping onto an argument structure. A transparent semantic structure is one that allows its REL and the REL of the immediately higher semantic structure to be jointly mapped onto a single REL in argument structure. A constraint on lexicalization can thus be understood as a constraint on transparent semantic structure.

In (32a) PATH is tentatively represented as consisting of a Path relation 'TO' and its GROUND argument (the object of *to*). The GROUND

argument represents an entity with reference to which the location of a FIGURE is defined (Talmy 1985).

#### 10.4.1 The Coextensiveness Condition

##### 10.4.1.1 The Representation of Time

The Coextensiveness Condition suggests that the notion of time is indispensable in stating the conditions on transparency of the semantic structure of a predicate. There are several ways in which a temporal relationship between component events represented by component semantic structures can be represented. Jackendoff (1987, 1990) and Pinker (1989) take the view that semantic representation includes a special tier on which temporal relationship is to be stated. The published versions of Jackendoff's work (1987, 1990) do not contain any concrete examples of how such a tier should be represented, but Pinker (1989) implements Jackendoff's intuition in the way shown below.

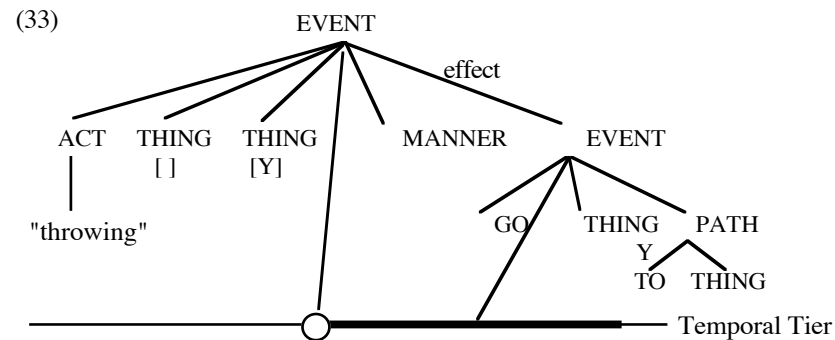


Figure (33) is the semantic structure of the verb *throw*, including its temporal tier. The causing event (act of throwing) is located at some point on the temporal tier, and its effect (the motion of the thrown object) is located in the region immediately following the causing event.

However, a temporal tier is not the only way to represent temporal information. In the semantic representation adopted in this book, temporal information can be represented as an additional attribute-value pair in a semantic structure. That is, a semantic structure can contain a TIME specification. The value of the TIME attribute may be a P(oint) or an I(nterval) (cf. Dowty 1979). In this chapter, I will label a Point with a single subscript (*i*, *j*, *k*, etc.), and an Interval with a combination of two subscripts (*i-j*, *j-k*, etc.).  $P_i$ , for example, refers to a point in time *i*, and  $I_{i-j}$  refers to the Interval between  $P_i$  and  $P_j$ . I will also stipulate the temporal relationship  $P_i > P_j > P_k > P_l$  (where  $P_i > P_j$  means that  $P_i$  temporally precedes  $P_j$ ).

The resultant semantic structure of the sentence *John walked to the station* is represented in (34) below. This semantic structure indicates that the motion occurs during the Interval between Point<sub>i</sub> and Point<sub>j</sub> (Interval<sub>i-j</sub>), and it also indicates that the particular manner of motion characteristic of *walk* also endures for the same interval.

$$(34) \left[ \begin{array}{l} \text{REL} \quad \text{'GO <FIGURE, PATH>'} \\ \text{FIGURE} \quad [ \text{REL} \quad \text{'John'} ] \\ \text{PATH} \quad \left[ \begin{array}{l} \text{REL} \quad \text{'TO <GROUND>'} \\ \text{GROUND} \quad [ \text{REL} \quad \text{'station'} ] \end{array} \right] \\ \text{TIME} \quad I_{i-j} \\ \text{MANNER} \quad \left[ \begin{array}{l} \text{REL} \quad \text{....} \\ \text{TIME} \quad I_{i-j} \end{array} \right] \end{array} \right]$$

#### 10.4.1.2 The Formulations of the Coextensiveness Condition

Given these assumptions, the Coextensiveness Condition can be stated as in (35).

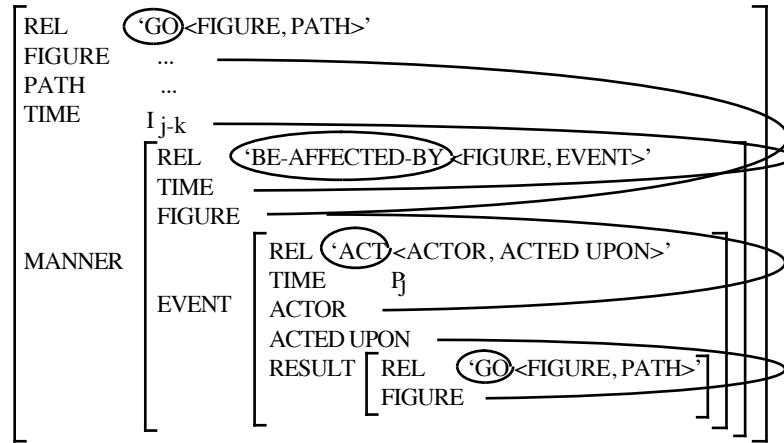
- (35) A semantic structure is transparent if it shares its TIME value with the immediately higher semantic structure.

This condition requires that the semantic structure (34) above should have the same TIME value for the fact of motion and for the action accompanying the motion (manner); this licenses the mapping of the upper semantic structure and the embedded MANNER structure onto a single argument structure of the verb *walk*.

Let us look at how this condition works for participial complex motion predicates. Representing the semantic structure for participial motion predicates in the progressive reading is relatively easy. The semantic structure for *aruite iku* (walk go) 'go walking', for example, would presumably be identical to (34), and accordingly the two RELs can be mapped onto one REL in argument structure.

Some elaboration is necessary to represent the meaning of complex motion predicates in the resultative reading, such as *motte iku* 'go having, bring', in which *motte* refers to the state resulting from a previous event. One way to represent a state resulting from an action is to posit a REL like 'BE-AFFECTED-BY'. To say, for example, John "IS-AFFECTED-BY" some event means that the event has left an effect on him, viz., the resultant state in which he now finds himself. For the complex predicate *motte iku*, this yields the semantic representation in (36).

(36)



In this semantic representation, the coextensiveness of the motion and the state of having a book is represented by the identical TIME value for 'GO' and 'BE-AFFECTED-BY'. The EVENT argument of 'BE-AFFECTED-BY' is the event described by the verb *motsu*; as (36) indicates in abbreviated form, this verb means, roughly speaking, that an actor acts on an object in such a way that the object moves into the actor's (physical) possession of the actor.

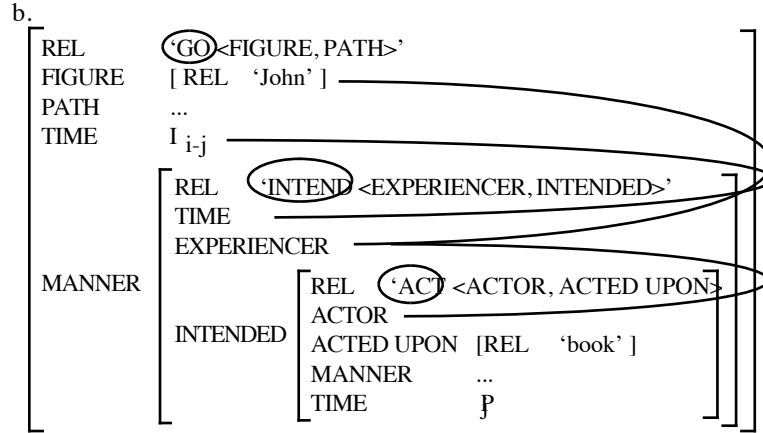
The verb *motte iku* conflates all of the circled RELs in the meaning of this verb. In part this conflation is licensed by the Coextensiveness Condition, which ensures the transparency of MANNER. The transparency of the EVENT argument of 'BE-AFFECTED-BY' must be licensed in an independent way. I claim that the EVENT argument of 'BE-AFFECTED-BY' is inherently transparent. (The conflation of the lower 'GO' relation is licensed by the satisfaction of the Determinative Causation Condition to be discussed below.)

In the case of purposive complex motion predicates and verbs like *chase*, the Coextensiveness Condition requires that the motion and the state of having a purpose must be coextensive. Thus, the semantic representation of sentence (37a) can be represented as (37b). I will leave open the issue of how the PATH is to be represented until Section 10.5.

(37)a. Jon wa hon o toshokan ni yomi ni itta.

John Top book Acc library Goal read Pur went

'John went to a library to read a book there.'



Here the identical TIME value of the 'GO' relation (representing motion) and the 'INTEND' relation (representing the possession of intention) licenses the conflation (lexicalization) of these two relations. The conflation of the 'ACT' relation (representing the act of reading) in the INTENDED argument with the upper relations 'GO' and 'INTEND' must be accounted for separately. This is done by positing (38):

(38) A semantic structure is transparent if it is the value of INTENDED.

(38) ensures that the INTENDED argument will be transparent irrespective of the temporal relationship between the TIME value of the 'INTEND' relation and that of the 'ACT' relation in the INTENDED argument.

