Constructional Approaches to Language

Grammatical Constructions

Back to the roots

edited by
Mirjam Fried
Hans C. Boas

John Benjamins Publishing Company

Grammatical Constructions

Constructional Approaches to Language

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Volume 4

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Table of contents

Introduction

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Ever since Fillmore, Kay, and O'Connor's (1988) seminal paper "Regularity and Idiomaticity in Grammatical Constructions" re-introduced the notion of grammatical construction into syntactic research, there has been a growing body of literature reflecting an increased interest in Construction Grammar as a distinct approach to language and linguistic analysis. However, compared to other major frameworks such as Principles and Parameters (Chomsky 1981, 1995), Head-Driven Phrase Structure Grammar (Pollard & Sag 1994), Cognitive Grammar (Langacker 1987, 1991), or Lexical-Functional Grammar (Bresnan 2001), there had never been a single conference devoted to Construction Grammar. When, at the end of October 2000 we were yet again discussing this acutely felt gap, it seemed only natural to take it upon ourselves to organize such a conference, to give construction grammarians an opportunity to exchange ideas and present new work on issues of shared theoretical interest, and establish a precedent for future gatherings. Since we were both at that time in Berkeley, the "birth place" of Construction Grammar, we were in a good position to put together, at short notice, a unique assembly of construction grammarians. Thus, ICCG-1 – the First International Conference on Construction Grammar – was born, taking place in April 2001.

For anybody connected with Berkeley-based linguistic research of the past three decades or so, the conceptual basis of Construction Grammar and the very notion of *grammatical construction* as a theoretical entity have been common and familiar knowledge. What is now known as Construction Grammar developed out of a confluence of interests – linguistic, cognitive, anthropological, philosophical, computational – which were all centered around the idea that linguistic form is inextricably bound with its meaning and its communicative function and that this connection must be the basis for any de-

scriptively and explanatorily adequate theory of linguistic structure (Lakoff 1977, 1987; Chafe 1970; Fillmore 1968, 1984, 1985, 1986, 1988, 1989; Slobin 1984; Wilensky 1986; and many others). Different aspects of, and motivations for, Construction Grammar thus can be traced to the work of a number of researchers, all of whom have left their mark on the shape the theory has gradually acquired, including its connection to other theories with compatible goals, particularly Cognitive Grammar and HPSG.

However, the term 'construction' is also a very traditional one, used loosely by linguists and non-linguists alike as a descriptive label that simply refers to a linguistic expression consisting of several parts, i.e. something larger than a word. It is essential to keep this sense of the term 'construction' distinct from the way it is used in Construction Grammar, if we wish to truly appreciate the nature of Construction Grammar as a theoretical approach to language and to understand the symbolic, representational status of grammatical constructions as the basic units of linguistic analysis. One of the objectives of the conference was to start working toward clarifying this distinction in the perceptions of the general linguistic community. The present volume, whose title is intended as reference both to the shared theoretical basis and to its historical origins, now joins other recent publications (Fried & Östman 2004a; Östman & Fried 2005) in presenting the breadth of Berkeley-based Construction Grammar research, as well as its possible extensions.

The chapters in this volume, based mostly on a small selection of papers that started out as papers originally presented at ICCG-1, all reflect the path that Construction Grammar has carved out for itself over the past two decades. The path has evolved into various recognizable strands, which, despite differences in methodology and focus, all share a commitment to giving grammatical constructions, defined as conventionalized associations between linguistic form and meaning/function, the status of the elementary building blocks of human language. The range of topics presented here can be grouped into three broad areas (with obvious overlaps between them), highlighting major themes that have always held construction grammarians' interest and that also illustrate some of the fundamental theoretical concerns of Construction Grammar: (1) the questions of representing syntactic patterning in a framework that rejects the autonomy of syntax (Kay; Lambrecht & Lemoine; Ohara); (2) the relationship between grammatical structure and verb semantics (Iwata; Nemoto; Tsujimura); and (3) the problems of capturing, in a systematic way, linguistic variation and change (Langacker; Leino & Östman; Ohori).

Some chapters are explicitly focused on raising theoretical questions about the architecture and mechanisms of Construction Grammar, either by bringing

out its connection to other theoretical models (particularly, HPSG as a sign-based formal model of grammar in Kay's chapter, and Cognitive Grammar as a usage-based cognitive model in Langacker's contribution), or by extending the domain of constructional analysis to areas that only recently have started drawing more focused attention, such as variability in grammatical patterning, whether in a single language (Leino & Östman) or across languages and for the purpose of drawing typologically relevant generalizations (Ohori). Virtually all of the chapters reflect the universal interest of constructional grammarians of all stripes in studying grammar in its *use*, rather than as an abstract entity independent of its communicative grounding. The volume thus also contains a wealth of interesting data from a number of languages, testing the applicability of constructional analysis to various language-particular phenomena.

Finally, let us make a brief comment on the notational practice(s) within Construction Grammar. Whether in this volume or in other publications on constructional analysis, the reader will find a variety of approaches to formal representations of constructions, the major ones being the hallmark boxed-style notation (e.g., Fillmore 1988, 1999; Michaelis & Lambrecht 1996; Kay & Fillmore 1999; Fried & Östman 2004b), HPSG-style notation (Kay 2002 and this volume), Goldberg's (1995) argument-construction-style notation, or the distinctive pictorial notation of Cognitive Grammar, here found in Langacker's chapter. This apparent lack of superficial uniformity might seem frustrating to the outsider, especially to one who is used to the representational discipline of generative syntax. However, many construction grammarians actually see the relative freedom in the formalism as a reflection of the fundamental tenet of the model, which is that linguistic analysis should not be an exercise in accommodating predetermined formal structures consisting of predetermined abstract variables, but, rather, an enterprise in extracting relevant structures and categories from the data patterns at hand (argued for convincingly and formulated most succinctly in Croft 2001). It is the data that will drive the demand for establishing abstract patterns and their components, and one consequence of this approach is the realization that different types of phenomena may make use of different kinds of representation, although the differences are essentially a matter of emphasis and focus, not any fundamental and internally conflicting mechanisms. This volume reflects this notational diversity as well.

Syntactic patterning

Several chapters focus primarily on specific syntactic issues in various languages. The first syntactic chapter, by Knud Lambrecht and Kevin Lemoine, was not presented at the conference, but it represents a much-needed contribution to constructional literature concerned with the conditions under which objects may be omitted. Dealing with issues of null instantiation is a topic that goes back to the beginnings of Fillmore's constructional theorizing (Fillmore 1969, 1986, 1988) and yet, it has not been picked up again in any systematic way. Lambrecht & Lemoine's study, addressing object omission phenomena in spoken French, is thus important not only for its rich empirical content and careful analysis that results in a comprehensive typology of null instantiation in French, but also as a reminder about issues that have been part of the constructional model from its earliest conception.

Another 'early' and persistent topic in Construction Grammar involves the syntax of complex sentences, here represented by Kyoko Hirose Ohara's chapter, which presents the analysis of two formally related but functionally distinct sentence patterns in Modern Japanese: concessive clauses vs. a particular type of relativization. She argues for a constructional treatment of the relationship between them, showing that their conventionalized semantic and pragmatic properties go hand in hand with subtle shifts in their internal structure. This study is also valuable in that it applies a constructional approach to an area in which it has not been systematically tested: that of constructional reanalysis, shown to involve the interplay between syntactic form, pragmatic function, and semantic content in establishing new clausal patterns.

Paul Kay's chapter addresses the difficult topic of making principled distinctions between arguments and adjuncts; it offers an HPSG-based formal representation of the systematic mapping patterns between various types of event structures as abstract semantic objects, and the valence structures associated with particular verbs. The analysis, centered on English ditransitives and a number of caused-motion phenomena, leads to establishing a set of linking constructions that mediate the relationship between event structures and verbal valences. The work makes an excellently argued case for one of the fundamental claims of Construction Grammar, namely, that a given sentence is not always just a projection of its lexical head but incorporates 'added' elements in a systematic way. It also highlights the fact that sentence-level interpretation does not reside in grammatical constructions only, but must take into account the meaning of the verb.

This aspect of Kay's work thus simultaneously introduces the main theme of the next three chapters, which focus explicitly and in great semantic detail on the relationship between the lexical meanings of verbs and the syntactic expressions of their arguments.

Verbs and constructions

The first two chapters are dedicated to locative alternation phenomena and they both, together with Kay's chapter, can be seen as carefully documented and persuasively argued 'responses' to Goldberg's (1995) treatment of these alternations, each chapter concentrating on a slightly different aspect of the general issue. Seizi Iwata's contribution is concerned with identifying the sources of polysemy in locative alternations. He gives a convincing account of several English verbs that enter into such alternations, focusing on the details of the relationship between inherent verb semantics and the constructional meaning of phrases in which given verbs occur. Iwata's conclusion is important for the correct understanding of the interaction between grammatical constructions and the words that fill them: both layers of meaning (constructional and lexical) play a role in contributing to multiple interpretations of 'the same verb'. The paper thus makes an important theoretical point about potential sources of polysemy: it is necessary to distinguish between constructional polysemy vs. verbal polysemy and to acknowledge that not all alternation phenomena fall into the same type of polysemous behavior.

Noriko Nemoto's chapter zeroes in on the specifics of verb meaning for selected verbs in order to find the right level of generalization necessary for identifying the boundaries between different senses of a verb. She investigates the distribution of several verbs in the English locative alternation (based on Levin 1993), and by comparing a verb's meaning interaction with different syntactic patterns, she shows Goldberg's (1995) notion of argument structure constructions to be too broad because it does not fully account for all of a verb's sub-senses. This observation leads to the conclusion that each of a verb's senses needs to be described with respect to the different semantic frames it interacts with, thus echoing the approach to linguistic semantics known as Frame Semantics (Fillmore 1982, 1984; Fillmore & Atkins 1992; Atkins 1994; Atkins et al. 2003; Fillmore et al. 2003; Fried & Östman 2003; among others).

The final chapter of this group brings a refreshingly new topic into the discussion of relating lexical semantics and grammatical patterning through constructional analysis. Natsuko Tsujimura's investigation of mimetic verbs in

Japanese attempts to apply Goldberg's (1995) general approach to a set of items whose analysis (formal or semantic) tends to be quite elusive in traditional accounts. Tsujimura carefully documents the behavior of these verbs, which represent lexical units with inherently underspecified categorial and semantic properties, but which are semantically sufficiently distinct to show systematic constraints in their combinatorial possibilities vis-à-vis larger phrasal units. Her study presents the first step toward a more comprehensive treatment of mimetic expressions, including a formalized representation of their use in grammatical constructions.

Language variation and change

The final set can be seen as an extension of the constructional enterprise into the domain of variation and language change, drawing attention to the dynamic nature of language and highlighting some of the key issues surrounding the interaction between grammatical patterning, lexical semantics, and pragmatic information from that perspective. As the founder of Cognitive Grammar, Ronald Langacker brings up the intellectual connection between Construction Grammar and Cognitive Grammar as two frameworks that in many ways developed in parallel and out of a similar general way of thinking about language and grammar. His chapter thus serves two objectives: providing a much-needed clarification of the mutual relationship between the two grammars, and illustrating the notion of construction as applied within Cognitive Grammar. On the first point, he gives an excellent, very accessible overview of the basic features and inner workings of Cognitive Grammar, addressing major points of both difference from and overlap with Construction Grammar; his presentation should help remove some of the commonly held misconceptions about both. On the second point, Langacker emphasizes the indispensability of the conceptual dimension of constructions as the central element in linguistic structure, rather than its grammatical form or the exact mapping between the two poles. He illustrates this point by examining two cases of grammaticization, one in English and one in Luiseño.

The chapter by Jaakko Leino and Jan-Ola Östman reminds us that while Construction Grammar is in principle committed to addressing problems of variation, this area of research has so far received little attention. Through the analysis of several specific problems (e.g., the evolution and distribution of multiple pronominal paradigms in Finnish, or variable case marking in the content argument of Finnish perception verbs), the authors demonstrate

the effectiveness and flexibility of the constructional approach in dealing with variability, but also find it wanting in some details. This prompts them to make specific proposals for developing the representational apparatus of Construction Grammar so that issues of language variation and change can be accommodated with greater accuracy.

Similarly, the flexibility of Construction Grammar and its potential for broader application frames Toshio Ohori's chapter on switch reference in a typological perspective. He shows that traditional, configuration-based analyses of this phenomenon are problematic because they do not take into consideration the underlying semantics and pragmatics of the switch-reference systems. Arguing for the view that typological generalizations should be sought in terms of regularities in form-meaning correspondences, Ohori demonstrates that Construction Grammar has the capacity to handle syntactic variation both language-internally and cross-linguistically, and is thus a viable conceptual framework for linguistic typology.

We hope that this brief overview shows the breadth and depth of recent research in Construction Grammar and that the chapters in this volume will stimulate further advances within the constructional paradigm. Since the First International Conference on Construction Grammar, a number of encouraging developments have occurred in the constructional community that we see as indicators of success of the original Berkeley gathering. The most obvious consequence are the follow-up constructional conferences. In September 2002, ICCG-2 at the University of Helsinki attracted more than a hundred participants; also well-attended was ICCG-3 at the University of Marseille, held in July 2004; and plans are under way for ICCG-4, to take place in Japan in 2006.

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Part I

Syntactic patterning

Chapter 1

Definite null objects in (spoken) French

A Construction-Grammar account

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1. Introduction*

In Generative Grammar, modern French is generally classified, as is English, among the languages that do not permit the omission of a subject or object pronoun, i.e. that do not allow the null-instantiation of primary grammatical functions. The following quotes illustrate this claim:

> [Hot languages are those for which] pronouns cannot in general be omitted from grammatical sentences, and the information required to understand each sentence is largely obtainable from what is overtly seen and heard in it. (...) English and French are among the 'hot' languages. (Huang 1984: 531f.)

> ...in languages with object clitics, one never finds a simple sentence where both the object clitic and the lexical NP object are missing (when the verb subcategorizes for an object). (Roberge 1990: 177)

Statements of this type are common in the generative literature (e.g. Raposo 1986: 373; Kihm 1988: 58; and the critical overview in Huang 1995). The explanation for this assumed typological trait is sometimes sought in the absence of a sufficiently rich inflectional system (cf. Taraldsen 1980; Chomsky 1981, 1982, 1993).[1]

We intend to demonstrate that this classification of French is inadequate on two accounts. First, it is inadequate from an observational point of view because, being based on the selective intuitions of linguists working exclusively on standard written language, it fails to account for a large class of data from spoken French. Relying on corpus data, we will show that it is contradicted by the facts observed in spontaneous speech. Second, the classification is in-

adequate from an explanatory point of view. By attempting to reduce a large number of phenomena to two or three general principles of Universal Grammar, combined with parameters of variation across individual languages, this approach fails to account sufficiently for the variety of semantic interpretations given to the different types of null complements and for the influence of pragmatic factors.

It is interesting to contrast the claims cited at the beginning with observations found in traditional French grammars. For example, two well-known normative grammarians, Vaugelas (1647) and Grevisse (1959), acknowledge the type of null-instantiation designated as impossible by the authors quoted above:

> Plusieurs obmettent le pronom relatif, *le*, aux deux genres & aux deux nombres. Par exemple, *un tel veut acheter mon cheval, il faut que ie luy face voir*, au lieu de dire, *il faut que ie le luy face voir* (. . .) Amyot fait tousjours cette faute, mais ce n'est qu'auec *luy*, & *leur*, pour euiter sans doute la cacophonie de *le luy*, & *le leur*. (Vaugelas 1647: 33)

> 'Many omit the relative [sic] pronoun *le* in both genders and numbers. For example, *Such and such wants to buy my horse, I have to show him*, instead of saying *I have to show it to him*. (. . .) Amyot always makes that mistake, but only with *lui* and *leur* [the dative singular and plural forms, KL&KL], no doubt in order to avoid the cacophony of *le lui* and *le leur*.'

> Dans les combinaisons *le lui, la lui, le leur, la leur, les lui, les leur*, au moyen âge, on omettait ordinairement le premier pronom; en dépit de Vaugelas (Rem, p. 33), cela se faisait parfois encore au XVII siècle: . . . *il a demandé la "Vie des Saints", on lui a donnée* . . .. – Cette haplologie est restée courante dans le langage populaire ou familier: . . . – *Tu entends! Je ne lui ai pas fait dire* (J. Giraudoux, L'Apollon de Bellac, 8). (Grevisse 1959: 547f.)

> 'In the combinations *le lui, la lui, le leur, la leur, les lui, les leur*, in the Middle Ages the first pronoun was normally omitted; in spite of Vaugelas (Rem, p. 33), this was still done sometimes in the 17th century: . . . *he asked for the "Life of the Saints", they gave him* . . . – This haplology has remained common in popular or colloquial speech: . . . – *You hear! I didn't make him say* (J. Giraudoux, L'Apollon de Bellac, 8).'