#### 10.4.2 The Determinative Causation Condition

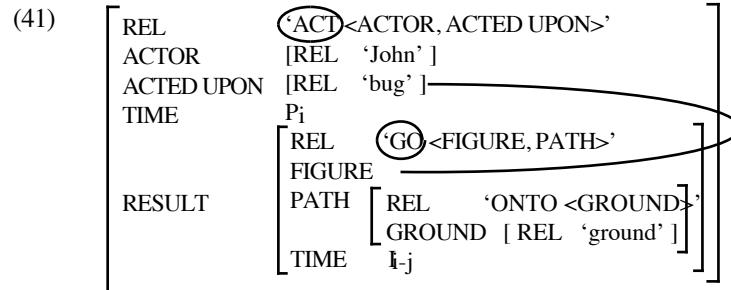
The statement of the Determinative Causation Condition requires some discussion as to how a cause-effect relationship should be encoded in the semantic structure. In the theory of semantic structure that is adopted in this book, cause-effect relationships are stated primarily in terms of a RESULT substructure embedded in a semantic structure that represents a causing event (see sec. 2.1.1). In other cases, as in cause compounds, a CAUSE substructure is embedded in a main semantic structure. On this view, the Determinative Causation Condition can be stated as follows.

(39) A semantic structure is transparent if it is the value of RESULT or CAUSE.

The application of (39) can be illustrated by the following sentence.

- (40) Jon wa mushi o jimen ni otoshi-ta.  
 John Top bug Acc ground Goal drop-Past  
 'John dropped a bug onto the ground.'

The semantic structure of this sentence would be represented as follows.

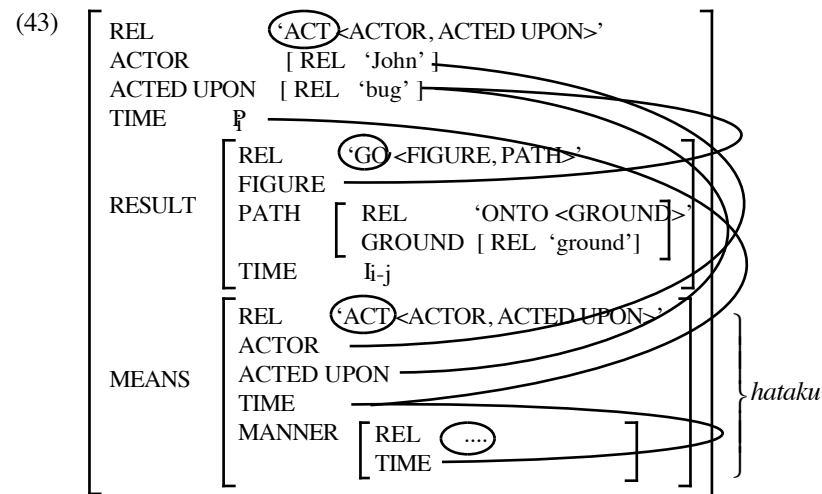


Because the RESULT substructure is transparent by (39), the upper ‘ACT’ relation and the embedded ‘GO’ relation can be lexicalized.

As pointed out in 8.1.5, means compound verbs specify the means of causation as the first verb of the compound, as in (42).

- (42) Jon wa sono mushi o hataki-otoshi-ta.  
 John Top the bug Acc slap-drop-Past  
 'John slapped the bug down.'

The semantic structure of (42) can be represented in (43).



In this semantic structure, the semantic structure of *hataku* ‘slap’ is embedded in the semantic structure of *otosu* ‘drop’ (cf. (41)) as the MEANS substructure (see 8.4). This compound verb lexicalizes all the circled relations. The MEANS substructure is transparent because of Coextensiveness, allowing its REL to be conflated with the main REL. (The MANNER substructure of *hataku* ‘slap’ is also transparent because of Coextensiveness, allowing its REL to be conflated with the upper REL in the MEANS substructure.)

## 10.5 Coextensiveness and Path Conflation

### 10.5.1 Cases of the Incorporation of a Path Relation

Some motion verbs conflate into their meanings Path relations such as ‘INTO’, as pointed out with respect to the verb *enter* in 10.1 above. In this section, I will argue that the same condition restricting the conflation of a Path relation in English simplex verbs also constrains the conflation of a Path relation in Japanese complex motion predicates. I will show that this condition is subsumed under the Coextensiveness Condition, once the semantic structure of PATH is properly understood.

#### 10.5.1.1 English Simplex Motion Verbs

There are several motion verbs in English that have a Path relation conflated into their meanings. The (a) sentences in (44) through (48) below provide some examples. They are given together with the (b) sentences, which are corresponding sentences in which the Path relations are not conflated but are separately expressed as prepositions.

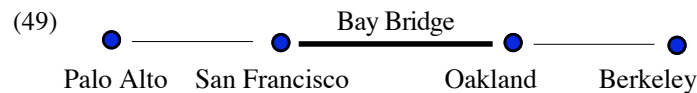
- (44) a. John passed Palo Alto (\*to San Francisco).  
b. John went past Palo Alto (to San Francisco).
- (45) a. John left San Francisco (\*to Los Angeles).  
b. John went from San Francisco (to Los Angeles).
- (46) a. John entered Green Library (\*out of Meyer Library).  
b. John went (out of Meyer Library) into Green Library.
- (47) a. John reached Tokyo (%from San Francisco).  
b. John went to Tokyo (from San Francisco).
- (48) a. John crossed the Bay Bridge (\*to a city far away).  
b. John went across the Bay Bridge (to a city far away).

One difference between a Path-incorporating verb and a non-incorporating verb concerns the possibility of expressing certain aspects of the path. The above sentences show that verbs that incorporate a Path relation are restricted in their ability to take certain other PPs. For example, the verb *pass* in (44a) above conflates the fact of motion and a complex Path relation that can be described by the preposition *past*. In this sentence the Goal PP *to San Francisco* cannot be added, even though it can be used in the corresponding example with the verb *go*.

The possibility of expressing unincorporated Path relations is a subtler matter than the above sentences might suggest. Sentences (44a), (45a), (46a), and (47a) represent a momentary process that the moving entity undergoes as a part of the entire travel. When the verb incorporating a Path relation represents this kind of a temporally non-extended process of motion, there is no possibility of expressing other sections of the entire path of travel.<sup>10</sup>

On the other hand, sentence (48a) represents a temporally extended process (note that *the Bay Bridge*, which is the GROUND argument of the incorporated relation, represents an elongated entity that needs some time to cross). When the verb incorporating a Path relation represents this kind of temporally extended motion, a Source and Goal PP can be expressed if they represent the locations that constitute the end points of the referent of the GROUND argument. A Source and Goal PP can be expressed in a sentence like (48a) above, for example, if they represent the ends of the bridge described.

Examples involving such spatial distinctions must make reference to geographical entities whose locations are clearly understood. In the several of the coming examples in this section I will refer to four city names  $\lambda$  Palo Alto, San Francisco, Oakland, and Berkeley  $\lambda$  which are laid out on the map according to the following spatial schema.



<sup>10</sup>One exception to this generalization comes from the sentences like the following.

(i) John entered Green Library from Meyer Library.

This sentence is acceptable if the two libraries are spatially adjacent and one can enter Green Library directly from Meyer Library. This suggests that Source is expressible with a momentary verb of motion if it represents a location occupied by the moving entity *immediately* before it undergoes the change denoted by the verb.

Given this schema, the following sentence is acceptable.

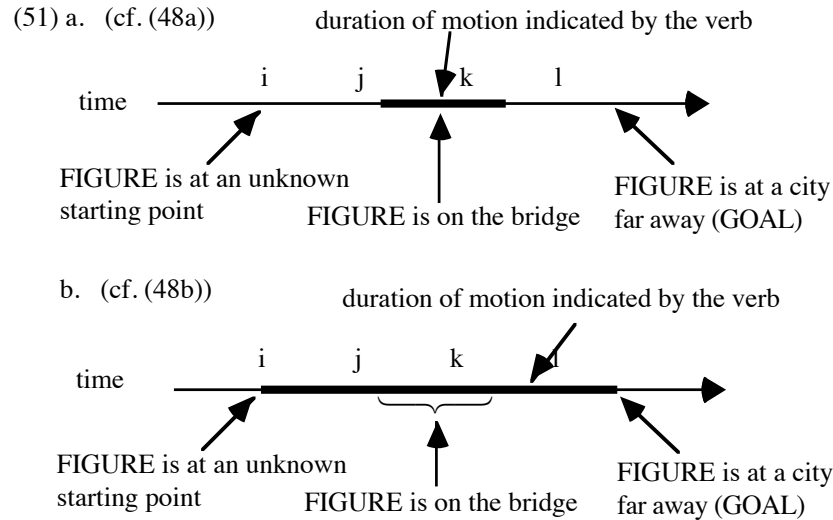
(50) John crossed the Bay Bridge from San Francisco to Oakland.

Thus English verbs that incorporate a Path relation can only have an unincorporated Goal or Source relation expressed as a PP argument if the verb represents a temporally extended process and the PP denotes a location that represent one end of the GROUND of the incorporated Path relation.