These quotes, especially the second, allow us to state from the outset an important typological difference between modern French and modern English. In spite of persistent claims to the contrary, French regularly permits the null-instantiation of object pronouns denoting specific discourse entities, whereas English does not; our literal English translations of the two examples quoted

by Grevisse, *they gave him*, *I didn't make him say*, are clearly unacceptable in the given discourse contexts.[2]

The difference between French and English with respect to definite pronoun omissibility can be demonstrated on the basis of a simple scenario, originally used by Fillmore (1986). Arguing against purely pragmatic explanations of pronoun omissibility in English, Fillmore writes: "Even if it is absolutely clear to everyone concerned that a particular door is in question, the remark **Did you lock?* cannot be used to 'refer' to the door in question" (1986: 98). The argument does not carry over to French. The corresponding French utterance *Tu as fermé?* would be perfectly natural in unmonitored speech. We will provide ample evidence that in modern French null-instantiation of definite object pronouns is not restricted to the cases of 'cacophony' or 'haplology' mentioned by Vaugelas and Grevisse, hence that the phenomenon under investigation cannot be explained in phonological terms. Rather it is a fully productive, though strongly stigmatized, grammatical option in the spoken language.

Our investigation is centered on null object complements and deals only in passing with the problem of null subjects, which we take to be of a different nature. Furthermore, we will consider only objects of verbs, ignoring for our purposes null complements of adjectival, nominal, and prepositional predicators (for the latter, cf. in particular Zribi-Hertz 1984). The analysis will proceed in two stages. First, we will present an overview of the various grammatical types of argument instantiation (Section 2) and of null-instantiation in particular (Section 3). This overview is based on the system proposed for English in Fillmore (1986) and Fillmore & Kay (1995), with some necessary adjustments to account for differences between the two languages, as well as one or two more substantive departures. We will then analyze the specific phenomenon of Definite Null-instantiation in spoken French, taking into account morphosyntactic, semantic, and pragmatic factors (Sections 4 and 5).

2. Types of complement instantiation

Following Fillmore & Kay (1995), we distinguish five ways in which the valence elements of a predicator can be syntactically realized, or instantiated, in a sentence: (i) Direct Instantiation, (ii) Distant Instantiation, (iii) Coinstantiation, (iv) Double Instantiation, and (v) Null-instantiation.[3]

In *Direct Instantiation*, the valence element appears in what is taken to be its 'canonical' position, that is, as a right sister of the verb (or as a left sister of the

verb phrase, in the case of subject NPs), as shown in (1a). For easy recognition, the relevant valence elements are enclosed in square brackets:

(1) a. [Le professeur] prête [ses chaussettes] [à son étudiante].
'The professor lends his socks to his student.'
b. [Il] [les] [lui] prête.
'He lends them to her.'

(1b) illustrates the syntactic behavior of pronouns of the bound or atonic series (misleadingly referred to as 'clitics' in the transformational generative tradition). These pronouns do not occupy the phrasal positions of their full lexical counterparts (shown in (1a)) but occur as lexical affixes directly to the left (and exceptionally to the right) of the verb (cf. Kayne 1975; Lambrecht 1981; Miller & Sag 1997; among others). We are not concerned in this chapter with the syntactic differences between full lexical and bound pronominal argument instantiation and we will simply count the position of bound pronouns as a special case of Direct Instantiation.

In *Distant Instantiation* (known as 'WH-movement' in transformational approaches), the valence element appears in an isolated position (the so-called WH or COMP position) to the left of the clause containing the predicator, forming an extended syntactic unit with this clause (the Left-Isolation construction of Construction Grammar, the S' unit of X-bar theory, or the C" unit of the GB model):

(2) a. Les chaussettes [dont] elle a besoin sont en nylon.
'The socks she needs (lit. of which she has need) are nylon.'
b. [L'AMOUR] elle appelle ça. (Stempel 1981)
'LOVE she calls it.'

In (2a), the left-isolated ('WH-moved') element is the oblique relative pronoun *dont* 'of which', in (2b) it is a 'focus-moved' (Prince 1981; Ward 1988) lexical NP. Since in Construction Grammar no movement is assumed in (2), the left-isolated element is not coindexed with a trace or gap in postverbal position.

In non-standard French, the Distant-Instantiation construction in (2a) can be replaced by the variants in (2′) (the unnatural or ill-formed English glosses are meant to mirror the syntax of the French sentences):

(2′) a. Les chaussettes qu'elle [en] a besoin sont en nylon.
'The socks that she has need of them are nylon.'
b. Les chaussettes qu'elle [ ] a besoin sont en nylon.
'The socks that she has need are nylon.'

In (2′a) the argument occurs direct-instantiated as the bound pronoun *en* 'of it' while the WH position (more appropriately labeled QU position in French) is occupied by the complementizer *que*. In (2′b) the argument is null-instantiated (cf. below), as indicated by the pair of empty brackets.

In *Coinstantiation*, the interpretation of an unexpressed valence element of one predicator is linked to the interpretation of the overtly (or covertly) expressed argument of another predicator in the sentence:

(3) a. [Il] voulait bien les lui prêter.
'He was willing to lend them to her.'
b. Elle [l'] a persuadé de les lui prêter.
'She persuaded him to lend them to her.'

In these examples, a valence element of the matrix verb (the subject in (3a), the object in (3b)) is construed as coinstantiating the logical subject of the infinitival clause. The coinstantiated argument, unlike the distant-instantiated argument illustrated in (2), does not occupy a structural position in the sentence. There is therefore no possible phonetic manifestation of this argument. The Coinstantiation Construction corresponds to the 'Control' structures of Government and Binding, which give rise to the empty category 'PRO'.

In *Double Instantiation*, the same valence element appears in two different positions within the same clause, as in the cases of Subject Extraposition in (4a) and (4b) or the so-called 'Clitic-Doubling' construction in (4c):

(4) a. [Il] est peu recommandable [de prêter ses chaussettes à une étudiante].
'It is not advisable to lend one's socks to a student.'
b. [Il] est arrivé [trois étudiantes].
'There (lit. It) arrived three students.'
c. Je [t'] ai vu [toi].
'I saw YOU.' (lit. 'I you saw you')

In these sentences, Direct Instantiation would be equally possible, though pragmatically divergent (the constructions in (4) mark a normally topical subject or object as focal): [*De prêter ses chaussettes à une étudiante*] *est peu recommandable* 'To lend one's socks to a student is not advisable', [*Trois étudiantes*] *sont arrivées* 'Three students arrived', and *Je* [*t'*]*ai vu* 'I saw you'. Notice that each of the doubled complements in Double Instantiation appears in a canonical argument position. This instantiation type can therefore be seen as a special kind of Direct Instantiation.

Finally, in the case of *Null-instantiation*, the valence element has neither a direct nor an indirect phonetic representation in the sentence:

(5) a. Prêter ses chaussettes à des étudiantes est peu recommandable.
'To lend one's socks to students is not advisable.'
b. Il lui prête.
'He lends to her.' (i.e. 'He lends them to her')
c. Elle n'a pas voulu.
'She didn't want.' (i.e. 'She didn't want (him) to.' or 'She didn't want them.')

The type of null-instantiation illustrated in (5a) is similar to the coinstantiation type of (3) in that the logical subject of the infinitive *prêter* has no possible phonetic realization in the sentence. It differs from (3) in that the logical subject is not coinstantiated with the overt argument of another predicator in the sentence (this is the empty category 'PRO arb(itrary)' of Government and Binding). The situation is crucially different in (5b) and (5c). In these examples, the null element does correspond to a structural position in the sentence and could be phonetically realized via direct instantiation (compare (5b) with (1b)). Notice that (5c) is in principle ambiguous between the reading where the null element represents an infinitival or finite verbal complement, denoting a situation, and that where it represents a nominal or pronominal complement, denoting an entity (compare (16d) below).

With respect to the syntactic difference between the Null-Instantiation type represented in (5a), on the one hand, and that in (5b/c), on the other, we adopt the basic dichotomy proposed by Zribi-Hertz (1985) between so-called *empty categories*, which are required by the grammar of the sentence and cannot in principle undergo lexical or pronominal substitution, and *structural ellipses*, which alternate in principle with phonetically realized pro-forms and which are subject to discourse appropriateness conditions. Recall, however, that the concept of 'empty category' as it is understood in the Government-and-Binding framework is incompatible with the strictly mono-stratal, non-derivational framework of Construction Grammar. In the latter, the semantic interpretation of the unexpressed valence element is taken to be directly provided by the grammatical construction within which the null element occurs rather than being determined by various movement operations. With this proviso, we can say that sentences (5b) and (5c) are examples of structural ellipsis in the sense of Zribi-Hertz; they involve null-instantiated complements proper and their occurrence is determined by pragmatic rather than syntactic factors. From a syntactic point of view, structural ellipsis is equivalent to Direct Instan-

tiation, the only difference being that the argument lacks a phonetic realization. In the rest of this chapter we will be concerned mainly with Null-instantiation of this structural-ellipsis type.

Compelling evidence for the syntactic reality of the null-instantiated valence elements in (5b/c) is provided by the French Causative-*faire* construction. It is well known that the causee argument in this construction gets 'demoted' from direct to indirect object just in case the infinitival complement of *faire* has itself a direct object, as shown in (6a) vs. (6b). Interestingly, if the object of the infinitival complement is null-instantiated, the causee still appears in the dative case, as shown in (6c):

(6) a. Je l' ai fait manger.
I him.ACC have made eat.
'I made him eat (something).'

b. Je les lui ai fait manger.
I them.ACC him.DAT have made eat.
'I made him eat them.'

c. Je lui ai fait manger.
I him.DAT have made eat
'I made him eat them.'

d. Je lui ai fait manger chaudes. (Koenig 1993)
I him.DAT have made eat hot.FEM.PL
'I made him eat them hot.'

Given that the causee has accusative case in (6a), where it is the only argument, and dative case in (6b), where it co-occurs with a patient argument, its dative case marking in (6c) attests to the structural reality of the null object of *manger*. Further evidence for this structural reality of the null argument is provided by the agreement phenomenon in (6d). As Koenig (1993) observes, when the predicate in (6c) is followed by an adjective with secondary-predicate function, as in (6d), this adjective agrees (audibly) in gender and (inaudibly) in number with the unexpressed complement of *manger* (assuming this complement to have feminine plural form).

3. Different types of interpretation of null complements

Following Fillmore & Kay (1995), we distinguish three semantic types of null-instantiation, regardless of whether the absence of the given element is determined pragmatically or syntactically: (i) *Indefinite Null-instantiation*, (ii)

Definite Null-instantiation, and (iii) *Free Null-instantiation*.[4] In the first, the referent of the null complement is left entirely unspecified; in the second, the referent is a specific entity or situation evoked in the speech context; in the third, the referent can be either specific or non-specific, the choice of interpretation being left up to the hearer.

In addition to these three interpretive categories, we distinguish, with Fillmore & Kay, two types of situation licensing the omission of a given argument: (i) *lexical licensing* and (ii) *constructional licensing*. In the first, the null option is provided by the lexical properties of a particular verb or group of verbs; in the second, it is provided by the particular grammatical construction in which the verb occurs. The label 'lexical licensing' will turn out to be something of a misnomer in the sense that it is typically not the semantic properties of a given verb that license the null-instantiation of the argument but rather the common occurrence of a real-world situation involving the activity or state denoted by the verb. In other words, lexical licensing is often governed pragmatically rather than semantically.[5]

3.1 Indefinite Null-instantiation

In the case of Indefinite Null-instantiation (hereafter INI), the referent of the null element is not only 'indefinite', i.e. assumed to be unidentifiable by the addressee (Lambrecht 1994: Ch. 3.2), but its interpretation is necessarily independent of the context, in other words, the null element cannot represent an entity or situation directly or indirectly evoked in the discourse. To characterize this property of INI, Fillmore (1986) refers to the null element as being 'markedly indefinite'.[6] In all instances of INI, the focus is on the activity denoted by the verb rather than on the object of the activity. If the indefinite null complement were to be made overt, it would appear as an indefinite expression with *non-specific* construal, like 'someone', 'something', or 'stuff' in the singular or 'people' or 'things' in the plural. As Goldberg (2001) notes for certain cases of INI in English, the referent of the null element lacks discourse prominence to the point of being neither topical nor focal. Given this non-specific indefinite character of the null-instantiated argument, a sentence involving INI is always construed as describing an aspectually unbounded situation (an atelic event). All instances of INI seem to be lexically licensed, i.e. there don't seem to exist any constructions which specifically license INI construal.

3.1.1 *Non-habitual construal*

In one type of INI construal, the sentence containing the omitted complement describes a particular situation of an agent or experiencer being involved in the activity or state denoted by the verb:

(7) a. Maman est occupée; elle coud / repasse / lit / peint / etc.
'Mom is busy; she is sewing / ironing / reading / painting / etc.'
b. Est-ce qu'ils embauchent chez Renault?
'Are they hiring at the Renault plant?'
c. La fumée était si épaisse qu'on ne voyait plus.
'The smoke was so thick that you couldn't see anymore.'
d. J'avais tellement mal à la gorge que je ne pouvais ni manger ni boire.
'My throat hurt so much that I couldn't eat or drink.'

In each of these sentences, the referent of the implicit complement is taken to be unknown or irrelevant in the context. The unbounded nature of the predicates denoted in (7) is shown by their incompatibility with temporal adverbial phrases introduced by French *en* or English *in* (cf. *Maman a repassé pendant* (**en*) *une heure* 'Mom ironed for (*in) an hour' etc.). A sentence like *Maman a cousu quelque chose en cinq minutes* 'Mom sewed something in five minutes' is interpretable only if the indefinite pronoun is taken to denote a specific object (which may or may not be identifiable for the speaker). In such a situation, null-instantiation would be impossible.

Sentences of the type illustrated in (7c) and (7d), which involve modality, are subject to an aspectual constraint having to do with the stative construal of the predicate (notice the necessary appearance of the stative modal *can* in the English gloss of (7c)). Thus, if one wanted to express a change having taken place in the situations described in (7c) or (7d), the verb would still have to be in the imperfect tense (expressing imperfective aspect) rather than in the perfective compound past:

(7′) c. Une fois sorti de la forêt, on voyait (#on a vu) de nouveau.
'Once you were out of the forest you could see again.'
d. Deux heures plus tard, je mangeais (#j'ai mangé) de nouveau.
'Two hours later, I was eating (I ate) again.'

In (7′c), the perfect form *on a vu* 'you saw' would necessarily be interpreted as evoking a definite object referent (e.g. *on a vu ce qui s'était passé* 'you saw what (had) happened'). Likewise in (7′d), the perfect form *j'ai mangé* would evoke the idea of a meal rather than some undetermined edible thing (cf. ex. (10b) below).

Evidence that the INI construal in the sentences in (7) should indeed be described as being licensed by particular lexical items is provided by the fact that other verbs with analogous meanings do not permit, or permit less readily, this type of construal:

(8) a. ?Maman est occupée; elle répare / brosse / décore / etc.
'Mom is busy; she is repairing / brushing / decorating / etc.'
b. ?La fumée était si épaisse qu'on ne reconnaissait plus.
'The smoke was so thick that you couldn't recognize anymore.'
c. ?J'avais tellement mal à la gorge que je ne pouvais ni dévorer ni déguster.
'My throat hurt so much that I couldn't devour or taste.'

Let us emphasize, however, that nothing in the lexical nature of the verbs in (8) necessarily prevents INI of their complements. Rather it is the *non-conventionalized* status of the *situations* denoted by these verbs that makes the examples questionable in the absence of context. Thus in a real-world situation in which recognizing objects on pictures were a kind of activity routinely engaged in by a certain group of people, a member of such a group could no doubt utter (8b) without sounding odd. The same holds true of the activities of repairing, brushing, decorating, devouring, or tasting described in (8a) or (8c). As a matter of fact, the verb *déguster* lends itself quite naturally to INI in the context evoked in (8c′):

(8) c′. Chez le marchand de vin au fond de la rue on ne peut plus déguster.
'At the wine merchant's down the street you can't taste (wines) anymore.'

As far as French is concerned, we thus depart from Fillmore & Kay's assessment (1995: 7–4) that lexical licensing in INI is "found in a fairly small class of verbs, including *eat, drink, sing, cook, sew* and *bake*." Let us also mention the fact, pointed out by Jacobs (1994b: 15) for German, that INI is regularly licensed in what Fillmore (1982) refers to as 'across-frame negation', illustrated in such sentences as *Il ne mange pas, il dévore* 'He doesn't eat, he devours' or *Elle ne boit pas, elle déguste* 'She doesn't drink, she tastes', whose communicative point is to reevaluate a given activity within an alternative semantic frame. This is consistent with our initial assessment that in INI the speaker's focus is on the activity denoted by the verb rather than on the object of the activity.

To prevent misunderstandings, we should emphasize that in characterizing an indefinite null-instantiated element as 'unspecified' we are not concerned with its *lexical semantic* properties but with its *pragmatic construal* in discourse.

It is irrelevant, for example, that the understood object of the verb *iron* in (7a) denotes not just a thing but something made of cloth or that the object of *hire* in (7e) denotes not just any people but workers. What counts in INI is the degree of (non-)specificity which the referent of the unexpressed complement has in the minds of the speech participants at given points in a discourse (Lambrecht 1994: Ch. 3).

This is not to say that the lexical properties of a verb cannot be a factor contributing to the possibility of INI construal. For example Goldberg (2001) notes that the semantics of the verb *recycle* favors INI compared to that of the verb *break* (cf. *My neighbors recycle* vs. ?*My neighbors break*) because *recycle* tells us more about the nature of its potential objects than does *break*, thus making it conversationally less relevant to verbalize the object. Nevertheless, what is left unspecified in INI is not the lexical nature of the complement (in this case recyclable items vs. breakable things in general) but the individuality of the referent in a given discourse situation.