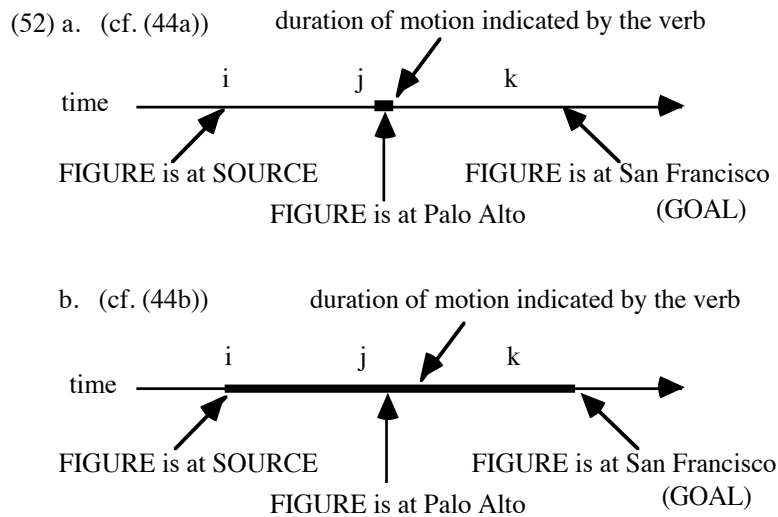
This phenomenon is related to the fact that the GROUND argument in a sentence like (48a) represents an “incremental theme” (Dowty 1991, Tenny 1994), i.e., a theme which “measures out” an event (motion in (48a)). Given that it measures out the motion, the motion cannot extend beyond the referent of the NP. Therefore the goal or “terminus” of motion represented by the goal PP can only be located at an end of the GROUND. (By contrast, examples like (44) through (47) do not involve incremental themes.)

I argue that the Coextensiveness Condition above can be extended to subsume the restriction just described. What must be coextensive in (48a) above, for example, are the time during which the moving person (FIGURE) moves from the Source to the Goal and the time during which he or she occupies a location on the GROUND of the incorporated Path relation.

This point can perhaps be more readily seen by the diagrams in (51). In (48b) the verb *go* represents a motion enduring for the period indicated by the thick line in (51b); in particular, the motion can include a piece before and/or after the bridge crossing. When the Path relation ‘across’ is incorporated in the verb *cross*, on the other hand, as in (48a), the duration of the motion expressed by the verb must be coextensive with the period during which the Figure occupies a location on the bridge. Therefore, the only locations that can serve as Source and Goal are those at which the Figure is situated at Times  $t_j$  and  $t_k$  in (51a).



In the case of (44a), by contrast, the incorporation of the Path relation ‘past’ creates a punctual verb *pass*, as shown in (52a). Therefore it is not possible to specify Source and Goal, since these are the initial and terminating points in a temporally *extended* process of motion. The duration of motion described in (44b) is indicated in (52b).



There are two kinds of apparent counterexamples to this condition, exemplified by (53a) and (53b).

- (53) a. John approached San Francisco from Tokyo.  
b. John arrived in Tokyo from San Francisco.

(53a) might seem a counterexample, in the sense that the verb *approach* might be regarded as incorporating a Goal relation, and yet have a Source argument whose referent is not spatially located at one end of the GROUND of the incorporated Path relation (i.e., San Francisco). However, note that the object NP of *approach* is not a Goal: (53a) does not entail that John reached San Francisco. What is incorporated in the meaning of *approach* is the direction of motion. In fact, this directionality of motion starts when the moving entity leaves Tokyo; hence the Source PP does represent the starting point of the incorporated process.

The verb *arrive* in (53b) can be regarded as incorporating a Path relation in the sense that a preposition *to* is not used (see note 11 below for the nature of this incorporation), but it takes a *from*-PP that clearly indicates the Source of motion. This PP, however, does not seem to be an argument, as can be seen from the anaphoric *do so* test. The anaphoric *do so* can replace a predicate and its arguments, but not its adjuncts (Lakoff & Ross 1966, Jackendoff 1977). Accordingly, the contrast between (54a) and (54b) suggests that the *from*-PP is an adjunct, while the *in*-PP is an argument. (That (54a) is less than fully acceptable seems to be due to the violation of the agentivity requirement on the subject of *do so*.)

- (54) a. (?)John arrived in Tokyo from San Francisco, but Mary did so from New York.  
b. \*John arrived in Tokyo from San Francisco, but Mary did so in Osaka.

The same holds of the *from*-PP in (47a) for those speakers who accept the use of the *from*-PP in this sentence. Thus, the above conditions on incorporability appear to be conditions that apply to *arguments*.

#### 10.5.1.2 English Complex Motion Verbs

The same condition holds of English complex verbs consisting of an intransitive verb and a preposition. It has been pointed out that the combination of an intransitive verb and a preposition functions together as a single predicate, at least under certain circumstances. For example, *walk under* can be passivized if the object of *under* (the GROUND argument of *under*) is somehow interpretable as being affected by the action (Bolinger 1977). (55b) is an example of this.

- (55) a. Generations of lovers have walked under the bridge.  
b. The bridge has been walked under by generations of lovers.

This possibility of passivization suggests that *walk under* in (55b) functions as one predicate. Interestingly, when a complex verb like *walk under* is passivized, the Goal of the motion cannot be expressed unless it is spatially located at the end of the referent of the GROUND object of the preposition. For example, consider the passivization of the complex verb *walk over* in (56).

- (56) a. No mayor has ever walked over it (= the Bay Bridge) to Berkeley.  
 b. It has never been walked over by any mayor.  
 c. \*It has never been walked over to Berkeley by any mayor.

Sentence (56c) could only be acceptable if Berkeley were located (as it is not) at the end of the Bay Bridge.<sup>11</sup>

#### 10.5.1.3 Japanese Simplex Motion Verbs

The same condition applies to Japanese simplex verbs like *wataru* 'cross'. These simplex verbs cannot have a Source or a Goal that is not located at the ends of the referent of the GROUND argument of these verbs, as shown by (57).

- (57) a. \*Jon wa Bei Burijji o Paro Aruto kara Baakuree ni watatta.  
 John Top Bay Bridge Acc Palo Alto Src Berkeley Goal crossed  
 'John crossed the Bay Bridge from Palo Alto to Berkeley.'  
 (intended)  
 b. Jon wa Bei Burijji o San Furanshisuko kara  
 John Top Bay Bridge Acc San Francisco Src  
 Ookurando ni watatta.  
 Oakland Goal crossed  
 'John crossed the Bay Bridge from San Francisco to Oakland.'

In this case, too, the duration of the motion (from Source to Goal) and the duration of the period in which John is on the bridge must be coextensive.

#### 10.5.1.4 Japanese Participial Complex Motion Predicates

Japanese complex motion predicates incorporating a Path relation are subject to the same condition. Consider the sentences in (58) and (59). The (a) sentences are biclausal sentences, while the (b) sentences are supposed to be complex motion predicates.

<sup>11</sup>Complex verbs like *walk under* in (55) and (56) above are sometimes treated as involving restructuring. It is not clear to me, however, how such a restructuring account could explain the above restriction on the expressibility of Source and Goal.

- (58) a. Jon wa [PRO San Furanshisuko no mannaka o tootte]  
 John Top San Francisco Gen center Acc go.through  
 Ookurando ni itta.  
 Oakland Goal went  
 'John went to Oakland, going through the center of San Francisco.'
- b.\*Jon wa San Furanshisuko no mannaka o Ookurando ni  
 John Top San Francisco Gen center Acc Oakland Goal  
 tootte itta.  
 go.through went  
 'John went through the center of San Francisco to Oakland.'  
 (intended)
- (59) a. Jon wa [PRO Bei Burijji o watatte] Baakuree ni itta.  
 John Top Bay Bridge Acc cross Berkeley Goal went  
 'Crossing the Bay Bridge, John went to Berkeley.'
- b.\*Jon wa Bei Burijji o Baakuree ni watatte itta.  
 John Top Bay Bridge Acc Berkeley Goal cross went  
 'John went across the Bay Bridge to Berkeley.' (intended)

The (b) sentences above, which involve complex motion predicates with the Goal of motion, are unacceptable, while their biclausal counterparts (the (a) sentences) are acceptable.

The unacceptability of the (b) sentences can again be explained by the Coextensiveness Condition. The time during which John is moving from Source to Goal must be coextensive with the time during which John occupies a location on the GROUND of the participial verb (e.g., the bridge in (59)). Neither (58b) nor (59b) can be interpreted in a way that satisfies this condition, given the geography assumed here.

This account predicts that the Source and Goal of motion *can* be expressed in sentences like (59b) if they are located at the ends of the GROUND of the participial verb. This is in fact true, as shown in (60).

- (60) Jon wa Bei Burijji o San Furanshisuko kara Ookurando ni  
 John Top Bay Bridge Acc San Francisco from Oakland Goal  
 watatte itta.  
 cross went  
 'John crossed the Bay Bridge from San Francisco to Oakland.'

In the present account, the generalization that Source and Goal must be the ends of the GROUND of a participial verb in participial complex motion predicates is not an independent condition that must be posited as such, but is rather a consequence of the Coextensiveness Condition. This analysis receives support from an examination of purposive complex motion predicates. Purposive complex motion predicates apparently exhibit a different pattern of conflating motion and Path. Unlike participial complex motion predicates, for which Source and Goal must be the ends of the GROUND, purposive complex predicates allow sentences like (61) below, in which the Source (Pal Alto) does not represent one end of the GROUND (the Bay Bridge), and the Goal (San Francisco) represents the location at which the trip over the bridge *begins*.

- (61) Jon wa    Bei Burijji o    Paro Aruto kara  
       John Top Bay Bridge Acc Palo Alto Src  
       San Furanshisuko ni watari ni itta.  
       San Francisco Goal cross Pur went  
       ‘John went from Palo Alto to San Francisco to cross the Bay Bridge.’