3.1.2 *Habitual construal*

In another type of INI construal, the predicate is understood as denoting a habitual activity or state of the subject, or the negation of such an activity or state:

(9) a. Mon oncle construit / vend / exporte / creuse / etc.
'My uncle builds / sells / exports / digs / etc.'

b. Mon chien ne mord pas.
'My dog doesn't bite.'

c. Le bourgeois ne produit pas: il dirige, administre, répartit, achète et vend. (Sartre)
'The bourgeois does not produce: he directs, manages, distributes, buys, and sells.'

d. Il paraît que c'est la lionne qui va chasser et qui amène. (Corpus Giacomi)
'It seems that it is the lioness that goes hunting and that brings back.'

e. Les écrivains attirent sexuellement. (M. Duras)
'Writers attract sexually.'

f. Tu ne tueras pas.
'Thou shalt not kill.'

Unlike (7), the sentences in (9) do not refer to particular instances of the activity or state described by the predicate (the verbs in the English glosses cannot be in the progressive form). For example, the sentences in (9a) could serve as answers to a question like 'What does your uncle do for a living?' (cf. Fónagy

1985: 24). The meaning of the different predicates in (9a) is comparable to that of their nominal counterparts in *Mon oncle est constructeur, vendeur, exportateur*, etc. 'My uncle is a builder / seller / exporter' etc. The habitual nature of the activity or state is often interpreted as a characteristic *property* of the subject, as in (9b/c/d/e) and, *mutatis mutandis*, (9f) (cf. Fellbaum & Kegl 1989; Levin 1993: 39; Blume 1993). This property can be attributed to a specific individual, as in (9b/f), or generically to a class, as in (9c/d/e). Property construal of a predicate, and hence use of INI, is favored by the presence of modal verbs such as 'be able' or 'like', as in *Ce type sait masser* 'This guy knows how to massage' or *Elle aime taquiner* 'She likes to tease' etc. (cf. Jacobs 1994b and Blume 1993).

As in the case of non-habitual INI construal in (7), the label 'lexically-licensed' is somewhat infelicitous as applied to (9) because there are no obvious semantic restrictions on the verbs that permit this type of construal. This is especially clear in the case of the verb *amener* 'to bring' in (9d) (a spontaneously produced utterance). This verb is not normally understood as denoting a habitual activity but it is naturally construed as habitual in the particular situation evoked in (9d). The complement of *amène* (lit. 'brings') receives INI construal because the semantic frame evoked with the words *lionne* and *chasser* narrows down the class of possible objects to that of animals routinely hunted and killed for survival. Thus any transitive verb is in principle a candidate for this type of INI construal, provided that the situation evoked by the verb can be construed as habitual or otherwise typical of the subject.

3.1.3 *Subtype construal*

One well-known case of lexically-licensed INI is that illustrated in (10), where the implicit complement denotes a *subtype* of the type of object selected by the verb (cf. Blinkenberg 1960: 117):

(10) a. Il a encore bu.
'He drank again.'
b. Non merci, j'ai déjà mangé.
'No thanks, I've already eaten.'
c. Je vais emprunter. / J'ai déjà contribué. / Ça rapporte.[7]
'I'm going to borrow. / I've already contributed. / It brings in (i.e. it pays well).'
d. Je fais où on me dit de faire. (Poster in Paris representing a little dog, Fónagy 1985)
'I go (lit. 'I make') where I am told (to go).'

In (10a), the referent of the implicit complement is understood as 'alcohol' (in excesssive quantity), in (10b) as 'a meal', in (10c) as 'money', and in (10d) as a bodily function. What is important in the classification of these examples is that, as in (7), the null complement cannot represent a specific referent recoverable from the discourse context.

The subtype construal in (10) cross-cuts the habitual/non-habitual distinction established with (7) vs. (9). While (10a) refers to a particular instance of alcohol consumption, a sentence like *Il boit* 'He drinks' is likely to be understood as referring to a habit. Similarly, while (10d) receives habitual construal, a sentence like *Ton chien a fait sur mon tapis* 'Your dog went on my rug' would be understood as describing a specific instance of the activity in question. It should also be noted that the complements of the verbs in (10) do not have to be interpreted in the restricted sense suggested in these sentences, as shown for example in (7d), where the things which the speaker is kept from eating or drinking are not meals and alcohol (although the speaker may have those in mind) but any edible or drinkable substance. Thus one type of INI does not necessarily exclude another.

3.2 Definite Null-instantiation

In the case of Definite Null-instantiation (hereafter DNI), the null element is interpreted as representing an entity or situation whose identity is *recoverable from the discourse context* (whether linguistic or extralinguistic). The following quote nicely captures the fundamental difference between INI and DNI:

> One test for the (INI/DNI) distinction has to do with determining whether it would sound odd for a speaker to admit ignorance of the identity of the referent of the missing phrase. It's not odd to say things like "He was eating; I wonder what he was eating"; but it is odd to say things like "They found out; I wonder what they found out." The missing object of the surface-intransitive verb EAT is indefinite; the missing object of the surface-intransitive verb FIND OUT is definite. The point is that one does not wonder about what one already knows. (Fillmore 1986: 97)[8]

One interpretive dimension not taken into account by Fillmore, which we believe to be crucial for distinguishing different types of DNI, is the pragmatic dimension of different *degrees of discourse salience* (the parameter of referent activation in Chafe 1987), as well as the dimension of the pragmatic relations of *topic* and *focus* (Lambrecht 1994: Chs. 4 and 5). In what follows, we will show

that different types of DNI can be distinguished in terms of these discourse categories.

3.2.1 *Constructionally licensed DNI*

The clearest example of constructionally-licensed DNI is the case of the *relative-clause construction* introduced by the complementizer *que*. In this construction, the null complement is interpreted as being coreferential with an antecedent in the sentence containing the relative clause:

(11) a. le truc que j'ai mangé
'the thing that I ate'
b. les chaussettes qu'elle a besoin
'the socks that she needs'

(In standard French the relativized argument in (11b) would have to appear in the form of the distant-instantiated relative pronoun *dont*, as shown in (2a) above). As we observed at the beginning with item (2′), in non-standard French the relative construction in (11) also permits direct instantiation of a personal pronoun:

(11′) a. le truc que je l'ai mangé
'the thing that I ate it'
b. les chaussettes qu'elle en a besoin
'the socks that she needs them'

The possibility of overt pronominal expression in (11′) is clear evidence that the clause-introducer *que* in (11) is indeed an empty complementizer rather than a relative pronoun, hence that these sentences can be counted as instances of DNI of the structural ellipsis type.[9]

A second, often-cited, case of constructionally-licensed DNI is the *Imperative* construction, which requires null-instantiation of the subject argument representing the addressee. As Bally (1932) observes, overt subject expression is superfluous in the imperative since the deictic status of the addressee in the speech situation makes the referent uniquely identifiable. Since this case of DNI is not an instance of structural ellipsis proper (in French the subject of the imperative cannot be phonetically realized) and since, moreover, it involves subject rather than object arguments, the finite imperative construction will not concern us here (but see items (41) through (44) below).

There exists, however, a different kind of imperative construction, which does involve object DNI. We have in mind the cross-linguistically widely at-

tested *Infinitival Imperative*, used in various instructional contexts, such as cooking recipes or directions for the use of pharmaceutical products:[10]

(12) a. Faire revenir dans du beurre. (e.g. les oignons)
'Sauté in butter.' (e.g. the onions)
b. Verser dans de l'eau bouillante. (e.g. les pâtes)
'Drop into boiling water.' (e.g. the noodles)
c. Secouer avant l'emploi.
'Shake before using.'
d. Avaler sans mâcher.
'Swallow without chewing.'

In the situations conjured up by these sentences, the understood objects represent specific entities which are present in the linguistic or extra-linguistic context (cooking ingredients in (12a, b), a bottle with medicine in (12c), a pill in (12d)). Notice that the infinitival construction in (12) involves not only definite null-instantiation of the object but also free null-instantiation of the subject of the infinitive, an issue to which we will return in Section 3.3. It is worth pointing out also that these subjects can be said to have the semantic role of 'causee', a role which we will see favors free construal of a null argument (cf. the discussion of exx. (23) and (25) below).

3.2.2 *Lexically licensed DNI*

3.2.2.1 *Frame-induced referents.* To account for one type of lexically licensed DNI, it is useful to refer again to the notion of a semantic *frame* as developed in much work by Fillmore (e.g. Fillmore 1982). Certain verbs permit or favor the omission of a definite object complement if in a given speech situation the scene described by the predicate evokes the referent via such a frame relation. The objects omitted under these conditions can be *direct* or *oblique*. Some examples of null-instantiated *direct* objects are given in (13):

(13) a. (Upon hearing the doorbell)
Va ouvrir!
'Go open up.'
b. A quelle heure vous fermez?
'What time do you close?'
c. Ils ont gagné. Ils ont perdu.
'They won. They lost.'
d. Je jouai du piano. Puis nous avons éteint. (M. Duras)
'I played the piano. Then we turned (the lights) off.'

e. Elle a signé.
'She signed.'
f. Ne quittez pas!
'Can you hold, please?' (lit. 'Do not leave!')

In the given utterance context, one has no difficulty supplying *la porte* 'the door' in (13a) since the ring of a doorbell evokes a given door. Analogous semantic frame relations explain the recoverability, under appropriate discourse circumstances, of *le magasin* 'the store' in (13b), *le match* or *la partie* 'the game' in (13c), *la lumière* 'the lights' in (13d), and *le contrat* 'the contract' in (13e).[11] In the case of (13f), the sentential structure has become a fixed formula reserved for one specific conversational purpose (that of keeping a telephone interlocutor from hanging up), thus making overt expression of the complement (*l'appareil* 'the phone') unnatural and prohibiting other forms of the verb (cf. ??*Elle n'a pas quitté* 'She held').

On the other hand, if the frame relation between the verb and its object is not evoked strongly enough by a given scene, the complement cannot be omitted with the same ease:[12]

(14) a. (Upon hearing someone knock at the window)
?Va ouvrir! [compare (13a)]
'Go open (it)!'
b. (Upon hearing the doorbell)
?Va entr'ouvrir. [compare (13a)]
'Go open (the door) half-way.'
c. *Ils ont battu. [compare (13c)]
'They beat (them).'

To let visitors in, one normally opens the door, not the window (cf. (14a)), and one opens it wide enough to facilitate entry (cf. (14b)). In (14c) the verb *battre* 'beat', unlike *gagner* 'win' or perdre 'lose' in (13c), does not seem to evoke the competition frame clearly enough to make DNI acceptable. In the latter case, the difference in animacy between the object of *win* (a game) and that of *beat* (a person or group of persons) is likely to be another determining factor.

Some examples of *oblique* null complements made accessible by the semantic frame evoked by a verb are given in (15):

(15) a. Est-ce qu'elle est arrivée?
'Has she arrived?'
b. Il a contribué trois mille francs.
'He contributed three thousand francs.'

c. (The phone rings)
Va répondre!
'Go answer the phone!'
d. L'avion n'a pas encore atterri.
'The plane hasn't landed yet.'
e. Je n'ai pas envie de jouer. Je ne gagne jamais. Je perds toujours.
'I don't feel like playing. I never win. I always lose.'
f. Entrez!
'Come in!'

In (15a), the implicit complement could be *ici*, *chez elle*, *à Poitiers* 'here, at home, in Poitiers', etc., depending on the speech context. In (15b), it refers to a specific organization to which a contribution was made (e.g. *à votre mouvement* 'to your movement').[13] In (15c), the hearer mentally supplies *au téléphone* '(to) the phone', in (15d) *à l'aéroport* 'at the airport', in (15e) *aux cartes* 'at card games' (or other games), and in (15f) *dans la maison* 'into the house' (or some other inhabitable enclosed place). Interestingly, all of the null-instantiated oblique objects in (15), as in (13), refer to *things* rather than *persons*.

The examples of frame-induced DNI in (13) and (15) have an important feature in common with the subtype construal of INI illustrated in (10). In both cases, the implicit object represents a *subset* of the set of objects selected by a given verb. For example the set of possible objects of the verb *gagner* in (13c) includes not only competitive events but money, a prize, time, a reputation, someone's favor, bodily weight, and even certain locations (as in *Ils ont gagné le sommet* 'They reached the summit'). But it is only in the first case (competitive events) that frame-induced referent construal is possible. Similarly, the verb *quitter* 'to leave' is commonly used not only for a (particular kind of) place, as in (13f), but also for people. It would make sense if *Ne quittez pas!* could also be used to mean 'Don't leave your wife!', but it can't.

There is a crucial interpretive difference between these cases of frame-induced DNI and the DNI cases to be discussed in the remainder of this chapter. In the type illustrated in (13) and (15) the unexpressed referent, although specific and pragmatically accessible from the context, cannot be *anaphoric*, i.e. cannot be a previously activated topic of conversation. This construal property of frame-induced DNI has a clear formal correlate. If, in the stereotypical situations assumed for (13) and (15), the null complement were to be made explicit, the overt expression could *not* be an unaccented pronoun; rather it would appear as a definite *lexical* phrase with prosodic prominence. In other words, the

null argument would not be a *topic* but a *focus* expression (Lambrecht 1994: Ch. 5). Consider these variants of some of the examples in (13) and (15):

(13′) a. (Upon hearing the doorbell)
#Va l'ouvrir! / Va ouvrir la PORTE!
'Go open it! / Go open the DOOR!'

b. #A quelle heure vous le fermez? / A quelle heure vous fermez le MAGASIN?
'What time do you close it? / What time do you close the STORE?'

c. #Ils l'ont gagné/perdu. / Ils ont gagné/perdu le MATCH.
'They won/lost it. / They won/lost the GAME.'

d. Je jouai du piano. #Puis nous l'avons éteinte. / Puis nous avons éteint la LUMIÈRE.
'I played the piano. Then we turned them off. / The we turned the LIGHTS off.'

(15′) a. #Est-ce qu'elle y est arrivée? / Est-ce qu'elle est arrivée chez ELLE?'
'Has she arrived there? / Has she arrived at HOME?'

c. (The phone rings.)
#Va y répondre! / Va répondre au TÉLÉPHONE!
'Go answer it! / Go answer the PHONE!'

e. #Je n'ai pas envie d'y jouer. / Je n'ai pas envie de jouer aux CARTES.'
'I don't feel like playing it. / I don't feel like playing CARDS.'

(It goes without saying that the examples marked as pragmatically inappropriate would be perfectly natural in anaphoric contexts.) In some cases, it is difficult to find an appropriate nominal focus expression, as in the earlier-mentioned conventionalized case of (13f) (*Ne quittez pas*! 'Can you hold?') or in the case of *atterrir* 'to land' in (15d), where use of an explicit complement ('on the ground', 'at the airport') would be redundant in most situations. This does not, however, invalidate the theoretical point we are making. In the case of frame-induced DNI, the referent of the understood complement does not have the degree of discourse-salience or topicality necessary to justify the use of an anaphoric pronoun. While, according to our definition of DNI, the frame-induced referent must be recoverable from the discourse context, it is not a *discourse referent*, in the sense of Karttunen (1969).[14]

3.2.2.2 *Topical referents.* Unlike the case of frame-induced DNI, the cases we will discuss now involve referents which are not only discourse-active, that is to say, which the speaker assumes to be in one way or another present in the mind of the addressee at utterance time (Chafe 1987), but which have the pragmatic

status of *ratified topics*, i.e. of topical elements whose occurrence in the proposition is taken to be predictable at the time of utterance (Lambrecht 1994: 322ff.; Lambrecht & Michaelis 1998). We will refer to this type of null-instantion as *Topical DNI*.[15] The pragmatic force of the Topical DNI complement is closely related to that of an unaccented personal pronoun.

For a large number of verbs permitting Topical DNI the null argument corresponds to a (finite or infinitival) subordinate clause rather than to a nominal complement (cf. the comment on example (5c) above), i.e. the object denotatum is not an entity but a situation. Common instances are shown in (16) (the parenthetical complements are optional in French):

(16) a. Je n'arrive pas (à me débarrasser de lui).
'I can't (get rid of him).'
b. Elle n'a pas envie (de l'embrasser).
'She doesn't feel like (kissing him).'
c. Elle n'ose pas (y aller).
'She's afraid to (go there).'
d. Il n'a pas voulu (le faire / que je le fasse).
'He didn't want (to do it / for me to do it).'
e. Elle a insisté (pour que je le fasse).
'She insisted (that I do it).'
f. Je vais lui demander (ce qu'il en est).
'I'm going to ask him (what this is about).'

The complements of the verbs in (16) are anaphoric and can in principle also appear in the form of unaccented pronouns, indicating ratified-topic status of the denoted referents (cf. *Je n'y arrive pas, Elle n'en a pas envie*, etc.). In some cases, the null complement and the overt pronoun receive distinct semantic interpretations. Compare (16d), where the understood argument is an infinitival or finite complement clause, and *Il ne l'a pas voulu* ('He didn't want him/it'), where the object pronoun is construed as denoting an entity, or (16f), which involves an understood indirect interrogative, and *Je vais le lui demander* ('I'm going to ask him for it'), where the overt pronoun is most likely construed as referring to a thing.

Other verbs selecting infinitival or finite complement clauses do not permit DNI, or do not permit it as freely:

(17) ?Il ne désire pas (te voir). / ?Je sens (que ça va arriver). / ??Je compte (le faire) / *Je tiens (à le faire). / etc.
'He doesn't desire (to see you). / I feel (that it's going to happen). / I'm counting (on doing it). / I'm anxious (to do it). / etc.'

Given the diminished acceptability of the sentences in (17), at least in contextual isolation, it seems justified to categorize the examples in (16) as instances of lexically-licensed DNI.

The Topical DNI type we are especially interested in here, and which was introduced at the beginning of our study, is that in which the referent of the unexpressed argument represents a *specific discourse entity*. Some attested examples are cited in (18).[16] Here and in the following examples, we add an overt complement in parentheses in the English glosses whenever appropriate:

(18) a. (Daughter looking at a wrapped gift presented to her mother) Ouvre! (corpus Lambrecht)
'Open (it)!'
b. Avant, j'avais mon dossier à Jester, mais j'ai enlevé. (corpus Lemoine)
'Before I had my file at Jester but I took (it) away.'
c. (Talking about a cassette which is at a friend's house)
Je vais demander si je peux passer ce soir prendre. (corpus Daniel)
'I'm going to ask (them) if I can come by tonight to get (it).'

As in (16), the null complements of the verbs in (18) can in principle also appear in the form of unaccented pronouns (but see the proviso in Section 4.1 below). Notice that without the given context (18a) would be ambiguous between the Topical DNI reading and the frame-induced reading illustrated in (13a) ('Open the door!'), where no anaphoric pronoun could be used. Example (18c) contains two instances of null-instantiation, that of the oblique object of *demander* (the source argument of French *demander* 'to ask' is realized as oblique) and that of the direct object of *prendre* 'take'. While the second is clearly an instance of topical DNI, it would seem that the first is better analyzed as a case of Free Null-instantiation (cf. the discussion of (25) and (42) through (44) below).

It appears that in spoken French the verbs that permit Topical DNI with nominal arguments do not constitute a natural lexical class. Moreover, there seems to be no constraint on the semantic role which the definite null-instantiated complement can have.[17] The null option can therefore be said to be generalized, the constraints on its application being mainly (but not exclusively) pragmatic or stylistic. We will return to this DNI type in Sections 4 and 5.

3.3 Free Null-instantiation

Free Null-instantiation (hereafter FNI) is distinct from INI and from DNI in that the referent of the absent element is susceptible to either an indefinite or a definite interpretation, depending on the context of utterance.[18] Moreover, the 'definite' interpretation in FNI differs from the DNI interpretation discussed in the previous section in that the null element, though construed as denoting an identifiable referent, is neither anaphoric nor frame-induced and that this referent strongly tends to be human (or at least animate). Its interpretation is 'free' in the sense that it is up to the addressee to choose the referent most appropriate to a given speech situation. This freedom of interpretation is reminiscent of the freedom with which the pronouns *you* or *one* in English (*on* in French, *man* in German) can be construed as either referring to the speaker and the hearer or to some unidentified individual or set of individuals.[19] The set of contexts permitting FNI cannot, therefore, be reduced to the sum of the contexts permitting either INI or DNI, i.e. FNI is an interpretive category of its own (pace Schoessler 2000; Larjavaara 2000).

3.3.1 *Constructionally licensed FNI*

At least two grammatical constructions license free null-instantiation of nominal complements. The first is the well-known case of the *Passive Construction* (including passive construal of the *Causative-Faire Construction*). Depending on the context of utterance, the unexpressed agent in a passive sentence can receive an indefinite or definite interpretation:

(19) Nous avons été attaquées. / Elle l'a fait arrêter. / Il s'est fait attraper. / Elle s'est fait renverser. / etc.
'We were attacked. / She had him arrested. / He got caught. / She got run over. / etc.'

In each of these sentences, the understood agent can be completely undetermined (non-specific 'someone') or it can be a specific individual suggested by the context. To use Fillmore's earlier-mentioned test, each of the examples in (19) could be appropriately followed either by 'but we don't know by who' or 'and you know full well by who'. For instance, in the sentence *Il s'est fait attraper* 'He got caught', the unexpressed agent can be either an unidentified person or group or an individual or set of individuals contextually associated with the described situation (the police, the parents, the teacher, the speaker, the addressee, etc). The agent cannot, however, be an established discourse topic, i.e.

the null argument could not be replaced by an anaphoric pronoun (cf. Koenig & Mauner 2000).

The second construction licensing FNI is that involving an infinitival clause with an uncontrolled, i.e. non-coinstantiated, subject, which is necessarily construed as human (cf. (5a) and discussion):

(20) a. Mourir pour son pays n'est pas un triste sort. (Racine)
'To die for one's country is not a sad fate.'
b. Songe à la douceur d'aller là-bas vivre ensemble! (Baudelaire)
'Imagine the sweetness of going there and living together.'
c. Il fallait partir.
'It was necessary to leave. / You should have left.'
d. Secouer avant l'emploi. (=12c)
'Shake before using.'

As in the case of the understood agent in the passive construction, the understood subject in (20) can be freely construed as either identifiable or unidentifiable by the addressee. In (20a) for example, it suffices to change the possessive determiner (*Mourir pour ton/mon pays*... 'To die for your/my country...') to suggest a definite interpretation of the subject of the infinitival phrase. In the famous verse in (20b), the understood subject of the infinitive is contextually construed as *toi et moi* 'you and I', the poet and his beloved. The same situation obtains in (20c), except that the impersonal verb *falloir* 'to be necessary' has an additional oblique argument, which is also null-instantiated in this sentence, but whose overt expression would result in coinstantiation instead of FNI (cf. *Il lui fallait partir* 'It was necessary for her (or him) to leave / She (or He) had to leave'). (20d) illustrates the earlier-discussed infinitival imperative construction, which involves both FNI of the subject and DNI of the object. It shows that FNI construal of the subjects of infinitives is not limited to infinitival complements but seems to be an inherent property of any infinitive with an uncontrolled subject. Since the infinitival construction in (20) does not involve structural ellipsis in the sense of Zribi-Hertz we will not discuss it any further here.

3.3.2 *Lexically licensed FNI*

In the case of lexically licensed FNI, it appears that the verbs permitting this type of null-instantiation can be divided into lexical classes according to the thematic role type of the implicit argument. A first class consists of verbs whose object complement has the role of *experiencer* (the parenthetical com-

plements in the glosses, which are required in English, are chosen more or less randomly):

(21) a. Ça fait du bien. / Ça fait mal. / Ça gêne. / Arrête d'embêter. / Ça surprend. / etc.
'It does (me/one) good. / It hurts. / It bothers (us/people). / Stop annoying (me/everyone). / That surprises (us/people). / etc.'
b. Bon ben, j'agace. (*La cage aux folles*)
'OK, I irritate (you/everyone/people).'
c. Vos vêtements surprennent pour un professeur. (Larjavaara 1998)
'Your clothes surprise (me/people) for a professor.'
d. Pourquoi elle reste dans son coin à attendre toute sa vie ce type pas intéressant? Ça énerve un peu. (Larjavaara 2000)
'Why does she stay in her corner waiting all her life for this uninteresting guy? It irritates (me/one) quite a bit.'

In each of these sentences, the intended referent can be either people in general or a particular individual or group of individuals. This individual is typically either the speaker (*Arrête d'embêter!* 'Stop bothering (me)!') or the addressee (*Attention, ça va faire mal* 'Watch out, it's gonna hurt (you)'), but it can also be a third person whose point of view is being expressed by the sentence (*Elle savait que cela allait faire mal* 'She knew it was going to hurt (her)'). The specific interpretation is naturally dominant if the aspect of the verb suggests a non-habitual situation.

The lexically-determined nature of this type of FNI is demonstrated by the diminished acceptability of examples such as the following, whose verbs are semantically akin to those in (21):

(22) ?Ça ennuie. / ?Ça réjouit. / ?Arrête d'engueuler. / etc.
'It annoys. / It delights. / Stop yelling (at people, at me). / etc.'

As we noted in the discussion of the INI examples in (8), it is not the lexical meaning of the verbs in (22) that makes these examples questionable but rather the absence of an established usage convention. Embedded in sufficiently explicit contexts, these examples may well become fully acceptable.

A second group licensing FNI consists of verbs whose complement expresses the semantic role of *causee* in a broad sense:

(23) a. La masturbation rend aveugle.[20]
'Masturbation makes (you) blind.'
b. Cela permet de mieux dormir.
'That allows (you) to sleep better.'

c. Le beau temps invitait à rester.
'The nice weather invited (us/them) to stay.'
d. Tu fais chier!
'You piss (me/everyone) off!' (lit. 'You make (me/everyone) shit.')
e. Les grands poètes aident à vivre. (*Roger Planchon, Le Monde*, 12/10/1985)[21]
'Great poets help (you) live.'
f. La simplicité et l'élégance des solutions ici proposées amènent à se demander pourquoi on a attendu si longtemps pour y arriver.
'The simplicity and elegance of the solutions proposed here lead (one) to wonder why it has taken so long to arrive at them.'

As before, the lexical nature of this type of null-instantiation is shown by the existence of semantically related verbs that do not permit FNI, or rather that do not permit it as easily in isolation from context:

(24) ?La police n'autorise pas à circuler dans cette rue. / ?Elle défend de fumer chez elle. / etc. (compare (23b))
'The police don't authorise (people) to drive in this street. / She prohibits (people) from smoking at her place.'

It is interesting to observe that the FNI type illustrated in (23) is not acceptable in English (compare **Masturbation makes blind*, **That allows to sleep better*, **The nice weather invited to stay*, etc). It is the unacceptability in English of this type of sentence that gave rise to what is commonly known as 'Bach's generalization' (Bach 1979), according to which the subject of an infinitive in Equi-type structures cannot be controlled by a null antecedent.[22]

Finally, a third group consisting of *verbs of communication* such as *raconter* 'tell', *rappeler* 'remind', *répondre* 'answer', *objecter* 'object', *annoncer* 'announce', etc., permit the omission of the direct or indirect object expressing the role of *goal* or *recipient* of the communication:

(25) a. La servante rappelait toujours fièrement que Mlle Amanda était arrivée à la maison un soir. (G. Prassinos)
'The maid always reminded (people/us) proudly that Miss Amanda had arrived at the house one evening.'
b. "Les policiers ont cambriolé ma maison", raconte un matin à l'école Julie, 6 ans. (Nouvel Observateur, 1990)
"'The police burglarized my house," six-year-old Julie tells (us/people) one morning at school.'

c. Après on avisera. (Fónagy 1985)
'Afterwards, we'll notify (you/people).'

As the verbs in (25a) and (25c) show, the semantic role of goal or recipient of a communication is closely related to the role of causee (as in (23) above): 'to remind someone' is equivalent to 'make someone remember', 'to notify someone' to 'make someone know,' etc.

Among the verbs of communication that do not seem to permit FNI as readily as others we can cite *communiquer* 'communicate', *informer* 'inform', *décrire* 'describe', *confier* 'confide', etc.:

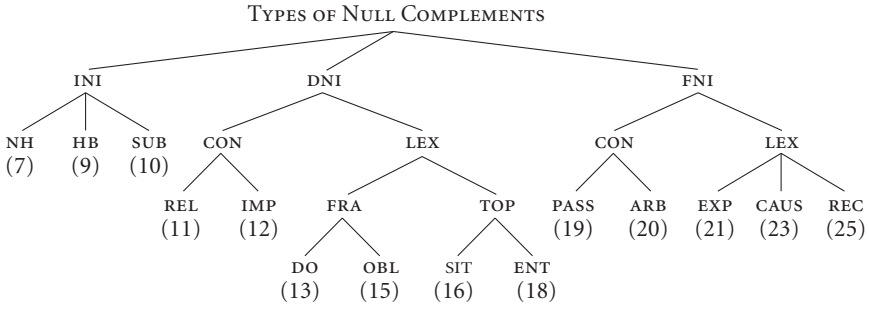
(26) ?Elle a informé qu'elle serait absente pendant quelques jours./ ?Julie a confié qu'elle était enceinte. / etc.
'She informed (us/everyone) that she would be absent for a few days. / Julie confided (to us/them) that she was pregnant.'

The acceptability status of such sentences is strongly context-dependant. For example, the attested sentence in (25c), involving the verb *aviser* 'to notify', might well be unacceptable to many speakers unless provided with a sufficiently explicit context.

3.4 Summary

The diagram in (27) represents the range of possible interpretations of null complements in French as discussed in Section 3. The numbers in parentheses refer to examples discussed in the text:

(27)



[Abbreviations used, in left-to-right and top-to-bottom order: NH: Non-habitual construal; HB: habitual construal; SUB: argument denotes subtype of selected complement type; CON: constructionally licensed; LEX: lexically licensed; REL: relative clause; IMP: infinitival imperative; FRA: frame-induced

referent; TOP: topical referent; PASS: agent phrase in passive construction; ARB: uncontrolled subject of an infinitive; EXP: experiencer; CAUS: causee; REC: recipient of a communication; DO: direct object; OBL: oblique object; SIT: situation; ENT: entity.]

We now turn to the discussion of the DNI type illustrated in (18), in which the null-instantiated argument denotes a specific entity with ratified-topic status in the discourse.

4. Definite null complements as ratified topics

In categorizing Topical DNI sentences like (5b/c) or (18a/b/c) as instances of structural ellipsis, we have been implicitly claiming that the null-instantiation of the definite complements in these examples results from a choice on the part of the speaker, the null pronoun alternating with an overt lexical or pronominal expression. The theoretical question posed by this kind of DNI is then the following: what are the formal or functional conditions determining a speaker's choice between null-instantiation of a referentially specific argument and overt representation in full lexical or pronominal form?

In the current state of our research, we can offer only a preliminary answer to this question. We are confident, however, that whatever the definitive answer will be, it will involve heterogeneous factors from different levels of the grammatical system: morphosyntax, semantics, pragmatics, and phonology. In the rest of our chapter , we will discuss a number of such heterogeneous factors.

4.1 Morphosyntactic factors

One of the advantages of the null option in Topical DNI is that it allows speakers to compensate for certain gaps in the personal-pronoun paradigm or to bypass certain constraints on linear sequencing (cf. Zribi-Hertz 1984: 19 for a similar observation regarding null-pronoun use after certain prepositions).[23] Consider the following example (the speakers are French instructors; 508 is the number of a course):

(28) A: Ah non, il y a pas 508 l'été. C'est ça que tu veux dire?
B: Non, y a pas. (corpus Lemoine)
A: 'Ah no, there's no 508 in the summer. Is that what you mean?'
B: 'No, there isn't.'

In this example, the structure *y a pas* 'there isn't' contrasts with the explicit *y en a pas* 'there isn't/aren't any', contaning partitive *en*, which would be semantically inappropriate in the context, and *(*il*) *l'y a pas* 'there isn't it', containing elided accusative *le*, which is ill-formed (in the relevant sense where *il* is non-referential).[24] Speaker B in (28) resorts thus to null-instantiation simply because the grammar of French offers no convenient alternative. The same motivation seems to hold for the null-instantiation in the English *there isn't*.

A slightly different case of morphosyntactic motivation is illustrated in example (29):

(29) A: J'ai un truc pour toi si ça t'intéresse.
B: C'est quoi?
A: Je crois que t'aimes bien, toi, ce genre de truc. J'ai trouvé hier. (Corpus Romero)
A: 'I got something for you if you're interested.'
B: 'What is it?'
A: 'I think you like that kind of thing. I found (it) yesterday.'

It is known that the syntactic behavior of unstressed *ça* 'it' in object function is exceptional in that this pronoun occupies postverbal position while belonging to the set of bound pronouns whose other members appear before the verb. Unaccented *ça* thus constitutes an irregularity in the bound-pronoun paradigm. It seems likely that the use of DNI in (29) is motivated by the speaker's desire to avoid the anomalous structures *Je crois que t'aimes bien ça, toi, ce genre de truc* and *J'ai trouvé ça hier*, which contain postverbal unaccented *ça*.[25] The desire to avoid the use of *ça* as an object is clearly manifested in (30):

(30) A: Alors, tu détestes, ce magasin Sam's?
B: Je déteste pas. Ça me fait peur. (Corpus Romero)
A: 'So you hate (it), that store Sam's?'
B: 'I don't hate (it). It scares me.'

Both speakers avoid the pronoun *ça* in postverbal direct-object position while speaker B resorts to its use as a preverbal subject.

One syntactic issue arising with Topical DNI is that of the possible *grammatical functions* of the omitted complement. At the present stage of our research, we can only observe that the vast majority of omitted complements in our corpus are direct objects. However, we have also found examples with indirect (cf. (18c/42/43)) and oblique (cf. (35)) null objects. In the case of indirect null objects, it seems that these are not instances of DNI but FNI, as in (25) above (see the discussion of (42/43) below). Further research and a greater

number of attested examples are needed to make more definitive statements concerning this issue.

4.2 Semantic factors

In some cases, the speaker resorts to Topical DNI because the available overt pronouns do not allow for unambiguous designation of the referent. In such cases, the null option represents a kind of *default* solution. For example, the null complement can be selected to avoid the common generic interpretation of *ça* or the preferred human interpretation of *le/la/les* with certain verbs (especially *aimer* 'love, like').[26] Consider the following example:

(31) (Tasting a wine)
J'aime. – #J'aime ça. – #Je l'aime.
'I like (it).'