This pattern can be explained by the Coextensiveness Condition as it applies to purposive complex motion predicates. As pointed out above (sec. 10.3.2), purposive complex motion predicates satisfy the Coextensiveness Condition in terms of the coextensiveness of the motion and the intention of executing an action, rather than of the motion and the intended action itself. In (61), the duration of the possession of a purpose (viz., intention to cross the Bay Bridge) and the duration of the motion (from Palo Alto to San Francisco) are identical, satisfying the Coextensiveness Condition. Thus, the duration of the intended action, i.e., the period during which the moving person is located on the GROUND of the purposive verb, can be different from the duration of the motion from the Source to the Goal in (61). Therefore, the Source and the Goal are not required to be the ends of the GROUND in these cases. The above consideration shows that the real condition on path conflation is the Coextensiveness Condition, and not the relative location of Source and Goal with respect to the GROUND of a participial or purposive verb.

### 10.5.2 The Semantic Representation of PATH

Any statement about the precise way the Coextensiveness Condition works as regards the incorporation of a Path relation requires an understanding of how PATH should be represented in semantic structure.

*10.5.2.1 Some Previous Proposals*

In the literature there have been two main views on how PATH should be represented. The representation of PATH requires a statement about Source, Goal, and intermediate locations. These notions can either be treated as primitives, or else can be defined as locations at which the moving entity is situated at a given time (e.g., the Goal is the location at which the moving entity is situated at the end of motion). The former option is adopted by Gruber (1976), Kageyama (1980a), Jackendoff (1983, 1990), and others (but see Jackendoff 1996). Jackendoff (1983, 1990), for example, claims that the function 'GO' takes PATH as an argument, where PATH consists of one or more Path functions (=Path relations; i.e., FROM, VIA, TO, TOWARD, and AWAY FROM) and their arguments (=GROUNDS). For example, the semantic structure of sentence (62a) can be represented as (62b). Note that here a city is treated as a "Thing" argument of a Path function.

(62)a. John went from Tokyo via Hawaii to San Francisco.

b.

[Event GO ([ Thing John],	<div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">FROM ([ Thing Tokyo])</div>  <div style="display: inline-block; vertical-align: middle;">VIA ([ Thing Hawaii])</div>  <div style="display: inline-block; vertical-align: middle;">TO ([ Thing San Francisco])</div>  <div style="display: inline-block; vertical-align: middle;">Path</div> </div>	)]
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One disadvantage of this view is that it cannot specify the temporal (spatial) relationship between two or more co-occurring VIA functions (i.e., between two or more intermediate locations). For example, consider the following sentence.

(63) John went from San Francisco, across the Bay, through the Valley, to Yosemite.

This sentence involves two VIA functions, whose interpretation is temporally restricted: John necessarily crossed the Bay before he went through the Valley. Such a temporal order cannot be represented in the above account.

Dowty (1979), on the other hand, adopts the view that Source and Goal are to be represented in terms of the location at which the moving entity is located at a certain time (see also Jackendoff 1996). Working in the framework of truth functional semantics, he proposes that sentence (64a) entails the proposition in (64b).

(64) a. John walked from Boston to Detroit.

b. [walk' (*j*) AND BECOME ~be-at' (*j*, *b*) AND BECOME be-at' (*j*, *d*)]

(where *j* = John, *b* = Boston, *d* = Detroit)

The time relationship between the departure from Boston and the arrival in Detroit in this sentence can be expressed by Cresswell's (1977) notion of AND, which essentially means "and then". This view is superior to Jackendoff's in that the inference of (65) from (64a) naturally follows from the representation in (64b).

(65) John was at Detroit at the end of the journey.

However, the time relationship that must be represented in the semantic representation of motion can be much more elaborate than that captured by the conjunction AND. Consider the following sentence.

(66) John went across the mountain range through the tunnel.

The most plausible interpretation of this sentence is that the time John was in the tunnel is a subportion of the interval during which John was crossing the mountain range. Such temporal relationships call for a more highly elaborated temporal specification.

Some other aspects of Jackendoff's (1983, 1990) analysis of the Path function are more insightful than Dowty's. Jackendoff proposes that the Path functions FROM, VIA, and TO can take Place as well as Thing as their argument (cf. (62b)). Place can then be expanded into a Place function (e.g., UNDER, IN, ON) and Thing. This analysis enables one to analyze the complex semantic structure of phrases like those in (67) as (68) (cf. Gruber 1976).<sup>12</sup>

(67) a. from under the table  
b. into the room

(68) a. [Path FROM ([Place UNDER ([Thing TABLE]))])]  
b. [Path TO ([Place IN ([Thing ROOM]))])]

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<sup>12</sup>This separation of the Path relation and the Location (Place) relation provides an elegant way of capturing the different conflation patterns of the verbs *reach*, *arrive*, and *get*. Consider the sentences in (i), in which these verbs are used to represent the Figure's arrival at the Goal.

- (i) a. John reached the airport.  
b. John arrived at the airport.  
c. John got to the airport.

These three verbs conflate the GO relation with different relations. The semantic structure of the airport as a Goal can be represented as (ii). The verb *reach* incorporates both TO and AT; *arrive*, only TO; and *get*, neither one.

(ii) [Path TO ([Place AT ([Thing the airport]))])]

The separation of Path relations and Location (Place) relations receives further support from expressions of location in Japanese. Japanese postpositions can express Jackendoff's Path functions (e.g., *ni* 'to', *kara* 'from'), but not Place functions: Place functions are expressed by nominals such as *naka* 'inside', *shita* 'the space under (something)', *chikaku* 'the space near (something)', *soto* 'outside', etc. (see Yamada 1981). For example, the Japanese equivalents of (67a) and (67b) would be (69a) and (69b).

- (69) a. *tsukue no shita kara*  
table Gen space.below from  
'from under the table'
- b. *heya no naka ni*  
room Gen inside Goal  
'into the room'

(68b) can be contrasted with the treatment of *to Tokyo* in (62); in this case Jackendoff claims that no Place function is involved. One can, however, envision an alternative treatment in which a Place function AT is involved in such a case (i.e., [Path TO [Place AT [Thing TOKYO]]]) (see Gruber 1976). I will adopt this analysis below.

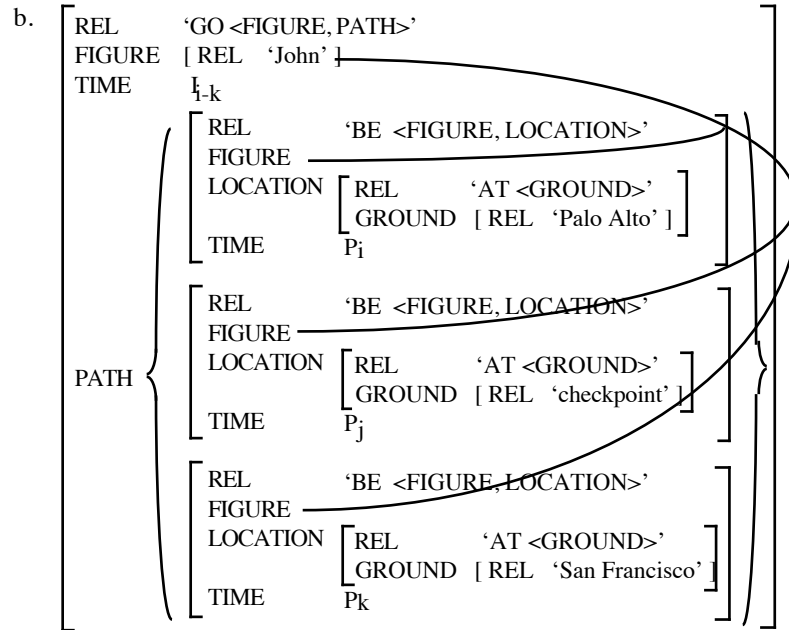
#### 10.5.2.2 Proposed Representation of PATH

I propose that the semantic structure of PATH should be represented as follows. Like Jackendoff, I recognize PATH as an argument of 'GO', but like Dowty, I will represent Source and Goal in terms of a relation 'BE' which specifies the location at which the Figure is situated at a certain time. Unlike Dowty, I indicate this location in terms of the TIME value associated with 'BE'. In this view, Source is represented as the location at which the Figure is situated at the initial TIME value of 'GO', and Goal is defined as the location at which the Figure is situated at the terminating TIME value of 'GO' (see also Jackendoff 1996 for a similar treatment). Jackendoff's VIA functions are represented as involving locations at which the Figure is situated at any point or during any subinterval of the TIME value of the upstairs 'GO'. For example, if 'GO' has the TIME value of  $I_{i-k}$ , a PATH argument having the TIME value of  $P_i$  represents the Source of the motion, a PATH argument whose TIME value is any Point or Interval between  $P_i$  and  $P_k$  (e.g.,  $I_{j-k}$ ,  $P_j$ , etc.) represents a VIA relation, and a PATH argument whose TIME value is  $P_k$  represents the Goal of the motion.

The semantic representation of sentence (70a), accordingly, will be (70b) (on the assumption that "the checkpoint" is located at a place between

Palo Alto and San Francisco). The topmost of the three PATH arguments represents Source, the middle, VIA, and the bottom, Goal.

(70) a. John went from Palo Alto past the checkpoint to San Francisco.



Here, following Jackendoff, I am adopting the view that Path relations ('BE' with a certain TIME value) and Location relations ('IN', 'ON', 'UNDER', 'NEAR', etc.) are represented separately. Unlike Jackendoff, however, who claims that a Path function can have a Thing as its value (as in *to Tokyo*), I claim that in such a case a Location relation 'AT' is involved, as in (70b). The TIME value of 'BE' in a PATH argument is a Point if the related Location relation is 'AT', and is an Interval if the related Location relation is 'IN', 'ON', 'UNDER', 'NEAR', etc. This distinction captures the intuition that prepositions that involve the relation AT (e.g., *to Tokyo*) treat their GROUND argument as a point, and those that involve other relations (e.g., *through the forest*), as a region that needs some time to travel.

In this view, there are no such primitive relations as FROM, VIA, and TO. However, for ease of exposition, I will continue to use expressions like the FROM and TO relations to refer to the relation 'BE' in a PATH argument that has the appropriate TIME value.,.

The temporal definition of the FROM and TO relations crucially presupposes an Interval as the TIME value of the upstairs 'GO'. This means that Source and Goal cannot be expressed when the upstairs 'GO' relation has a Point rather than an Interval as its TIME value.

This temporal definition of the FROM, VIA, and TO relations explains the following difference between FROM and TO on the one hand and VIA on the other. Consider sentences in (71).

- (71) a. \*John went from San Francisco, across the Bay, through the Valley, over the mountains, across the desert, to Las Vegas.  
b. John went from Palo Alto to San Francisco, from San Francisco to Berkeley.  
c. John went from Palo Alto to San Francisco to Berkeley.  
d. \*John went from Palo Alto from San Francisco to Berkeley.

(71a) and (71c) show that a given motion can have only one FROM relation but it can have an infinite number of VIA relations. (71b) shows that more than one TO relation can be expressed; this sentence, however, is acceptable only in the reading in which the trip has more than one leg, and each leg has a single Goal. In this sense TO is similar to FROM in that only one TO relation can be expressed in one (leg of a) trip.<sup>13</sup>

In the present account, the FROM and TO relations are defined as the moving entity's location at the initial and terminating points of the TIME value of 'GO'. Given that an entity can occupy only one location at a given time, it follows from this definition that any one instance of motion can have only one FROM or TO relation. By contrast, since VIA relations are defined in terms of the moving entity's location at *any* point or subinterval of the time value of the upstairs 'GO', there can be an infinite number of VIA relations in the expression of one motion.

Note that the TIME value of a VIA relation does not have to be a *proper* subinterval of the TIME value of the upstairs 'GO'. In the following sentence, the TIME value of 'GO' and that of 'BE' in the Path relation can be identical (i.e., the boat started its motion on one side of the Pacific and ended it on the other).

- (72) The boat went across the Pacific.

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<sup>13</sup>In Japanese, such a multiple occurrence of Goal is impossible.

### 10.5.3 An Account of Path Conflation

#### 10.5.3.1 Coextensiveness and Path Conflation

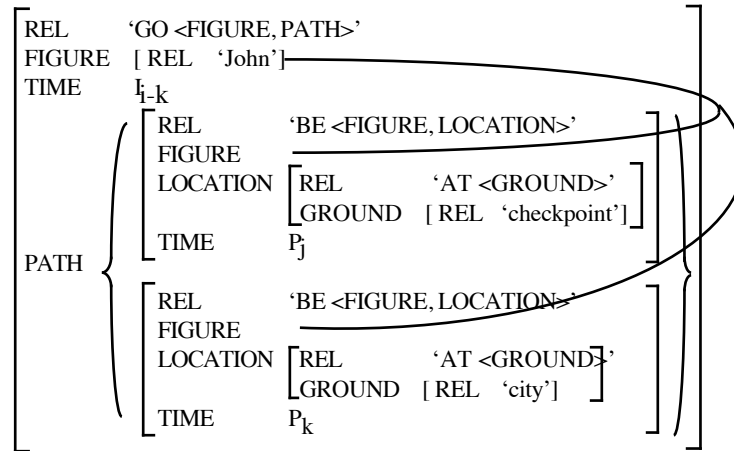
Given the semantic representation introduced above, one can state more clearly the nature of the conflation of Path relations into the meaning of a motion verb. I will suggest that the Coextensiveness Condition applies to the TIME values of the relation 'GO' and of the incorporated relation 'BE' in the PATH argument, and that this condition constrains the possibility of expressing unincorporated aspects of PATH as a PP argument.

Let us first take English verbs by way of illustration. Verbs like *cross* and *pass* can be defined as conflating 'GO' in the upstairs structure and 'BE' in a PATH argument, and in some cases Location relations as well. Jackendoff (1990) states that *pass* incorporates 'GO' and a Path relation VIA, and in addition, optionally, a Location relation NEAR. Consider now sentences (73a) and (73b).

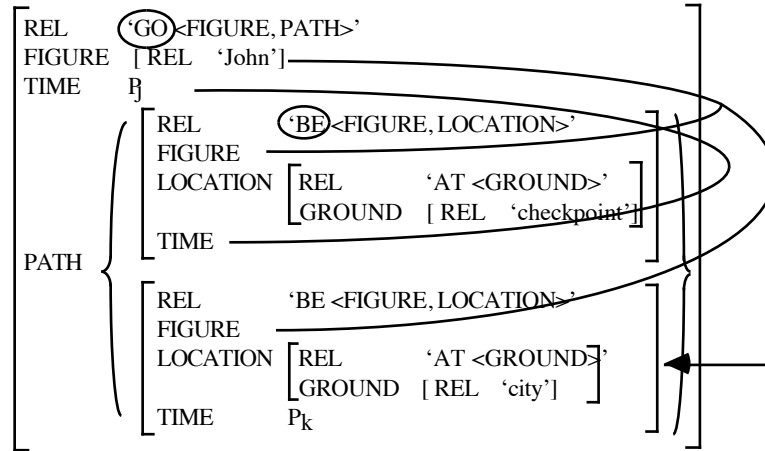
- (73) a. John went past a checkpoint to the city.  
b. John passed a checkpoint (\*to the city).

The semantic structures of (73a) and (73b) would be (74a) and (74b), respectively. ((74b) contains the semantic structure of the goal PP *to the city* (indicated by the arrow). This is to show how the presence of this PP results in ungrammaticality. (74) is well-formed only when this substructure is removed.)

(74) a.



b.



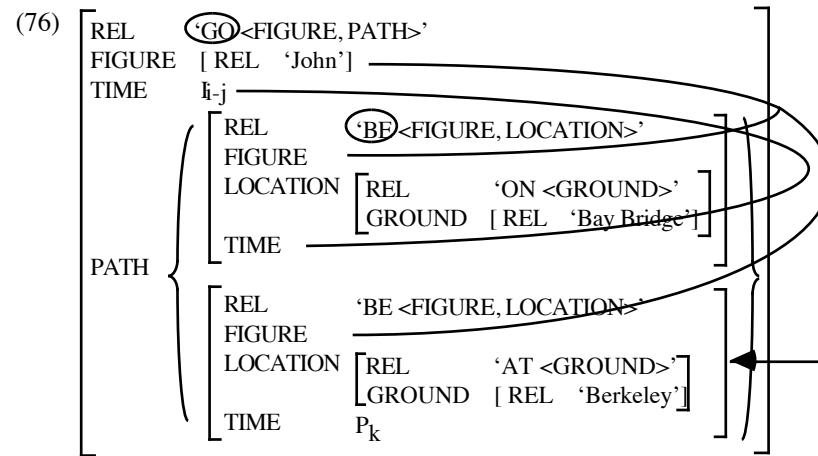
In (74a), the motion started at  $P_i$ , was continuing at  $P_j$  (when John was at the checkpoint), and ended at  $P_k$  (when he arrived in the city). Sentence (73a) does not involve any conflation of a Path relation with 'GO', and therefore no TIME value of any PATH argument has to be identical with the TIME value of 'GO'. In (73b), the verb *pass* conflates 'GO' with the 'BE' in the PATH substructure that involves the GROUND 'checkpoint'. This conflation of 'GO' and 'BE' requires that the TIME values of the two relations be identical; the TIME value of 'GO' in (74b) must be the same  $P_j$  that the embedded 'BE' has. (Thus, *pass* represents a momentary process.) This makes it impossible to have any additional Goal argument, such as *to the city* in (73b), since that would require that the TIME value of the 'GO' relation be an Interval ( $I_{j-k}$ ).

Japanese verbs like *wataru* 'cross', *yokogiru* 'traverse', and *tooru* 'pass', and the participial complex motion predicates formed from these verbs and *iku*, can be explained in the same way. Kageyama (1980a) claims that verbs like *wataru* and *yokogiru* conflate the relation 'GO' (Kageyama's MOVE) and the Path relation VIA, with the meanings of these verbs distinguished by further restrictions on the nature of the argument of VIA. The verb *tooru* 'pass' is the most general of these verbs, conflating 'GO' and VIA with no further restriction on the argument of VIA; the verb *wataru*, on the other hand, imposes certain restrictions on the argument of VIA, which I will not be concerned with here.

An illustrative example is (75).

- (75) Jon wa Bei Burijji o (\*Baakuree ni) watatta.  
 John Top Bay Bridge Acc Berkeley Goal crossed  
 'John crossed the Bay Bridge (\*to Berkeley).'

The semantic structure of (75) is represented as (76). (76) includes the semantic structure of the Goal PP *Baakuree ni* (indicated by an arrow); it is well-formed only when this substructure is removed. (The semantic structure of a sentence involving a participial complex motion predicate *watatte iku* is essentially the same. The major difference between *wataru* and *watatte iku* lies in the gradualness of change. See Matsumoto 1996b.)