In the suggested speech situation, DNI allows the speaker to refer to the specific liquid being tasted while avoiding generic construal (*J'aime ça* 'I like that (kind)') or possible human reference (*Je l'aime* 'I love him/her'). Example (32) presents a similar case:

(32) A: Je vais avoir trente ans.
B: J'ai déjà eu, moi. (corpus Lemoine)
A: 'I'm going to turn thirty' (lit. 'I am going to have thirty years')
B: 'I already did.' (lit. 'I've already had, me')

In this example, the personal pronoun (*#Je les ai déjà eus, moi* 'I've already had them') would be inappropriate because it would lend to the complement a specific referential status incompatible with the indefinite quantified antecedent NP. The neuter form *ça* (*#J'ai déjà eu ça* 'I've already had that') would be equally inappropriate. The DNI option thus has the advantage of being neutral with respect to various semantic nuances.

The difference between the overt object pronoun and its null-instantiation is discussed by Frei (1979: 302) in the context of his analysis of the construction type illustrated in the right-hand side examples in (33). The author contrasts, among other things, the following minimal pairs (*les Marocaines* in (33c) refers to a cigarette brand):

(33) a. Le chianti, vous le buvez? – Le chianti, vous buvez?
'(The) Chianti, do you drink it?' '(The) Chianti, do you drink?'
b. Les bananes, tu les manges? – Les bananes, tu manges?
'(The) bananas, do you eat them?' '(The) bananas, do you eat?'
c. Les Marocaines, vous les fumez? – Les Marocaines, vous fumez?
'(The) Marocaines, do you smoke them?' '(The) Marocaines, do you smoke?'

(As is well-known, French, unlike English, uses the definite article in generic contexts.) According to Frei's "sentiment personnel" (p. 301), the versions with null complements would refer to Chianti, bananas, and Marocaines "en général" whereas the versions with overt pronouns would designate the Chianti in the addressee's glass, or the bananas or cigarettes the addressee is holding in her hands, etc. A similar observation is made by Kihm (1988), who discusses the contrast in (34):

(34) a. Corneille, je connais.
'Corneille, I know.'
b. Corneille, je le connais.
'Corneille, I know him.'

According to Kihm, (34a) would provide "une interprétation rubrique" ('a category interpretation', i.e. Corneille's works, life, etc.), whereas (34b) could only refer to a living individual who happens to have the same name as the 17th century playwright.

We do not wish to contest the native speakers' intuition according to which the versions with overt pronouns evoke individuals and those with null forms types. But we do maintain that the simple opposition between a specific personal pronoun and a generic null complement does not fully account for the data. As the majority of the examples of DNI cited in this chapter show, the null complement permits specific reference just as easily as the overt pronoun. In judging pairs of sentences like those in (33) and (34) in the absence of a context, speakers naturally tend to attribute a different meaning to each member of a pair. Given that the object forms *le/la/les* are typically used for specific referents, the contrasting null forms are naturally given a non-specific interpretation by conversational implicature. The correct generalization concerning the overt-covert contrast seems to us to lie not in the type-token opposition but rather in the fact that the null complement represents the *unmarked member* of a contrasting pair. The unmarked nature of the DNI option in (33) and (34) is clearly shown in the last response in (29) above, in which the object refer-

ent shifts from generic status (*Je crois que t'aimes bien, toi, ce genre de truc*) to specific status (*J'ai trouvé hier*). The fact that despite this referential shift the speaker uses DNI in both cases demonstrates the semantically unmarked character of the null complement.

4.3 Pragmatic factors

As we have stated before, the referent of the omitted complement in the DNI type under discussion must be both active in the minds of the interlocutors at the time of utterance and it must have the status of an established discourse topic. With respect to these properties, the null complement is no different from the unaccented bound pronoun. What, then, is the difference between the null and the overt form? Could the null-instantiated complement signal a different degree of cognitive activation than the overt pronoun?

One plausible hypothesis would be that in a sequence of utterances about a topical referent a cognitive progression would take place leading from full lexical to pronominal and finally null representation. This kind of cognitive progression would be in accord with the accessibility hierarchy proposed by Ariel (1990: Ch. 3) or the givenness hierarchy in Gundel et al. (1993). An example of such a progression is illustrated in (35):

(35) A: Mais ce qui est super bizarre c'est que c'est un serial killer qui agit qui agit pas aux Etats-Unis quoi parce que j'avais jamais entendu parler de ça quoi dans un autre pays.
B: Ouais mais y en a partout, hein?
A: Ben, je. . .en France j'ai jamais entendu parler, hein. (corpus Lemoine)
A: 'But what's so incredibly bizarre is that it's a serial killer who acts, who doesn't act in the United States, ok, because I never heard about that in another country.'
B: 'Yeah but they are everywhere, you know?'
A: 'Well, I. . .in France, I never heard about (it), you know.'

Here, the same speaker first uses the lexical noun phrase (*un serial killer*), then the pronominal expression (*de ça* 'about that'), and finally the null form (cf. also the intermediary use of generic *en* 'of that' in B's turn). An analogous situation is observable in the following example (the interlocutors are French language instructors):

(36) A: Mais, euh, et le vocabulaire, en fait, c'est ce qui sort pendant l'heure. Donc...
B: Il faut les faire...
A: Je prends des notes pendant le cours. Après je va [sic] à l'ordinateur, je le tape, et puis au cours suivant je leur donne. (corpus Lemoine)
A: 'But, uh, and the vocabulary, in fact, that's what comes out of the lesson. So...'
B: 'You gotta do them...'
A: 'I take notes during class. Afterwards I go to the computer, I type it, and then in the next class I give (it) to them.'

In speaker A's turns, the linguistic representation of the topic of conversation (French vocabulary) progresses from full lexical NP (*le vocabulaire* 'the vocabulary'), to demonstrative pronoun (*c(e)* 'that'), to personal pronoun (*le* 'it'), and finally to null-instantiation.

Plausible though this cognitive-progression hypothesis may be, it is not always substantiated by the data. It is equally natural to go directly from nominal representation to a null complement:

(37) A: Qu'est-ce que je veux dire? Oh j'ai un de mes étudiants tu sais les trucs des vidéos
là pour euh...
B: Tu as utilisé? (corpus Daniel)
A: 'What was I gonna say? Ah I have one of my students you know those video things for uh...'
B: 'Did you use (them)?'

The referent *les trucs des vidéos là* 'those video things' that speaker A has just introduced into the discourse is taken up by speaker B directly in the form of a null complement. Consider also the following passage:

(38) non disons à chaque fois qu'on est avec les parents de Marc c'est toujours un peu difficile de savoir parce que on nous passe la salade bon il y a le père de Marc qui qui touille et puis qui me passe la salade alors moi je sais jamais si il faudrait que je prenne ou si il faudrait que je passe d'abord à Christine qui est mon aînée quand même tu comprends pas (Corpus Jyväskylä)
'no let's say every time we are with Marc's parents it's always a little difficult to know because they pass us the salad ok Marc's father mixes (it) and then he passes me the salad so me I never know if I'm supposed to take (it) or if I'm supposed to pass (it) first to Christine who is older than me after all you don't know'

In her narrative, the speaker switches twice from lexical NP (*la salade* 'the salad') directly to null representation. Another example is (39):

(39) A: Le film il me semble. . .
B: J'ai pas vu, moi. (corpus Romero)
A: 'The movie it seems to me. . .'
B: 'I didn't see (it), me.'

Here the direct passage from lexical NP to null representation takes place across conversational turns.

It is common also for null-instantiation to be used *exophorically* (Cornish 1999: Ch. 4), that is, to refer to discourse-salient entities in the extra linguistic context. A first example of this was given in (18a) above (*Ouvre!* 'Open (it)!'). Further examples are provided in (40):

(40) a. (Speaker just about to leave a colleague's office, placing her purse on the desk)
Je laisse ici? (corpus Lemoine)
'Shall I leave (it) here?'
b. (Mother to her son who just lifted a suitcase too heavy for him) Pose! (Fónagy 1985)
'Put (it) down!'

The importance of the extra linguistic context in null-complementation is emphasized by Blinkenberg (1960: 57, 110), who observes that DNI is especially common in contexts involving imperatives, where the object referent is typically provided by the situation, as in (40b) or (18a) (cf. the discussion of (12) above and (42) and (43) below).

Thus the data do not seem to confirm the idea that the referent of a null complement possesses a higher degree of cognitive activeness than that of a phonetically expressed pronoun. More important than referent activation seems to be the *degree of topicality* which the referent has in the discourse. For null-instantiation to be appropriate, it is not sufficient that the addressee be able to establish the link between the null form and the intended referent. The pragmatic status of the referent in the discourse must be salient enough for its occurrence in the proposition to be considered highly *predictable* for the hearer at the time of utterance (Lambrecht 1994: Ch. 4).

The need to distinguish between activation state and degree of topicality can be demonstrated with a simple scenario.[27] Picture a speaker carrying a large stack of books in her arms, accompanied by an interlocutor whose hands are empty. The book at the top of the stack begins to slide and is about to fall.

Assuming that the interlocutor is not looking at the pile of books, the utterance in (41a) seems to be more appropriate than the one in (41b):

(41) a. Attrape-le!
'Catch it!'
b. #Attrape!
'Catch!'

(41b) is less felicitous because, even though the stack of books constitutes a potential object of communication, the particular book in question does not. The use of an overt pronominal form seems to be better suited to get the hearer to accommodate an inactive referent as if it were already active. On the other hand, if the referent is already a center of interest in the utterance context, (41b) becomes perfectly natural. Let us suppose that A is holding a book that B wishes to read. A, being lazy, decides to throw it to B rather than taking it to her. Just as A throws it, he can utter (41b). The utterance is appropriate here because the referent is already an established topic of conversation.

Finally, we would like to briefly consider the case of null-instantiation with *ditransitive* verbs. The general rule with such verbs seems to be that the direct object receives DNI and the indirect object FNI construal, at least in prototypical cases where the indirect object argument has the role of an animate recipient, goal, or source (for a counterexample involving a non-animate recipient argument cf. (15b) and Note 13). Some examples of indirect-object FNI were given in (25), involving verbs of communication (see also (18c)). Of particular interest are sentences in which both the direct and the indirect object are null-instantiated, a situation that occurs typically (but not exclusively) in imperative contexts. Consider the following examples:

(42) Donne-le! – Donne! / Montre-le! – Montre! / Apporte-le – Apporte!
'Give it!' – 'Give!' / 'Show it!' – 'Show!' / 'Bring it' – 'Bring!'

The verbs *donner* 'give', *montrer* 'show', and *apporter* 'bring' are causative. The indirect-object arguments in (42) can thus be said to have the role of 'causee', which we know to favor FNI (item (23) and discussion). In the minimal pairs in (42), the indirect-object referent strongly tends to be interpreted as the speaker when the direct object is also null, but less strongly so when the direct object is overt. This is confirmed in the attested (43a), where the speech situation (an artist reluctant to show his work) strongly suggests the speaker as the indirect-object referent. However, as (43b) shows, the null-instantiated indirect object can also be construed as denoting a third person:

(43) a. Ce n'est même pas une ébauche: trois coups de crayon seulement. – Montrez quand même. (Sandfeld 1970)
'It's not even a sketch; just three pencil marks. – Show (it) (to me) anyway.'
b. Si je le leur donne, nous n'aurons plus rien, vous et moi! – Donnez toujours. (Blinkenberg 1960)
'If I give it to them, we won't have anything left, you and I! – Give (it to them) anyway.'

In the context of (43b), the omitted indirect object is most naturally construed as having the same referent as the dative pronoun *leur* 'to them' in the preceding utterance. However, since referential construal is free in FNI, the referent could also be non-specific, given the appropriate context.

It is important to distinguish the case of inherently ditransitive verbs, such as those illustrated in (42) and (43), from that of transitive verbs, which can take an optional third argument. With such verbs, omission of the third complement is clearly less acceptable:

(44) ?Envoie-le! – *Envoie! / ?Ecris-la! – *Ecris! / etc.
'Send it (to her)! / Send (it to her)! / Write it (to me)! / Write (it to me)!'

An utterance such as *Ecris!* can hardly be construed as meaning *Ecris-la-moi!* 'Write it to me!' (where the third person pronoun might refer to a letter). The sentences with an overt direct object in (44) can no doubt be used in situations where the recipient is implied by the context (as in *I wrote him a letter but I'm afraid to send it off*), but that does not make them instances of FNI, let alone DNI. On the other hand, utterances such as those in (44′)

(44′) Envoie-lui! / Ecris-lui!
'Send (it) to him! / Write (it) to him!'

where the omitted element is the direct object, pose no such problem, following the general rule of Topical DNI. The contrast between (42) and (44) constitutes good evidence that the verbs in the second case are not inherently ditransitive. If there is no indirect object argument, there can be no null-instantiation of it.[28]

We are now in a position to reconsider the cases of 'cacophony' and 'haplology' mentioned by Vaugelas and Grevisse in the passages quoted at the beginning of our study and which involve both a direct and an indirect object. Here again are the examples cited by the two grammarians:

(45) a. Il faut que je lui fasse voir.
'I have to show (it) to him.'
b. Il a demandé la 'Vie des Saints,' on lui a donnée.
'He asked for the 'Life of the Saints', they gave (it) to him.'
c. Tu entends! Je ne lui ai pas fait dire.
'You hear! I didn't make him say (it).'

Many speakers seem to accept sentences of this type more readily than those in which the null complement represents the only object of the verb. In the case of (45c), this tolerance might be explained phonologically, by the imagined presence of a geminate consonant (le lui > llui >lui). But this line of reasoning hardly extends to (45b), given that the full vowel in *la* is not as easily elided as the schwa in *le*. In the absence of a better explanation for the increased tolerance for DNI with ditransitive or causative verbs, we will adopt the one suggested by Vaugelas and Grevisse, according to which it is the desire to avoid the cacophonous juxtaposition of two similar-sounding third person pronouns that leads to haplology.

5. Syntactic and methodological implications

We would like to conclude this study with a discussion of some syntactic and methodological implications of the analysis of Topical DNI presented in this chapter.

The fact that in spoken French this DNI type seems to be generalized to all transitive verbs has interesting consequences for the formal analysis of certain constructions commonly assumed to involve Left-Isolation (WH-Movement) of object constituents. Of particular interest is the often-discussed so-called *Topicalization* construction, in which the object complement of a transitive verb is distant-instantiated in pre-subject or COMP position. It would seem, in the light of our analysis, that Topicalization does not exist in French, or exists only in a much more restricted set of environments than in English. In French, many cases of apparent Topicalization are more appropriately analyzed as instances of Left-Detachment involving DNI of the resumptive pronoun. Let us consider once again the sentence pairs in (33), repeated here as (46):

(46) a. Le chianti, vous le buvez? – Le chianti, vous buvez?
b. Les bananes, tu les manges? – Les bananes, tu manges?
c. Les Marocaines, vous les fumez? – Les Marocaines, vous fumez?

Since in French, unlike English, the sentences in the right-hand column are well-formed without the initial NPs (*Vous buvez, Tu manges, Vous fumez* are complete sentences), there is no motivation for analyzing the sentences without the overt pronoun as containing a 'gap' resulting from leftward NP movement. Instead of assigning the initial NP in (46) to the left-detached position in the first column and to the left-isolate (COMP) position in the second, we can analyze both sets of sentences as instances of the same Left-Detachment construction, thus simplifying our syntactic description of French.

One syntactic test concerning the difference between Topicalization and Left-Detachment involves the possibility of 'extraction' out of an adverbial clause (cf. Lambrecht 2001). Consider the English structures in (47):

(47) a. When I saw [this movie] I was a kid.
b. *[This movie] when I saw I was a kid.
c. [This movie]$_i$ when I saw it$_i$ I was a kid.

The Topicalization structure in (47b) is ungrammatical because the pre-clausal position in which the topicalized NP must occur is filled with the WH-word *when*, thus preventing the topicalized NP from functioning as the distant-instantiated object of the verb *see*. The Left-Detachment structure in (47c), on the other hand, is grammatical because the object requirement of the verb is satisfied by the pronominal argument, the dislocated NP occupying the extra-clausal TOP position, which precedes the COMP slot. The situation is crucially different in French, as shown by a comparison between (47) and the analogous sentences in (47′):

(47′) a. Quand j'ai vu [ce film] j'étais petit.
b. [Ce film] quand j'ai vu j'étais petit.
c. [Ce film]$_i$ quand je l'$_i$ ai vu j'étais petit.

Since the equivalent of (47b) in (47′b) is well-formed it follows that the French structure is not an instance of Topicalization. Rather it is an instance of Left-Detachment with DNI of the resumptive pronominal object, which is overtly expressed in (c). An analogous situation obtains in the DNI examples involving Right-Detachment in (29) and (30) above.

It should be acknowledged that we are *not* claiming that French has no Left-Isolation construction. As mentioned in Section 2, distant instantiation regularly occurs in WH-question formation in French (although spoken French resorts to 'WH in situ' much more freely than English does). Moreover, (spoken) French makes frequent use of the so-called 'Focus-Movement' construction illustrated in (2b), in which the use of a resumptive pronoun is im-

possible (cf. Lambrecht 2001) and which cannot, therefore, be subsumed under the Left-Detachment template assumed for (47′) (compare (2b) *L'AMOUR elle appelle ça* 'LOVE she calls that' with the ungrammatical **L'AMOUR elle l'appelle ça* 'LOVE she calls that it'). At the present state of our research, our observation regarding Topicalization in French is meant mostly as a suggestion for further research.

As we observed at the beginning, our analysis of DNI contradicts certain parametric generalizations proposed for French within the Government-and-Binding framework. In GB, the postulation of empty categories is a logical consequence of the 'Projection Principle' (Chomsky 1986), according to which the lexical properties of each word must be preserved at every level of grammatical representation. In the constructional approach adopted in the present study, the Projection Principle is rendered superfluous, since it is the grammatical construction itself, whether lexical or syntactic, which determines the semantic interpretation of the sentence (Goldberg 1995). Instead of postulating a parameter which would oppose the existence vs. non-existence of null-complements in a given language (Huang 1984; Rizzi 1986; Roberge 1990, etc.), our analysis recognizes a multitude of lexical and syntactic options, each subject to particular semantic and pragmatic constraints. The very complex system of null complementation is part of the grammar of individual languages and must be learned as such by the native speaker.[29] Of course this does not explain certain striking differences between languages, such as the fact that object DNI is so much more widespread in French or Portuguese than in English or German. But it strongly suggests that explanations in terms of parameter-settings are empirically inadequate.

The phenomenon of Topical DNI in modern French poses in a particularly acute fashion the meta-theoretical problem of native-speaker intuitions in the realm of syntactic argumentation. While undoubtedly belonging to the grammatical system of the French language, Topical DNI to a large extent eludes the native-speaker's competence to make acceptability judgments independently of given discourse contexts. We are dealing here with an area of the syntax of contemporary French to which introspection provides only limited access. The use of corpora of spontaneous oral production therefore proves essential in this domain. Given the powerful, and notorious, authority that normative grammar exerts on the collective linguistic consciousness of French speakers, it seems likely that the presumed typological difference between French and other languages freely permitting DNI is in fact only or mainly a difference in a given culture's tolerance for deviation from the linguistic norm. Grevisse's passage quoted at the beginning of our study is revealing in this respect. According

to Grevisse, the haplology in question was common in the Middle Ages, then disappeared gradually from the language, and was observed only rarely in the 17th century, in a slow evolution of which contemporary French would mark the final stage.

If it is true that such an evolution took place, it is difficult to see why Topical DNI is so prevalent in contemporary spoken French. A more realistic explanation for the presumed evolution is that the phenomenon has always existed in French but was pushed out of the linguistic consciousness under the influence of normative grammar, which considers it an unacceptable deviation from 'clarity' and 'logic'.[30] The general advice given by Vaugelas (1647) at the end of the passage quoted at the beginning of our study is revealing in that regard: "Il vaut bien mieux satisfaire l'entendement que l'oreille, & il ne faut jamais auoir esgard à celle-cy; qu'on n'ayt premièrement satisfait l'autre" ('It is much better to satisfy reason than the ear, and one should never pay attention to the latter unless one has first satisfied the former').

Notes

* The present chapter is a revised and modified version of Lambrecht & Lemoine (1996). We would like to thank those who helped us with the earlier version, especially Jean Chuquet, Charles Fillmore, Claude Muller, and Anne Zribi-Hertz. We are particularly grateful to Meri Larjavaara for a number of thoughtful and challenging comments on the earlier version. For most helpful comments on the present version we thank Adele Goldberg, Francis Cornish, Joan Maling and especially Mirjam Fried.

1. Detailed discussions of different GB approaches to null complementation are found in Huang (1995) and Lemoine (1997: Ch. 2).

2. Interestingly, English permits null-instantiation of the entire infinitival complement of the causative verb (*I didn't make him*) while French does not (**Je ne lui ai pas fait*).

3. In our analysis, we will use more or less interchangeably the terms 'complement', 'argument', and 'valence element'.

4. A similar ternary distinction is drawn by Jacobs (1994a: 299ff.), who distinguishes definite, indefinite, and "definitheitsneutral" ('definiteness-neutral'), the first requiring "Kontextidentifizierbarkeit" ('context identifiability'). For alternative labels used by various scholars to designate different null-instantiation types cf. Fillmore (1986).

5. We are grateful to Meri Larjavaara for having drawn our attention to the terminological (and conceptual) issue at hand. For further discussion cf. Larjavaara (2000).

6. Fillmore's notion of 'markedly indefinite' null elements is related to the notion of 'a-definite' arguments developed in Koenig & Mauner (2000). A-definite arguments are de-

scribed by Koenig & Mauner as being 'discourse-inert', i.e. as being unable to serve as antecedents to anaphoric expressions.

7. Fónagy (1985: 25) mentions four different uses of the verb *rapporter*, each permitting specialized INI of the kind illustrated in (10).

8. A similar test for the INI-DNI distinction is applied in Jacobs (1994a: 299f.).

9. From a sociolinguistic point of view, the relation between the DNI structures in (11) and their Direct-Instantiation alternatives in (11′) is the opposite of that between our model sentences (1b) (*Il les lui prête*) and (5b) (*Il lui prête*). In the latter case, the structure with the overt pronoun is the standard one while the DNI structure is socially stigmatized. In the former, the structure with the overt pronoun is (severely) stigmatized, whereas the DNI structure represents the standard form.

10. For discussions of the construction type illustrated in (12) cf. Sadock (1974), Massam & Roberge (1989) for English, and Blume (1993), Jacobs (1994a) for German.

11. Native speakers of English seem to interpret sentences like (13b) *What time do you close/open?* not with transitive *close/open* involving an agentive subject and DNI of the patient object *the store*, but with intransitive (middle voice) *close/open* involving a patient or theme subject and metonymic substitution of *you* for *your store* (cf. *What time does your store close/open?*) (Joan Maling, p.c.). This interpretation seems to be available also in French, since it is possible to say *Le magasin ouvre/ferme le dimanche* 'The store opens/closes on Sundays'. The question arises as to whether the metonymy extends from the person to the thing or from the thing to the person. We must leave this question unresolved here.

12. The examples in (14) are acceptable if the window or the door or the team in question have the pragmatic status of discourse topics; cf. Section 3.2.2 below.

13. As Fillmore (1986) has pointed out for the English verb *contribute*, the direct object of *contribuer* receives the INI interpretation, as in (10c) above, whereas the oblique object receives the DNI interpretation, as in (15b). When both objects are omitted (as in *J'ai déjà contribué* 'I have already contributed'), the direct object is necessarily interpreted as 'a certain sum of money' and the oblique complement as 'to the cause in question'.

14. The fact that in frame-induced DNI, overt instantiation of the null complement would result in a focus expression constitutes an interesting challenge to the theory of focus developed in Lambrecht (1994), where a focus is by definition an *unpredictable* element of a proposition.

15. See the concept of 'Null-Topik' in Jacobs (1994a: 304f.). Interestingly, the German null topic (or rather its overt counterpart) occurs necessarily in clause-initial, i.e. topic, position, as demonstrated by the fact that it triggers V2 syntax (cf. *ø hab' ich schon aufgeweckt* 'I have already woken (him) up' vs. ?*Ich hab' ø schon aufgeweckt*). According to Jacobs, the German null-topic construction is not lexically but constructionally licensed.

16. For lists of attested examples of Topical DNI taken from various corpora cf. Fónagy (1985), Lemoine (1997), and the Appendix in Lambrecht & Lemoine (1996).

17. With respect to this property, French differs markedly from English. In English, the definite null complement cannot have the role of patient (Fillmore 1986; Goldberg 2001). Lemoine (1997: 101ff.) provides a list of semantic roles of French DNI complements found

in his corpora, which includes patient, content of an experience, theme, goal, recipient, and locative.

18. The label 'free' in FNI corresponds to the label 'arb(itrary)' in the GB framework.

19. On the special interpretive properties of French indefinite *on* cf. Koenig & Mauner (2000).

20. During the presentation of an earlier version of this chapter (CERLICO, Poitiers 1995), members of the audience pointed out that the correct version of this adage was *La masturbation rend sourd* 'Masturbation makes (you) deaf'. The version in (23a) is culled from a comic strip by Reiser, which nicely illustrates the possibility of definite construal in FNI. In the comic strip, an older man sees two boys engaging in the activity in question and says to them: *Vous savez que ça rend aveugle*? 'Do you know that makes (you) blind?' to which the boys answer: *On s'arrête dès qu'on porte des lunettes!* 'We'll stop as soon as we have to wear glasses.'

21. We thank Hélène Chuquet for providing us with this example as well as the ones in (25a/b).

22. The fact that Bach's generalization does not apply to French (or to Italian) led Rizzi (1986) to postulate that the unexpressed argument of the type of verbs illustrated in (23) belongs to different empty categories in French and in English.

23. One well-known constraint on linear pronoun sequencing in French is that which prohibits a bound pronoun of the set *me/te/se/nous/vous*, whose members are both dative and accusative, from cooccuring either with another member of this set or with one of the dative-marked 3p forms *lui* and *leur*. The constraint is illustrated in (i):

(i) *Permettez-moi de me vous/lui presenter.
'Allow me to introduce myself to you/him.'

The constraint in (i) can be circumvented via null-instantiation of the second pronoun form, as in

(ii) Permettez-moi de me présenter.
'Allow me to introduce myself.'

Sentences such as (ii) are instances of FNI rather than DNI and are therefore not taken into account here (but cf. example (42) below).

24. The sequence *il l'y a pas* is possible for example in the sentence *Il l'y a pas mis* 'He hasn't put it there'.

25. It should be noted that the NP *ce genre de truc* 'that kind of thing' in (29) is not the direct object of *t'aimes bien* 'you like' but occupies right-detached position, as indicated by its occurrence after the right-detached pronoun *toi* as well as by its low and flat intonation contour. Cf. also ex. (30) and the discussion of Left-Detachment in Section 5.

26. Fónagy (1985:7) notes that in his corpus *aimer* is by far the most common DNI verb.

27. We thank Mary-Annique Morel for having drawn our attention to the type of situation illustrated in (41).

28. We are grateful to Mirjam Fried for pointing out to us the theoretical relevance of the contrast between (42) and (44).

29. Goldberg comes to a similar conclusion in her analysis of patient argument omission with causative verbs in English: "The evidence leads to the conclusion that the actual distribution of causative verbs cannot be determined by simple, across-the-board generalizations. Instead their distribution can only be predicted by taking discourse factors, rich lexical meaning and constructional factors into account" (Goldberg 2001:505). The same point is made forcefully by Yan Huang (1995).

30. A similar explanation was proposed by Stempel (1981:367) concerning OSV word order in French. Observing that OSV is attested in certain historical periods but not in others, the author concludes: "Nicht die Syntax der Wortstellung hatte sich im Falle unseres Typs verändert, sondern dessen Bewertung durch die massgeblichen "Ideologen" des sprachlichen Selbstverständnisses in Frankreich" ('It is not the syntax of word order that had changed in the case of our type but its evaluation by the standard-setting 'ideologues' of linguistic self-understanding in France').

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Chapter 2

From relativization to clause-linkage

Evidence from Modern Japanese

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1. Introduction*

The so-called internally headed relativization (IHR) in Modern Japanese has been discussed by various linguists in recent years. Researchers have noted that the external marking on internally headed relative clauses (IHRCs) is typically the nominative or the accusative and that IHRCs are generally restricted in occurrence (e.g. Hirose & Ohori 1992). These facts, however, have not been fully accounted for. Moreover, researchers disagree as to the nature of the relation between the sentences exemplifying the IHR construction such as (1) and concessive bi-clausal sentences such as (2) (e.g. Kuroda 1999; Martin 1975; Mihara 1994).

(1) IHR sentence

a. [[*ringo* *ga* *teeburu* *no* *ue* *ni* *atta*]$_{S1}$ *no*] *ga* *otita*.
apple NOM table GEN above LOC existed NOM NMLZ fell
i. lit. '[That there was an apple on the table] fell.'
ii. 'There was an apple on the table, and (it) fell.'

b. [[*ringo* *ga* *teeburu* *no* *ue* *ni* *atta*]$_{S1}$ *no*] *o* *midori* *wa* *totta*.
apple NOM table GEN above LOC existed NMLZ ACC Midori TOP took
i. lit. 'Midori picked up [that there was an apple on the table].'
ii. 'There was an apple on the table, and Midori picked (it) up.'

(2) Concessive bi-clausal sentence[1]

a. [*rei-nen da to asa-yuu sukooru ga aru*] *no*
every-year COP CONJ morning-evening rainstorm NOM exist
ga kotosi wa hotondo ame ga huranai.
this.year TOP scarcely rain NOM fall.NEG
'Whereas every year we have a downpour in the morning and in the evening, this year it has scarcely rained.' [Asahi Newspaper]

b. *kare wa* [*kesseki sita.hoo.ga.ii*] *no o muri.o.sita.*
he TOP absent had.better.be pushed.oneself.too.hard
'Whereas he should have stayed home, he pushed himself too hard.'
(Lê 1988: 86, (66))

This chapter discusses a possible reason for the restricted occurrence of IHRCs, by specifically investigating the relation between IHR sentences and the concessive bi-clausal sentences. It will be argued that the concessive construction should indeed be treated as distinct from the IHR construction. I will propose that the restricted occurrence of IHR sentences in present-day Japanese may be due to the reanalysis of the IHR construction as the concessive construction.

Kuroda (1999) also argues that the IHR construction and the concessive construction should be recognized as distinct. This chapter gives a new set of arguments for that claim, employing a different analytic approach. My treatment assumes an approach in which the basic analytic unit is a conventionalized meaning-form pair (Fillmore, Kay, & O'Connor 1988; Lambrecht 1994; Goldberg 1995; Kay & Fillmore 1999). Furthermore, although it has been established that the conjunctive particles *ga, o,* and *ni* in Classical Japanese represent extended developments of the case particles *ga, o,* and *ni* (Kitayama 1951; Ishigaki 1955; Kuroda 1992/1974–1977), the development of clausal conjunctions *no, ga,* and *no o* in Modern Japanese has not been extensively discussed in the literature. This chapter gives an account of the mechanism through which these composite conjunctions have come to be used.

The organization of the chapter is as follows. Section 2 discusses whether the concessive sentences and IHR sentences should be analyzed as instances of the same grammatical construction. Section 3 compares the properties of the IHR construction and the concessive construction. In Section 4, it is hypothesized that the concessive construction in Modern Japanese arose as a result of reanalysis of the IHR construction.

2. The need to posit two distinct grammatical constructions

Before examining the relation of concessive bi-clausal sentences to IHR sentences, let us briefly look at the IHR construction first.

2.1 The internally headed relativization (IHR) construction

IHR sentences such as (1a) and (1b) have structures that suggest the literal translations shown in (1a-i) and (1b-i), respectively, but in fact have the meanings shown in (1a-ii) and (1b-ii).

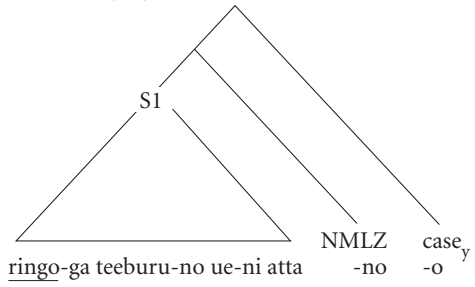
The morpheme *no*, which follows S1 in the sentences in (1), can be used as a sentence nominalizer, hence the literal translations in (1a-i) and (1b-i).[2] The referent of the subject argument of the main predicate in (1a) must be an entity and not a proposition. The same is true for the direct object referent in (1b). Hence, the meanings shown in (1a-ii) and (1b-ii).

There is NP coreferentiality between the two clauses in each sentence above. The coreferenced NP ringo 'apple' is underlined. Also, the case marking on the nominalized clause (S1 plus no) agrees with the case marking required by the main predicate for the role of the coreferenced NP: in (1a) it is the nominative ga and in (1b) it is the accusative *o*.

These two properties, namely, NP coreferentiality between the two clauses and the 'case-matching' between the actual case-marking on the nominalized S1 and the one required by the main predicate for the role of the coreferenced NP, have led researchers to characterizing these types of sentences as involving IHRCs (Kuroda 1992/1974–1977; Itô 1986; inter alia).

The schematic representations of IHRCs is given as follows:

(3) IHRC cf. (1b)



The structural description of IHR sentences is given in (4). NP_i-$case_x$ is phonetically present in S1; NP_i represents the target and $case_x$ is appropriate for the role of NP_i within S1. Strictly speaking, the term 'target' is generally used to re-

fer to the role of NP_i in S1. In this chapter, however, I will refer to NP_i, which is coreferenced by S1 and S2, as the 'target NP'. $Case_y$ after the nominalizer indicates the role of NP_i in S2.

(4) **The IHR construction**
$[\ldots [[\ldots NP_i\ case_x \ldots V1]_{S1}\ \textit{no}]\ case_{y\ldots}\ V2]_{S2}$
NP_i: the target of relativization
$case_x$: a case marker
V1: the predicate of the IHRC
S1: the IHRC
no: nominalizer (NMLZ)
$case_y$: a case marker
V2: the main predicate
S2: the main clause

2.2 The concessive construction

In Modern Japanese, there are other sentences which closely resemble IHR sentences. The sentences in (2) and (5) are taken from a newspaper article, a work of nonfiction, and a work of fiction, respectively. Just like S1 in typical IHR sentences, S1 in these sentences is followed by the sequence *no ga* or *no o*, as indicated by the underline.