Because of the Coextensiveness Condition, the TIME value of the topmost 'BE' in the PATH argument, which is conflated into the meaning of *wataru*, must be identical with the TIME value of the upstairs 'GO' ( $I_{i-j}$ ), since this Path relation is incorporated in the meaning of *wataru*. If a Goal PP is to be added in (75), it must have the TIME value of  $P_j$ , given this TIME value of the upstairs 'GO'. For this reason, the PP *Baakuree ni* 'to Berkeley' cannot occur in (75), since it is given the TIME value of  $P_k$ , not  $P_j$ , as indicated in (76), given the geography assumed.

#### 10.5.3.2 Independent Evidence for TIME Values

Is there any independent evidence to support the above difference in temporal structure between Path-incorporating predicates and their non-incorporating counterparts? Such evidence can be obtained by examining the kinds of temporal expressions that can accompany these predicates.

One test which can be used to identify the initial value of the Interval of 'GO' is the interpretation of an accompanying time adverbial when the beginning or end of the motion is expressed. Compare (77a) and (77b).

- (77) a. Juu-ji ni Jon wa (soko kara) [PRO hashi o watatte]  
 ten Loc John Top there Src bridge Acc cross  
 Baakuree ni iki-hajime-ta.  
 Berkeley Goal go-begin-Past  
 ‘At ten, John began to go (from there) to Berkeley, crossing a bridge.’
- b. Juu-ji ni hashi o Jon wa watatte iki-hajime-ta.  
 ten Loc bridge Acc John Top cross go-begin-Past  
 ‘At ten, John began to cross a bridge.’

There is a difference in the temporal interpretation of (77a) and (77b). (77b) requires John to be at the starting end of the bridge at ten, while (77a) allows the possibility of John being somewhere away from the bridge at that time, from which place he proceeded to the bridge and thence to Berkeley. This observation supports the view that the TIME value of ‘GO’ and that of ‘BE’ (for John’s being on the bridge) in (77a) are not identical (i.e., not coextensive), while these two values are identical in (77b).

The same is true of the analogous English sentences (78a) and (78b).

- (78) a. At ten, John began to go (to Berkeley) across the bridge .  
 b. At ten, John began to cross the bridge.

(78b) requires John to be at the starting end of the bridge at ten, while (78a) does not.

A test to identify whether ‘GO’ has a Point or an Interval as its TIME value is the interpretation of duration adverbials such as English *for a while* and *all the while*, and of time adverbials such *at that point*, with respect to the motion described by the verb (Dowty 1979). This test can be used to identify the TIME specification of ‘GO’ in (79a) and (79b) below.

- (79) a. { \*For all that time / At that point } John passed San Francisco.  
 b. { For all that time / \*At that point } John went past San Francisco to Berkeley.

The contrast seen here suggests that the TIME value of ‘GO’ is a Point in (79a), but an Interval in (79b), supporting my temporal analysis of (73a) and (73b) in (74a) and (74b).

#### 10.5.4 More Path-Incorporating Predicates

So far I have looked at cases in which a VIA relation is incorporated into the meaning of a predicate. The same analysis can also be applied to verbs that incorporate TO and FROM relations (e.g., *deru* ‘go out of’, *shuppatsu*

*suru* ‘start’, *hairu* ‘enter’, and the complex motion predicates formed from these verbs). Consider the use of the Japanese verb *hairu* ‘enter’ in (81). This verb can take either a Source PP or an accusative NP to express the object through which one enters a place, as shown in (80).

- (80) Jon wa sono iriguchi {kara/o} haitta.  
 John Top the entrance Src/Acc enter-Past  
 ‘John {entered from / entered} the entrance.’

Unlike English *enter*, this verb cannot express the object (place) one goes into with an accusative-marked NP.

With either case-marking, the verb *hairu* incorporates the notion of direction ‘toward inside’. In addition, accusative-marking *hairu* appears to incorporate the FROM relation (indicating the place from which one enters), as argued by Kageyama (1980a).

This view requires a certain amount of justification, since it is often claimed that *o* in sentences like (80) is actually a postposition marking Source; if so, the verb would not encode the FROM relation. One piece of evidence that might appear to support this alternative is that *o* in (80) appears to be semantically meaningful, and hence cannot be regarded as a “meaningless” case marking (Yamada 1981). The alleged semantic content of the *o*-marking comes from the fact that the verbal process in such sentences is one which affects the object denoted by the *o*-marked NP as a whole (Kuno 1973, Yamada 1981). However, this “meaning” should properly be attributed not to the “meaning” of *o* as a postposition, but rather to the general nature of the object NP, as has been pointed out in relation to the *load/spray* verbs (e.g., Pinker 1989).

Evidence from passivization supports the analysis of such an *o*-marked phrase as being the object NP of the verb, rather than a PP. The *o*-marked phrase in (80) can be the passive subject in sentences like (81)<sup>4</sup> behavior characteristic of an object.

- (81) Kono iriguchi wa mada dare ni mo hair-arete inai.  
 this entrance Top yet anyone by even enter-Pass Asp-Neg  
 ‘This entrance has never been entered by anyone.’

In addition, an *o*-marked NP can represent semantic Source only with a restricted number of verbs (i.e., *deru* ‘go out’, *shuppatsu suru* ‘start’, *hanareru* ‘leave’, *hairu* ‘enter’; cf. *iku* ‘go’, *aruku* ‘walk’, *agaru* ‘go up’, etc., where an *o*-marked NP cannot represent Source). This would not be accounted for by the view that *o* is a postposition marking Source. In the

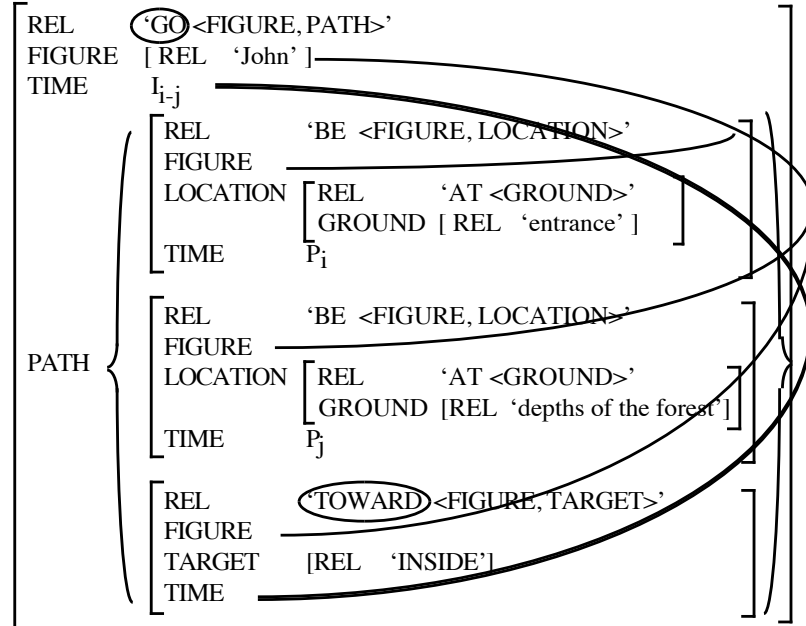
present account, these NPs are object NPs representing Source; the FROM relation is incorporated into the verbs.

The meaning of *hairu* with an accusative NP and with a source PP differ subtly, as predicted by the Coextensiveness Condition. With a source PP the verb *hairu* represents a temporally extended process, allowing a Goal which is distinct from the entrance point to be expressed and a durational phrase to co-occur. With an accusative NP, on the other hand, this verb denotes a temporally non-extended process, restricted to just that portion of the motion in which one goes through the entrance. This can be seen in the contrast between (82a) and (82b).

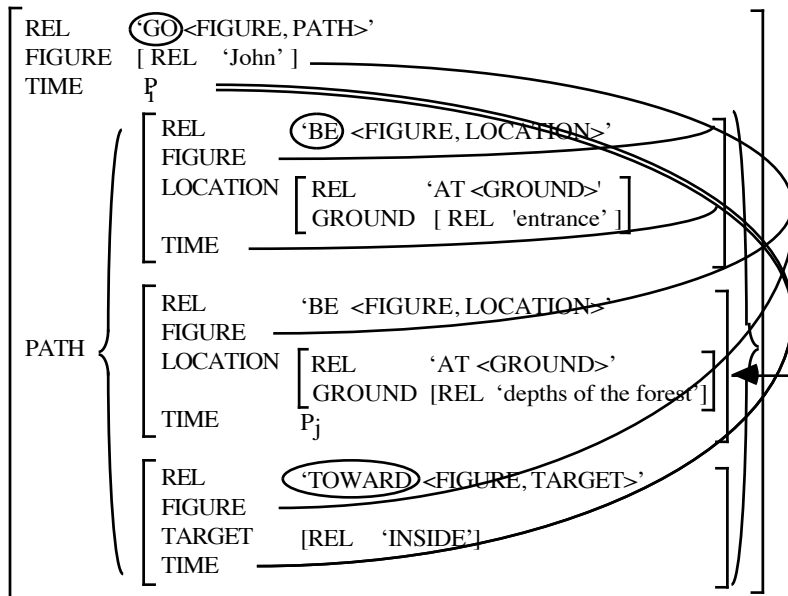
- (82) a. Jon wa    sono iriguchi    kara    shibaraku    mori no    oku  
          John Top the    entrance    from for.a.while forest Gen depth  
          fukaku made    hait-ta.  
          depth as.far.as enter-Past  
          ‘John went in from the entrance to the depths of the forest for a  
          while.’
- b. Jon wa    sono iriguchi o    (??shibaraku) (??mori no  
          John Top the    entrance Acc for.a.while    forest Gen  
          oku fukaku made) hait-ta.  
          depth depth as.far.as enter-Past  
          ‘John entered the entrance (??to the depths of the forest) (??for a  
          while).’