(5) [*saisyo wa noriko ga syutai deatta*] *no o itunomanika tatuo*
first TOP Noriko NOM leader COP.PAST eventually Tatsuo
to gyaku no iti ni. natta
from opposite GEN place LOC became
'At first Noriko was the leader, but eventually (she) got the opposite place from Tatsuo.' (Lê 1988: 85, (59))

If these sentences were to be analyzed as IHR sentences, then they should exhibit the two defining properties of the IHR construction. However, they do not. Example (2a) lacks both NP coreferentiality and 'case-matching': here, the only valence requirement of V2 is satisfied within S2 by the nominative-marked NP *ame* 'rain [noun]', and there is thus no NP coreferentiality between the two clauses. Consequently, there is no 'case-matching'. In (5), there is NP coreferentiality between the clauses but still no 'case-matching' is observed: *Noriko* inside S1 is construed as the subject of V2, but the external marking on S1 is *o*, not the expected nominative *ga*. I will call these types of sentences which do not exhibit

the 'case-matching' phenomenon *concessive sentences*, due to the adversative semantic relation between the situations described in the two clauses.

Should concessive sentences still be considered instances of the same grammatical construction as IHR sentences, in spite of the fact they do not exhibit the 'case-matching' phenomenon? Some analysts have proposed that the answer is indeed 'yes' (e.g. Mihara 1994). Here I will argue against such a view.

First, while IHR sentences do not allow the so-called contrastive *wa* in S1 and S2, concessive sentences do. In such a case, two phrases to which *wa* attaches are made foci of contrast. In (6a), the two *wa*-marked adverbials, *mukasi* 'old days' in S1 and *ima* 'now' in S2, are the foci of contrast. In (6b), *wa* is attached to the locative of S1 *amerika de* 'in America' and to the grammatical subject of S2 *watasi* 'I', making them the foci of contrast. The writer is contrasting the different ways in which the book was designed: in America by somebody *vs*. in Japan by herself.

(6) a. [*mukasi wa iti-nen o hatuka de kurasu yoi otoko*
old.days TOP one-year ACC twenty.days LOC work happy guys
datta] *no ga ima wa iti-nen roku-basyo dearu.*
COP.PAST now TOP one-year six-tournaments COP
'Whereas in the old days they [sumo wrestlers] were happy fellows working 20 days a year, nowadays there are 6 tournaments a year.'
[Asahi Newspaper]

b. *kono hon wa* [*amerika de wa e-hon no ookisa*
this book TOP America LOC TOP picture-book GEN size
de syuppansareta] *no o watasi wa itumo beddo saido ni*
COP publish.PASS.PAST I TOP always bed side LOC
okareru hon ni natte hosii to omotta.
put.PASS book GOAL become want CMPL thought
'Whereas in America the book had been published in the size of a picture book, I thought I wanted (it) to be a book which would always be kept by the bed.' [Asahi Newspaper]

On the other hand, attaching *wa* to two phrases in S1 and S2 of the IHR sentences results in unacceptable sentences, as shown by (7a′) and (7b′).

(7) IHR

a. [[*kinoo ringo o okuttekudasatta*] *no*] *ga kyoo*
yesterday apple ACC sent.HONOR.PAST NMLZ NOM today
tukimasita.
arrived
'(You) sent me apples yesterday, and I received (them) today.'

a′. *[[*kinoo* *wa* *ringo o okutte kudasatta*] *no*] *ga* *kyoo* *wa*
TOP NMLZ NOM TOP
tukimasita.

b. *taroo wa* [[*kinoo ringo o katte.kita*] *no*] *o* *kyoo* *tabeta*.
Taro TOP apple ACC bought NMLZ ACC today ate
'Taro bought an apple yesterday, and he ate (it) today.'

b′. **taroo wa* [[*kinoo wa ringo o katte kita*] *no*] *o* *kyoo* *wa*
TOP NMLZ ACC TOP
tabeta.

I have argued elsewhere that the function of IHR sentences is to advance a narrative within a sentence (Ohara 1996, inter alia). The unacceptability of the contrastive *wa* in IHR sentences suggests that the discourse function of IHR sentences may not be compatible with the discourse function of emphasizing a contrast in propositions. That function, on the other hand, is congruent with the concessivity expressed by concessive sentences: they emphasize a contrast between propositions (see also Section 3.2).

Furthermore, the concessive meaning is *conventionalized* in these types of sentences. The fact that the contrastive *wa* is allowed in concessive sentences does not, by itself, entail any such conventionalization. It may be argued that the concessivity found in them is just a *conversational* implicature and that the contrastive *wa*, when it is used, strengthens such a reading. The examples below, however, show that the concessive relation is not cancellable and thus is indeed conventionalized in this sentence type:

(8) a. [*rei-nen da to asa-yuu sukooru ga aru*]
every-year COP CONJ morning-evening rainstorm NOM exist
no ga kotosi wa hotondo ame ga huranai.
this.year TOP scarcely rain NOM fall.NEG
#*rei-nen sukooru ga aru kara kotosi hotondo ame* ga *huranakute*
because
toozen dakedo.
follows but
'Whereas every year we have a downpour in the morning and in the evening, this year it has scarcely rained.'
#'From the fact that we have a downpour every year it follows that it has scarcely rained this year, however.'

b. *kare wa* [*kesseki sita.hoo.ga.ii*] *no o muri.o.siteita.*
he TOP absent had.better.be pushed.oneself.too.hard
#*kesseki sita hoo ga ii koto to muri o suru koto wa*
COMPL and TOP
muzyunsinai kedo.
conflict.NEG but
'Whereas he should have stayed home, he pushed himself too hard.'
#'Being in a condition such that one should stay home and pushing oneself too hard do not conflict with each other, however.'

It thus follows that if we define grammatical constructions as conventionalized meaning-form pairings, then the concessive clause-linkage must be recognized as a grammatical construction that is distinct from the IHR construction. In the concessive construction, the sequences *no ga* and *no o* are used as devices for connecting two clauses, although they are not fully lexicalized into clausal conjunctions yet, as can be seen from the fact that dictionaries do not list them (see also Horie 1993). I do not know at this moment whether there exist any semantic or pragmatic differences between concessive sentences with *no ga* and those with *no o*. I therefore treat them as instances of the same grammatical construction with variable marking. The concessive construction is thus schematized as follows:[3]

(9) **The concessive construction**
[S1 $\left\{\begin{matrix} no - go \\ no - o \end{matrix}\right\}$ S2]
no-ga, no-o: clausal conjunctions (CONJ)

3. IHR *vs.* concessive clause-linkage

Let us now compare the structural, semantic, and pragmatic properties of the IHR construction and the concessive construction.

3.1 Structural comparison

Based on the traditional coordination-subordination distinction, IHRCs are categorized as [+dependent, +embedded] (cf. Van Valin 1993). IHRCs cannot be used on their own to refer and must be used in combination with another clause (Ohara 1996). In this sense, IHRCs are distributionally depen-

dent. Moreover, the *no*-nominalized S1 fulfills a syntactic valence requirement of V2 and is thus embedded within S2.

The syntactic relation between S1 and S2 of the concessive construction, on the other hand, can be described as [+dependent, –embedded]. First, S1 of concessive sentences is distributionally dependent, since it cannot stand alone. It is not, however, embedded in S2, because S1 is not a syntactic argument of V2, and hence also no 'case-matching' between the two clauses. The concessive construction is, therefore, more 'coordination-like' than the IHR construction. At the same time, IHRCs, even though they are embedded in that they externally function as NPs, syntactically behave like coordinated clauses with respect to certain syntactic patterns such as *wh*-questions and the so-called *ga-no* conversion (Ohara 1996: 71–73). S1 of concessive sentences also exhibits a 'coordination-like' behavior with respect to those syntactic patterns. For example, in Japanese, while externally headed relative clause (EHRC) allows one of its constituent NPs to be replaced by a *wh*-word, as in (10a), IHRC and S1 of concessive sentences do not, just like S1 of coordinated sentences (10b). (10c) and (10d) illustrate the behavior of both IHRC and S1 of concessive sentences, respectively:

(10) *wh*-Question

a. EHRC (externally headed relative clause)
[[*dare* *ga* *katte.kita*] *ringo*] *o* *hanako* *ga*
who NOM buy.ASP.PAST apple ACC Hanako NOM
tabemasitaka?
eat.POLITE.PAST.Q
'Who bought the apple and Hanako ate?'

b. S1 of coordinated sentences
*[*dare* *ga* *ringo o katte kita*] *ga* *hanako* *ga* *tabemasitaka?*
NOM CONJ NOM
Intended: 'Who bought the apple, and Hanako ate it?'

c. IHRC
*[[*dare* *ga* *ringo o katte kita*] *no*] *o* *hanako* *ga*
NOM NMLZ ACC Hanako NOM
tabemasitaka?

Intended: 'Who bought the apple, and Hanako ate (it)?'

d. S1 of concessive sentences
*[*mukasi wa dare ga ringo o katte.ita*] *no-ga ima de wa*
old.days TOP used.to.buy nowadays TOP
hanako no yakume desuka?
GEN duty COP.POLITE.Q
Intended: 'Whereas in the old days who used to buy apples, nowdays it is Hanako's duty?'

3.2 Semantic comparison

In terms of referential structure, the IHR construction is characterized by NP coreferentiality between the two clauses. In discourse-structure terms, this NP coreferentiality marks participant continuity. The IHR construction advances a narrative by reporting two events which share a participant and the target NP referent corresponds to the participant shared by the two events.

In concessive sentences NP coreferentiality between the two clauses is not obligatory but can be present, as exemplified in (5). Even when there is no NP coreferentiality between the two clauses, concessive sentences may contain a grammatical-topic NP, i.e. a *wa*-marked topic NP, whose scope is both S1 and S2, shown in (6b). It is also possible to identify a discourse topic shared by the two clauses of concessive sentences, even if it is not explicitly realized as a grammatical-topic NP; in (6a), for example, both of the clauses are about sumo wrestlers. The concessive construction is thus always characterized by *topic* continuity. The IHR construction, on the other hand, is characterized by *participant* continuity.

I have argued elsewhere that a temporal sequence is often expressed by IHR sentences (Ohara 1996, inter alia). It is typically observed in concessive sentences as well. Furthermore, in concessive sentences, the contrastive *wa* often attaches to a time adverbial in each of the two clauses, emphasizing a contrast in the situations holding at the two different time frames, as in (6a). Concessive sentences therefore specifically present a contrast involving two different time frames on a temporal axis.

3.3 Pragmatic comparison

Even though IHRCs are embedded inside S2, the syntactic behavior with respect to *wh*-questions argues for the view that V1 of IHRCs makes an assertion, just like that of coordinated or main clauses (Ohara 1996: Ch. 4). Since S1

of the concessive construction behaves similarly to IHRCs and S1 of coordinated clauses, V1 of concessive sentences can also be construed as making an assertion.

To summarize, syntactically, the concessive construction is more 'coordination-like' than the IHR construction, since S1 in the concessive construction is not embedded within S2. Semantically, the concessive construction expresses topic continuity, while the IHR construction is characterized by participant continuity. However, the concessive construction often involves a temporal sequence just like the IHR construction. Finally, in both of the constructions V1 is construed as making an assertion.

4. From relativization to clause-linkage

I suggest that the concessive construction arose as a result of reanalysis of the IHR construction.

4.1 The reanalysis hypothesis

My proposal concerning the reanalysis of the IHR construction involves the following two features. First, the sequence consisting of the nominalizer *no* and a case marker in IHR sentences is reanalyzed as a clause-linking device in concessive sentences. Second, S1 of IHR sentences undergoes a change from an embedded clause to a non-embedded clause and all the constituents up to *no-ga* or *no-o* are reanalyzed as belonging to S1 in concessive sentences. At the same time, S2 undergoes a boundary shift, in that all the constituents occurring after the nominalizer plus a case marker in an IHR sentence are reanalyzed as comprising the S2 of a concessive sentence. The hypothesized processes can thus be schematized as follows:

(11) a. [[[... NP_i ... V1]$_{S1}$ *no*] *ga* ... V2]$_{S2}$
NMLZ NOM

→ [... ... V1]$_{S1}$ *no-ga* [... V2]$_{S2}$
CONJ

b. [... [[... NP_i ... V1]$_{S1}$ *no*] *o* V2]$_{S2}$
NMLZ ACC

→ [... ... V1]$_{S1}$ *no-o* [V2]$_{S2}$
CONJ

4.2 Arguments for the reanalysis hypothesis

4.2.1 *Analogy to other clausal conjunctions*

The first argument has to do with the polyfunctionality of particles *ga* and *o* and the existence of other two-part clausal conjunctions in Modern Japanese. *Ga* and *o* that follow nominalized clauses are polyfunctional in Modern Japanese. In addition to being used as case markers, the particles *ga* and *o* may be used as conjunctive particles, connecting a nominalized clause to another clause.[4] The conjunctive particles *ga* and *o* appear in combination with certain nominalizers such as *tokoro* – literally 'place' (as in *tokoro-ga* and *tokoro-o*), or *mono* – literally 'thing' (as in *mono-o*), in effect forming two-part clausal conjunctions.

The nominalizer *no* can be the first part of such a two-morpheme clausal conjunction. For example, the concessive clausal conjunction *noni* 'although' is generally believed to derive from the nominalizer *no* plus a clausal conjunction *ni* (Konoshima 1966; *Nihon Kokugo Daijiten*). It started out as a two-part clausal conjunction and later lexicalized into a clausal conjunction through boundary loss. It is now listed as a lexeme in dictionaries. It thus seems possible to hypothesize that *no-ga* and *no-o* are being reanalyzed as two-part clausal conjunctions perhaps by analogy (see also Horie 1993).

4.2.2 *Constructional simplicity*

Languages tend to change so as to maximize optimality. Although tendencies toward various types of optimality will often conflict with one another, some may be regarded as tendencies in the direction of greater simplicity (Hopper & Traugott 1993: 63–67). Constructional simplicity is one such type of language optimality. There is a tendency for marked constructions to give way to more commonplace ones and for the intrinsic complexity to be reduced.

Two kinds of discrepancies between form and meaning exist in the IHR construction. First, there is a syntax-semantics 'mismatch' in the IHR construction (Ohara 1992). Syntactically the entire *no*-nominalized S1 satisfies one of the syntactic requirements of V2, as can be seen by the fact that the case marking on the nominalized S1 matches the case marking required for a syntactic complement of V2. Semantically, however, an NP inside S1 corresponds to an argument of V2.

Second, there is a discrepancy between structure and function. Although structurally the *no*-nominalized S1 is embedded within S2, S1 is functionally 'coordination-like' in that, like main clauses, it makes an assertion. Because of these discrepancies between form and meaning, the IHR construction can be

regarded as a marked construction. Reanalysis as the concessive construction reduces the complexity.

4.2.3 *The directionality of semantic change*

The proposed reanalysis is accompanied by a semantic change. Whereas the IHR construction advances a narrative within a sentence, the concessive construction expresses a contrast between two propositions. In other words, while the meaning of the IHR construction has to do with the temporal domain, the meaning of the concessive construction crucially involves the logical domain. This kind of semantic change is commonly observed in grammaticalization (Sweetser 1990; inter alia).

It was also observed that even though concessivity is conventionalized in the concessive construction, a temporal sequence relation typically obtains between its two clauses. This may be a kind of persistence, which is often observed when a form undergoes grammaticalization.

It should be noted that the proposed change in Japanese seems parallel to the developments from the 'adjoined' relative clause to the clausal conjunctions in Early Indo-European and to the developments from internal-head constructions to absolute constructions in Kiranti languages in Eastern Nepal (Holland 1984; Bickel 1999). Unlike these languages, however, Japanese seems to have specifically developed a construction which is dedicated to expressing concessivity rather than general topicality.

5. Conclusion

The reanalysis hypothesis proposed in the chapter accounts for the restricted occurrence of IHRCs in present-day Japanese, especially the fact that their external marking is typically the nominative and the accusative. A preliminary examination of diachronic corpora suggests that concessive *no-ga* and *no-o* sentences emerged quite recently, i.e., in the 20th century. In any case, I hope to have shown the need to take the grammaticalization process into account when analyzing and explaining grammatical constructions in Modern Japanese.

Notes

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1. I have purposely left out the glosses for *no ga* and *no o* for the time being.

2. Throughout this chapter I will call the 'subordinate' clause S1 and the 'main' clause S2, based on the order of the predicates.

3. Hereafter, the clausal conjunctions *no-ga* and *no-o* will be indicated using a hyphen. Cf. Section 4.1.

4. Japanese grammarians generally believe that the nominative *ga* and the accusative *o* gave rise to the concessive conjunctive particles *ga* and *o* (Ishigaki 1955; Konoshima 1966; Nishida 1977; Saeki 1966). By the time of Late Old Japanese (794–1191), *ga* and *o* came to attach to NPs as case particles. It was also possible for them to follow the nominalized form of a predicate. In Japanese, which has been an OV (verb-final)/postpositional language throughout its history, clause-linking devices appear clause-finally. The position of the case particles, i.e. after a nominalized clause, thus made it possible for them to be reinterpreted as conjunctive particles which link two clauses. Genetti (1991) discusses developments from case markers to clausal conjunctions in various Bodic languages of Tibeto-Burman (cf. Bickel 1999). The developments from the nominative and accusative case markers to clausal conjunctions, however, seem to be rare cross-linguistically (Ohori 1995: 700).