This observation suggests the following semantic structures for these two cases of *hairu* ((82a) and (82b)), given in simplified form in (83a) and (83b). ((83b) includes the semantic structure for the Goal PP in (82b) as one of the PATH substructure (indicated by an arrow). Again, (83b) is well-formed only when this substructure is removed.)

(83) a.



b.



In (83a), the TIME value of ‘GO’ is an Interval, and during this interval John proceeds from the entrance to the depths of the forest in an inward direction of motion. In (83b), on the other hand, the TIME value of ‘GO’ is a Point. This is the result of conflation. In (83b) the verb *hairu* has incorporated the FROM relation, and therefore the TIME value of ‘GO’ must be identical with the TIME value of the PATH argument representing the Source. Given that the TIME value of this Path relation is a Point, the TIME value of ‘GO’ must also be a Point,  $P_i$  in this case. Therefore the verb cannot take a durational phrase or the description of the location of John at the later point  $P_j$  or. Thus, (83b) is not a well-formed semantic structure with the middle PATH argument, accounting for the unacceptability of (82b) with the Goal PP *mori no oku fukaku made*. Note that the PATH argument representing direction is incorporated in both (83a) and (83b) due to the identical TIME values.

Though the analogous complex motion predicate with *haitte iku* ‘go in’ has a slightly different pattern, the Coextensiveness Condition holds of this predicate as well. A participial complex motion predicate with a Path-incorporating verb represents the gradual, temporally extended process of a change in location denoted by the participial verb. This is even true of *haitte iku*, whose participial verb denotes a momentary process when used alone. This complex predicate can thus have an Interval as its TIME value, and hence it can have an accusative-marked NP denoting the route along which the FIGURE goes in. Thus, one can say (84), with the route *dookutsu* ‘cave’ accusative-marked, which is not natural with *hairu*.

- (84) Jon wa    sono dookutsu o    iriguchi kara    ichiban oku ni  
 John Top the    cave Acc    entrance Src    most    depth Goal  
 haitte it-ta.  
 enter go-Past  
 ‘John went in through the cave from its entrance to its utmost depths.’

Since the TIME value of *haitte iku* is an Interval, it is possible to express Source and Goal of motion with this complex motion predicate, as long as they are located at the ends of the cave described.

Thus, the Coextensiveness Condition can be used to account for the conflation of Path relations such as FROM in Japanese complex motion predicates as well as in simplex verbs. This observation strengthens the view put forward here, that Japanese complex motion predicates are semantically lexical.

## 10.6 Semantic Constraints and Wordhood at C-structure and F-structure

The discussion in this chapter has shown that semantic conditions such as the Coextensiveness Condition and the Determinative Causation Condition constrain the semantic structures of semantically lexical items  $\Delta$  units that constitute a single predicate in a-structure (whether morphologically simplex or complex). These semantic conditions do not apply to wordhood in c-structure or f-structure. There appear to be no semantic constraints on what can constitute a single word in c-structure; a word can represent a quite complex situation, as can be seen by the meanings of such syntactic compounds as *yomi-kaneru* ‘be reluctant to read’ and *yomi-sugiru* ‘read too much’. The component events in such compounds are independent, and are not related in the way demanded by the Coextensiveness Condition and the Determinative Causation Condition.

Are there semantic constraints on what can constitute a single word in f-structure? I have argued that a complex a-structure mapped onto a simplex f-structure must involve a SUBEVENT, which is not independent of the embedding a-structure semantically. This was the case, for example, in the distinction between coercive causatives (functionally one word) and persuasive and permissive causatives (functionally two words). However, this restriction is much looser than the constraints placed on semantically lexical items (one word at a-structure). Neither the Coextensiveness Condition nor the Determinative Causation Condition is respected by a unit that is a single word at f-structure but two words at a-structure, such as *yomi-wasureru* ‘forget to read’ and *yomi-oeru* ‘finish reading’. Note also that the coercive causatives do not respect the Determinative Causation Condition, as discussed in Chapter 6 (sec. 6.6).

What emerges clearly from this brief discussion is that the semantic constraints that govern lexical predicates (e.g., *kick*, *chase*)  $\Delta$  i.e., the Coextensiveness Condition and the Determinative Causation Condition  $\Delta$  are constraints on wordhood at a-structure, and not at c- or f-structure.

## 10.7 Conclusion

In this chapter I have proposed lexicalization constraints on semantically lexical items (items that are a single word at a-structure), first identifying such constraints on the basis of simplex verbs, and then showing that complex motion predicates and compound motion verbs are subject to the same conditions. Such conditions can explain a variety of conflation patterns that are observed in Japanese and English predicates which are monoclausal at argument structure. The fact that these conditions apply to

complex motion predicates and lexical compound verbs as well as to simplex verbs further confirms the analysis whereby all these predicates constitute a single word at a-structure.

## Concluding Remarks

### 11.1 Summary of the Proposed Analyses

In this study I have examined the rich variety of candidates for complex predicates in Japanese to determine in what sense they constitute one word and in what sense they constitute two words. In Chapter 2 I presented a number of tests to identify what constitutes a single predicate (word) at the levels of constituent, functional and argument structures, and on those tests served as a basis of the analyses of the various candidates for complex predicatehood.

In Chapter 3 I argued that the sequence of a participial verb and *morau* or *hoshii*, which has often been treated as a case of complex predicate, is actually composed of two words at all of the three levels of representation (i.e., c-structure, f-structure, and a-structure), with the participial verb representing the predicative complement (XCOMP) of the main verb *morau* and *hoshii*. I suggested that the properties that do make such a sequence look like a complex predicate (i.e., the adjacency of the two predicates comprising the sequence and the possibility of arguments and adjuncts of an XCOMP appearing in a higher clause) can in fact be attributed to the nature of predicative complements in Japanese in general. In Chapter 4 I argued that the same is true of the sequence of a verbal noun and a so-called “light verb” (light verb construction). In this construction the verbal noun represents the head of the predicative complement of a light verb, and the light verb is simply a raising verb or a control verb. In the analysis I proposed, all the properties of light verb constructions can be explained without appealing to any mechanism that is specific to light verb constructions (such as Grimshaw & Mester’s (1988) Argument Transfer).

In Chapter 5 I examined desiderative predicates, and proposed that they are one word at c-structure and two words at a-structure but can be either one or two at f-structure, yielding two desiderative subtypes. I also proposed a condition for nominative case marking of objects with stative predicates, which accounts for the difference in the object case marking of the two types of desiderative predicates and of other kinds of complex predicates as well. In Chapter 6, I discussed morphological causatives. I proposed an analysis in which morphological causatives constitute one

word at c-structure, two words at a-structure, and either one or two at f-structure depending on the type of causation represented by the predicate. Explicit and implicit permissive causatives and persuasive causatives constitute two words at f-structure, but coercive causatives constitute one word. In Chapter 7 I investigated certain aspectual compound verbs (syntactic compounds), and argued that they, too, can be ambiguous. They constitute one word at c-structure and two at a-structure; they are one word at f-structure when they represent the intentional initiation, continuation, or termination of a process, but two words at f-structure when they represent the non-intentional beginning, continuation or cessation of a situation. I also examined a number of other syntactic compound verbs that involve a complement, which are (similarly) one word at c-structure, two words at a-structure, and either one or two at f-structure, depending on the second verb of the compound.

In Chapter 8, I examined “lexical” compounds in which the first verb represents the manner, means, cause, etc. of the process denoted by the second. I argued that these constitute one word at c-, f-, and a-structure. I noted that the argument structure of the entire compound is in most cases identical with that of either the first or the second component verb, but that in some cases it can be a mixture of the arguments of both member verbs. I also characterized lexical compounding as an operation on semantic structure, and argued that the patterns of compounding suggest certain conditions on well-formed semantic structure, such as the Shared Participant Condition. In Chapter 9 I examined participial and purposive complex motion predicates, such as *kai ni iku* ‘go to buy’ and *motte iku* ‘go having’. These constitute one word at a- and f-structure, but two at c-structure. In Chapter 10 I showed that lexical compounds and complex motion predicates are subject to the same semantic conditions that are placed on the meanings of lexical verbs in English and Japanese (i.e., the Coextensiveness Condition and the Determinative Causality Condition). I argued that these are conditions which any complex semantic structure must satisfy in order to be mapped onto a simplex argument structure.

Each of the predicates and constructions discussed in Chapters 3 through 9 thus involves the following number of words at each level of representation.

(1)	c-structure	f-structure	a-structure
Ch. 3 participle + <i>hoshii/morau</i>	2	2	2
Ch. 4 verbal noun + “light” verb	2	2	2
Ch. 5 desiderative predicates	1	1 or 2	2
Ch. 6 causative predicates	1	1 or 2	2
Ch. 7 syntactic compounds	1	1 or 2	2
Ch. 8 lexical compounds	1	1	1
Ch. 9 complex motion predicates	2	1	1

Whether a sequence of two morphemes forms one morphological word or not (i.e., at c-structure) can be partially predicted by the form of the first predicate; 1) Participial verbs always form one independent morphological word (cf. participle + *morau/hoshii*, and participial complex motion predicates); 2) the Renyookei form (the *-i* form) may form one word with the following verb (cf. the base verb in desiderativized verbs, and V1 of syntactic and lexical compound verbs; note also that the Renyookei form can occur by itself). It appears that the participial morpheme *-te* is the final element in a morphological derivation, whereas the Renyookei form may not.

There are a few patterns that are unattested in (1) above. First, there is no predicate that is two words in c-structure, one word in f-structure, and two words in a-structure. Such predicates are, however, attested in other languages; Urdu permissives, which were discussed in Chapter 2 (sec. 2.1.4.2), are one such example. This gap appears to be an accidental one in Japanese. There are also no cases in which a predicate constitutes two words in f-structure and one word in a-structure. Such a predicate is unimaginable, since it would involve the split of a REL in argument structure into two PREDs in f-structure. The current LFG mechanism does not allow this kind of mapping, correctly predicting that there is and can be no such predicate.

## 11.2 Implications of the Findings

There are two general issues that can be discussed on the basis of the findings summarized above. They are 1) the independence of the different senses of the term ‘word’, and 2) the restrictions on the mapping between a complex structure and a simplex structure.

### 11.2.1 Independence of the Three Senses of ‘Word’

This study has demonstrated in considerate detail the independence of the different senses of the unit ‘word’ (morphological, functional, and semantic). The morphological word is a unit whose internal structure cannot

be manipulated by syntactic rules; the functional word is the minimal unit that functionally dependent rules operate on; the semantic word is the unit in which possibly complex conceptual materials are packaged tightly and conveniently to represent (in the case of verbs) a process or state. These correspond to the minimal unit in c-, f-, and a-structure, respectively.

Morphological wordhood is clearly independent of functional and semantic wordhood. (1) above shows that a single morphological word may correspond to one word or two words at f-structure and at a-structure. Also, a unit that constitutes two words at c-structure can be one word or two words at f- and a-structure. Functional wordhood and wordhood at a-structure are also independent, though only partially: one word in f-structure can be either one or two words in a-structure, though there is no case in which two words in f-structure correspond to one word in a-structure.

The full recognition of the independence of wordhood at different levels of representation makes it possible to capture the range of variation found in Japanese complex predicates. The present study has revealed that many of the complex predicates that have heretofore been treated in a uniform fashion in fact differ in their functional complexity. This is especially true as regards morphological causatives, desideratives, and aspectual compounds, in which what is apparently the same form can have two different structures at f-structure. I have argued that certain approaches, including Baker's (1988) Incorporation theory, cannot give an account of the variations found in these cases (see Chapter 5 and 6). The same can be said of proposals made by Kuno, Shibatani, Inoue, and others in classical Transformational Grammar as to morphological causatives and aspectual verbs (see Chapters 6 and 7). A uniform treatment of different types of predicates can sometimes be revealing (as is the case with light verb constructions and control/raising constructions discussed in Chapter 3 and 4), and in fact desirable as a solution if correct. At the same time, however, this study shows that variations among different kinds of predicates also have to be fully recognized in the analysis of grammar.

The distinction between morphological and syntactic (functional) wordhood has been much discussed in the recent literature. Germanic and Ugric separable complex verbs, for example, are composed of two morphological words (in terms of morphological integrity) but function as one unit grammatically and semantically (e.g., Ackerman 1987, Booij 1990, Piñón 1992).

The idea that the notion of lexicality can be parameterized in this way dates back to Selkirk (1982), who states that morphological structures differ from syntactic structures in that no deletion or movement transformations (which alter constituent structures) can involve morphological structures, though rules of interpretation (e.g., those establishing anaphoric relations)

may well involve both morphological structures and syntactic structures. This means that different units can serve as the “minimal unit” in syntax.

Recent studies closely related to the present one also support the need to distinguish between morphological and functional wordhood. T. Mohanan (1994, 1995) and Bresnan & Mchombo (1995) have argued that different characterizations of wordhood hold at separate levels of linguistic representation. In particular, they have argued that morphological integrity holds of words at the level of a constituent structure, independently of their functional structure. Bresnan & Mchombo’s detailed analysis of Bantu noun class prefixes has shown that such structurally dependent rules as extraction and gapping respect morphological integrity, while functionally dependent rules such as agreement do not. This means that morphology and syntax differ in their properties in constituent structure but may share functional properties, and this fact, they argue, can be naturally captured in a theory of grammar like LFG in which constituent and functional information are represented separately.

The independence of the notion of *semantic* wordhood is one unique contribution that I have tried to make in the present work. I have identified a few constraints on the semantic wordhood of a predicate. These include the Shared Participant Condition, the Coextensiveness Condition, and the Determinative Causation Condition. I have also identified one semantic condition on the argument structure of a predicate that is semantically a single word: the Shared Figure Condition. The universality of these and other conditions on possible words (predicates) would be a fascinating topic for future research.

### 11.2.2 Condition on Mismatches among Different Levels

Despite the independence of wordhood at each of the levels discussed above and the potential mismatch of the wordhood of a given expression at different levels, there do exist some constraints on the relationships between the different levels with respect to the wordhood of a given expression. Complex predicates by definition involve differences in their wordhood at different levels of representation. This means that all complex predicates must involve at least one instance of mapping between a complex structure and a simplex structure (e.g., the mapping between argument structure and functional structure in the case of coercive causatives).

There appears to be a certain quite general condition governing what sort of complex structure can be mapped onto a simplex structure, a condition which holds of the mapping between any two levels of representation: two structures comprising a complex structure must share at

least one argument.<sup>1</sup> This is true, first of all, of the mapping between semantic structure and argument structure. As I pointed out in the discussion of compound verbs in Chapter 8, the component parts of a complex semantic structure have to share at least one participant in order to be mapped onto a single argument structure (the Shared Participant Condition).

A complex argument structure that can be mapped onto a simplex functional structure similarly involves the sharing of an argument between two argument structures. In Chapters 2, 6, and 7 I suggested that one condition for such a mapping is the Fused Argument Condition, whereby an argument in a SUBEVENT must be fused with the immediately higher argument structure. I noted this condition at work in my analyses of coercive causatives and Type II syntactic compound verbs. In contrast, when an embedded structure does not share its logical subject (or some other argument) with a higher argument structure, the embedded argument structure cannot be mapped onto a single functional structure together with the higher argument structure. This is the case with Type I syntactic compounds and implicit permissive causatives. Thus, the sharing of an argument appears to be a fundamental condition on the transparency of argument structures.

I also pointed out that, of all grammatical functions, only an XCOMP (whose subject must be bound or controlled by an argument of a higher predicate) optionally allows its own arguments and adjuncts to appear at a higher S level, thus making the c-structure monoclausal (cf. 5.3). In addition, XCOMP is the only grammatical function that can appear in a sublexical position in Japanese, as I noted for persuasive and permissive causatives, accusative-assigning desideratives, Type I and Type III syntactic compounds; no other argument seems able to appear in a sublexical position.<sup>2</sup> This means that in order for a complex f-structure to be related to a single morphological word (optionally in a monoclausal c-structure), the subject of the embedded f-structure must be controlled or bound by an argument of a higher f-structure.

Thus, as claimed above, the sharing of an argument indeed appears to be a general condition that must be satisfied for a complex structure to be mapped onto a simplex structure at least in Japanese.

The universality of this generalization awaits further research. In this

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<sup>1</sup>The discussion in this section is my elaboration of an insight of Peter Sells.

<sup>2</sup>As I mentioned in Chapter 2 (sec. 2.1.4.2), this is not true in some languages other than Japanese. Some languages have instances of Noun Incorporation, in which grammatical functions such as SUBJ and OBJ appear in sublexical positions (Bresnan & Mchombo 1987, T. Mohanan 1994, 1995).

regard, one might consider the generalization made by Aissen & Perlmutter (1983:381) concerning “clause union”. Clause union is a mechanism in Relational Grammar which reduces a biclausal structure with two underlying predicates to a monoclausal structure with one complex predicate. Aissen & Perlmutter’s condition is stated in (2).

- (2) Clause Union is possible with these verbs only if the complement has no 1 [i.e., no subject].

Essentially, this states that only a control or raising structure can undergo clause union. Aissen & Perlmutter argue for their condition on the basis of Spanish clause-reduction constructions. Kroeger (1993) supports an LFG equivalent of this condition in his analysis of Tagalog complex predicate constructions.

One might view clause union as corresponding to argument structure composition in LFG, which reduces a complex argument structure to a simplex functional structure (Kroeger 1993). On the other hand, it might also be regarded as corresponding to the reduction from a biclausal functional structure to a monoclausal constituent structure. Given these two conceivable ways of looking at clause union, it is interesting to compare Aissen & Perlmutter’s condition to the analogous conditions proposed in the present book. Their condition (2) differs from the Fused Argument Condition on the reduction of complex argument structures in that it allows a reduction from a raising-type complex argument structure. In contrast, it is similar to the XCOMP condition on the reduction from a biclausal functional structure in that both raising and control constructions support a reduction. Hence the second approach would seem better motivated, as far as Japanese complex predicates are concerned.

A closer examination of crosslinguistic data would reveal more about universality or possible variation among languages as to the patterns of mismatch in wordhood at different levels.

### 11.3 Final Word

Japanese complex predicates reveal that the notion ‘word’ must be relativized with respect to different levels of representation, which are independent yet related in a constrained way. An adequate linguistic theory must recognize this, as I have tried to show in this book.

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