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Chapter 3

Argument structure constructions and the argument-adjunct distinction

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1. Introduction*

One purpose of the present chapter is to compare a monotonic ('unification-based') constructional approach to argument structure (e.g., Fillmore 1988; Kay & Fillmore 1999) with a non-monotonic constructional approach influenced by Cognitive Linguistics (CL) (e.g., Goldberg 1995). A second purpose is to develop an account of the argument/adjunct distinction within a constructional framework. I will argue that with respect to the argument structure constructions illustrated in (1) and related phenomena the monotonic approach accounts for a wider range of semantic and syntactic facts with a more economical theoretical apparatus.

(1) a. The catcher threw Pat the bean bag.
b. The boss promised me a raise.
c. The administration always denies late arrivals permission to enter.
d. Aunt Maude bequeathed me a collection of risqué postcards.
e. The referee allowed Kim two free throws.
f. A famous sculptor carved my sister a soap statue of Bugs Bunny.

Goldberg (1995, hereafter G) provides valuable insights regarding the role of argument structure in grammar, in particular the advantages of treating aspects of argument structure as independent of particular lexical items. While the current study argues against details of G's analysis, many of the basic empirical insights used here come from that work and much of the general constructional approach is shared between us.

One of G's featured examples involves the family of related argument structure constructions (ASCs) which license the argument structures observable in (1). One reason for positing ASCs in such cases is that some of the arguments do not appear to be part of the minimal lexical entries for these verbs, as shown in (2).

(2) a. The catcher threw the bean bag.
b. A famous sculptor carved a soap statue of Bugs Bunny.

The same minimal verbs, *throw* and *carve*, are present in (1) and (2). In some theories the variation in argument structure would be captured by one or more lexical rules that derive a verb in (2) from the corresponding verb in (1). In this chapter ASCs are represented as lexical constructions comprised of a mother constituent with a single daughter.[1] The daughter unifies with a lexical item and the mother constituent provides an elaboration or alteration of the daughter's valence and/or semantics. The minimal verbs *throw* and *carve* do not require recipient arguments, but in (1) *throw* and *carve* support recipient arguments. Something has to license these additional arguments. In a constructional grammar that will be an ASC. (Constituent structure aside, G's approach and the present one agree on everything so far.) We can be sure that the construction(s) – or whatever the relevant grammatical devices are – which add the recipient arguments in (1a) and (1e) affect only argument structure, not constituent structure or even grammatical function, because most of the sentences in (1) have passive counterparts, as illustrated in (3).

(3) a. Pat was thrown a bean bag (by the catcher).
b. I was promised a raise (by the boss).
c. Late arrivals are always denied permission to enter (by the administration).
d. I was bequeathed a collection of risqué postcards (by Aunt Maude).
e. Kim was allowed two free throws (by the referee).
f. *My sister was carved a soap statue of Bugs Bunny (by a famous sculptor).[2]

I will refer to the ASC which licenses realization of the recipient as a core syntactic argument in both (1) and (3a)–(3e) as the Recipient Construction (RC). This chapter will attempt to build on G's observation that RC sentences produce systematically different sets of entailments depending on the semantic class of the verb. Examples (1a) and (3a) entail that Pat received the bean bag, (1b) and (3b) entail nothing about my receiving or not receiving a raise, and (1c) and (3c) entail that late arrivals do *not* receive permission to enter.

Acknowledging these insights from G, the account to be developed here will claim certain empirical advantages, for example, accounting for the ungrammaticality of sentences like (3f). It will also claim theoretical advantages in proposing a less complex theoretical machinery than G's – a monotonic architecture that depends only on structure sharing (unification) and does not incorporate either overriding or several other of G's CL-related devices. The approach to ASCs taken here will also motivate a discussion of the notion of *adjunct* in a constructional framework, establishing a three-way distinction between inherent arguments of a verb, added arguments and adjuncts.

Section 2 of this chapter reviews G's analysis of the recipient (née 'dative shift') phenomenon. Section 3 gives an informal sketch of a monotonic CG analysis of these facts. Section 4 presents an implementation of the analysis sketched in Section 3. The notation used in Section 4 adopts some features of style and several features of substance from HPSG. On the style side, constituency is represented by trees rather than by inclusion of boxes, unification tags are indicated by boxed numerals, and the frames or scenes feature is renamed 'list'. More substantively, the list value and valence value are treated as lists, rather than sets, individual frames are assumed to form a type hierarchy, and reference within a frame to another frame is achieved via a 'handle' feature on the embedded frame, rather than by attaching a tag to the embedded frame itself. These and other notational innovations are explained as they arise. Section 5 applies this style of CG implementation to the question of added arguments and adjuncts. Section 6 presents a brief conclusion.

2. Goldberg's analysis

G posits six distinct *senses* of the ditransitive construction and presents its analysis as an example of *constructional polysemy*. These senses are illustrated in Figure 1. Each sense of the construction corresponds to a distinct set of entailments along the lines discussed above. Each sense of the construction also combines with verbs of a distinct semantic class or set of classes. For example, the "central" sense (A) combines with verbs of giving (*give, hand, pass,*...), with verbs of "instantaneous causation of ballistic motion" (*throw, toss,*...), and with verbs of "continuous causation in a deictically specified direction" (*bring, take,* ...). It will be argued below that positing various senses of the construction while also recognizing (sets of) semantic classes of verbs is largely redundant with regard to accounting for the differences in entailment. We will posit three maximal subconstructions (as against G's six senses) and in our

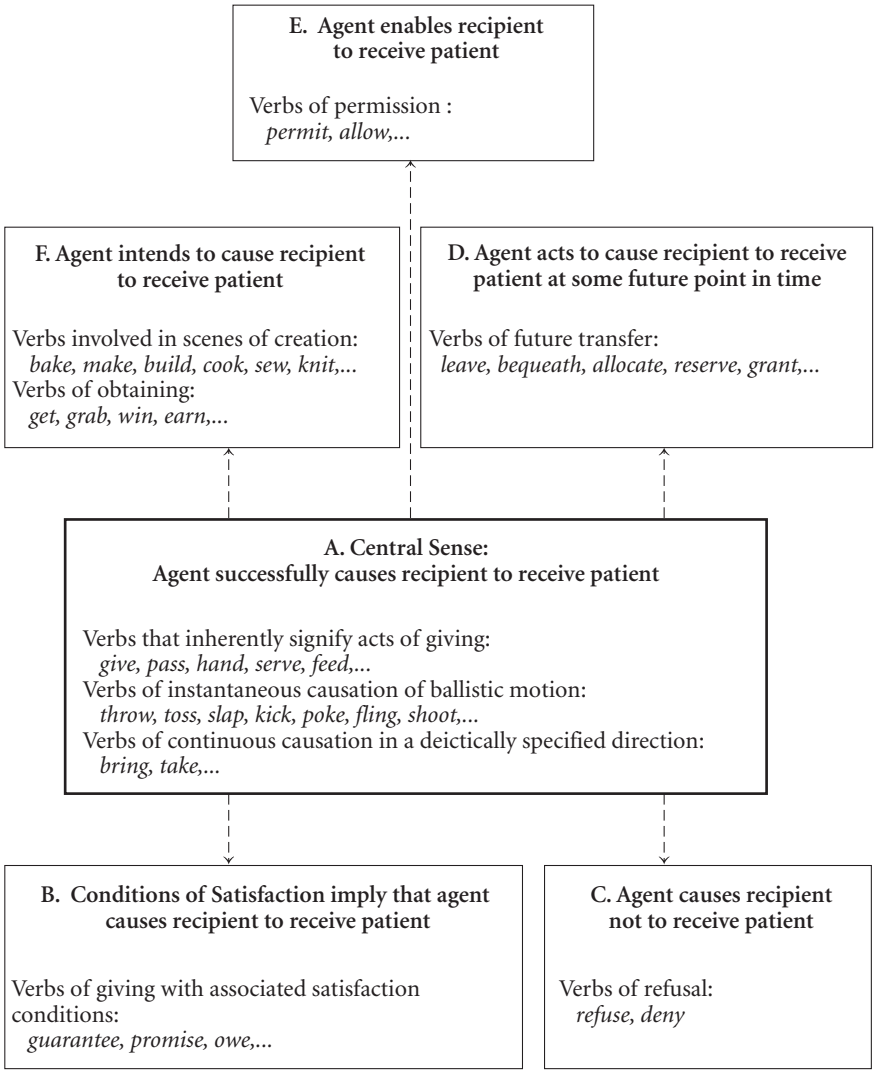


Figure 1. G's six senses of the Ditransitive construction (adapted from Goldberg 1995: 38)

analysis many of the distinctions in entailments will follow from the semantics of the verbs alone. One of our maximal subconstructions will be distinguished from the other two by syntactic, as well as semantic, behavior, thus yielding only two maximal subconstructions distinguished by semantics alone.

Table 1. Illustration of the effects of polysemy links in senses of the Ditransitive construction (adapted from Goldberg 1995:75)

A.	'X CAUSES Y TO RECEIVE Z' (central sense) Example: Joe gave Sally the ball.
B.	'Conditions of satisfaction imply 'X CAUSES Y TO RECEIVE Z' Example: Joe promised Bob a car.
C.	'X CAUSES Y NOT TO RECEIVE Z' Example: Joe refused Bob a cookie.
D.	'X ACTS TO CAUSE Y TO RECEIVE Z at some future point in time' Example: Joe bequeathed Bob a fortune.
E.	'X ENABLES Y TO RECEIVE Z' Example: Joe permitted Chris an apple.
F.	'X INTENDS TO CAUSE Y TO RECEIVE Z' Example: Joe baked Bob a cake.

In G's analysis, each of the non-central senses is *based on* the central sense and is related to it by a distinct *polysemy link*. (Other major categories of interconstructional links in G's theory are *metaphorical extension links*, *subpart links,* and *instance links;* 1995:75.) Polysemy links "capture the nature of the semantic relations between a particular sense of a construction and any extensions from this sense" (1995:75). Links themselves are considered *objects* in G's theory (1995:74ff.), that is, elements of the grammar. So the theory illustrated in Figure 1 posits six sets of verb classes, six senses of the ditransitive construction and five distinct polysemy links, each relating the central sense to one of the other five senses.[3]

G does not place any limits on the range of possible individual links within the four major types of links, perhaps considering the inventory of individual links to be unbounded, on the model of open class lexical items. Links can add or subtract predicates or logical operators and move things around in a quasi-logical form, apparently *ad libitum*. Table 1 summarizes G's characterization (1995:75) of the behavior of the six polysemy links at work in relating each of the non-central senses of the ditransitive construction to the central sense.

The link to sense B embeds sense A as the second argument of the added predicate IMPLY, the first (added) argument of IMPLY being "Conditions of satisfaction". The link to sense C negates the lower predicate of sense A. The link to sense D temporally separates the givers act from the event in which the recipient receives the gift. The link to sense E substitutes ENABLE for CAUSE in sense A. The link to sense F inserts INTEND as the highest predicate in sense A. Each of these links is posited to be an element of English grammar.[4]

Table 2. Illustration of the effects of polysemy links in senses of the Caused Motion construction (adapted from Goldberg 1995: 76)

A.	'X CAUSES Y TO MOVE Z' (central sense) Example: Pat pushed the piano into the room.
B.	'Conditions of satisfaction imply 'X CAUSES Y TO MOVE Z' Example: Pat ordered him into the room.
C.	'X CAUSES Y NOT TO MOVE FROM [sic] Z' Example: Pat locked Chris into the room.
D.	'X HELPS Y TO MOVE Z' Example: Pat assisted Chris into the room.
E.	'X ENABLES Y TO MOVE Z' Example: Pat allowed Chris into the room.

3. Preliminary sketch of the maximal subconstructions

I will propose three maximal Recipient constructions. The first, exemplified by (1a) and (3a), corresponds to G's Central Sense. The second, illustrated by (1b)–(1e) and (3b)–(3e), corresponds to G's senses B, C, D, and E. The third, illustrated by (1f) and (3f), corresponds to G's sense F. It is convenient to discuss the last mentioned construction first.

3.1 The Intended Recipient (maximal) construction

Two facts motivate a distinction between what we may call the Intended RC, G's sense F – illustrated in (1f) and (3f), and the other two maximal recipient constructions. The first is the syntactic fact that the recipient argument cannot in the Intended RC be realized as a passive subject.

(4) a. *He was baked a cake on his birthday.
b. *Janet was written a beautiful sonnet (by Clarence).
c. *I've never been picked flowers before.

The second is the semantic fact that the intended recipient must be understood as benefiting from the (projected) receipt of the theme, as indicated by the contrasts in (5) and (6).

(5) a. I got the cats some medicine.
b. #I got the rats some poison. (Intended interpretation: I plan to use the poison to kill the rats.)

(6) a. Claudine is mixing the neighbor a potion to cure him.
b. #Claudine is mixing the neighbor a potion to murder him.

This ASC entails that the actor obtain the theme in some way with the intention of transferring it to the intended recipient, but it does not entail that the intended recipient receive the theme. For example, the a versions of (5) and (6) might unproblematically be followed by a report of lost medicine or a spilled potion. The lack of a reception entailment is not, however, unique to this subconstruction; it is also present in the Modal RC, to be discussed in Section 3.3.

3.2 The Direct Recipient construction

The Direct RC (1a, 3a) is distinguished from the other maximal RCs in entailing that the actor intentionally causes the undergoer-theme to move and that the putative recipient actually receives the theme. Thus, the following anomalies.

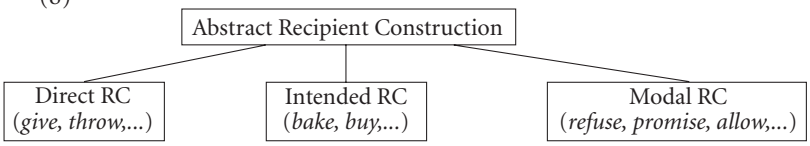
(7) a. #I gave/tossed/took him the package but it didn't move.
b. #I gave/tossed/took him the package but he didn't get it.

A glance at the verbs listed in any of the boxes other than A in Figure 1 should satisfy the reader that the kind of semantic anomalies illustrated in (7) do not arise in recipient sentences employing these verbs.

3.3 The Modal Recipient construction

The remaining cases, examples (1b)–(1e) and (3b)–(3e) lack the constraints barring passive and requiring beneficiary semantics of the Intended RC but share with it the lack of a reception entailment. In each of these cases, the act performed by the actor embodies an intent that involves in some way the recipient's reception of the theme, but in each subcase the reception event is subject to one or another modality or qualification. In case B (*guarantee*, *promise,* ...) the receiving event is subject to an OBLIGATION of the actor. In case C (*refuse, deny, spare,* ...) the receiving event is subject to NEGATION. In case D (*leave, bequeath, allocate,* ...), the receiving event is subject to FUTURITY. In case E (*permit, allow,* ...) the receiving event is subject to POSSIBILITY. The differences in entailment among G's senses B, C, D, and E, all of which are grouped in the present analysis under the Modal RC, can be seen to follow from the meanings of the verbs, with no further multiplication of constructions (or senses thereof) required. Each verb unified with the Modal RC furnishes its own particular modalization of the reception event. The postulated constructions are related as shown in the following (monotonic) inheritance hierarchy.

(8)



4. Representation of the RC constructions

The recipient constructions will be represented in monotonic CG along the lines of Kay and Fillmore (1999), employing a form of Minimal Recursion Semantics (MRS) (Copestake et al. 1995; Copestake et al. 1999).

The major component of an MRS representation is a list of minimal frames or relations (rels), represented here as AVMs, whose scopal relationships are displayed by structure sharing (unification) between the handle value of an embedded frame and the value of some (non-handle) attribute of the embedding frame.[5] This list is given as the value of the path sem(antics)|cont(ent)|list.[6] Frames or rels are assumed to constitute a type hierarchy of the kind familiar from HPSG. Thus, an *intentional-act* frame can unify, for example, with an *intentional-cause* frame, since the latter is by its type definition a subtype of the former. Similarly, the (principal) frames of some lexical verbs will be subtypes of *intentional-cause*, permitting just those lexical verbs to unify with a constituent whose main frame is *intentional-cause.*

4.1 The Abstract Recipient construction

The Abstract RC is shown in Figure 2. It displays those properties that are common to the three maximal recipient constructions.[7] Syntactically, the construction presents a 'two-storied' template for a derived lexical verb. The upper box represents the mother and the lower box the daughter. The mother's syntax value is [cat v, lex +, min –]. The daughter constituent will unify with a possibly minimal lexical verb.[8]

The mother constituent displays the properties of the derived form. Semantically, in the list value, the main frame is of the type *intentional-act*. This frame is primary in the sense that its handle value 1 and its event value 4 unify with the exterior handle and index values.[9] In addition to the handle and event attributes the *intl-act* frame has actor 2, undergoer 3, and intended-result features. The intended-result value is indicated simply by the type designation *handle,* which allows the handle value of some other frame to unify with this

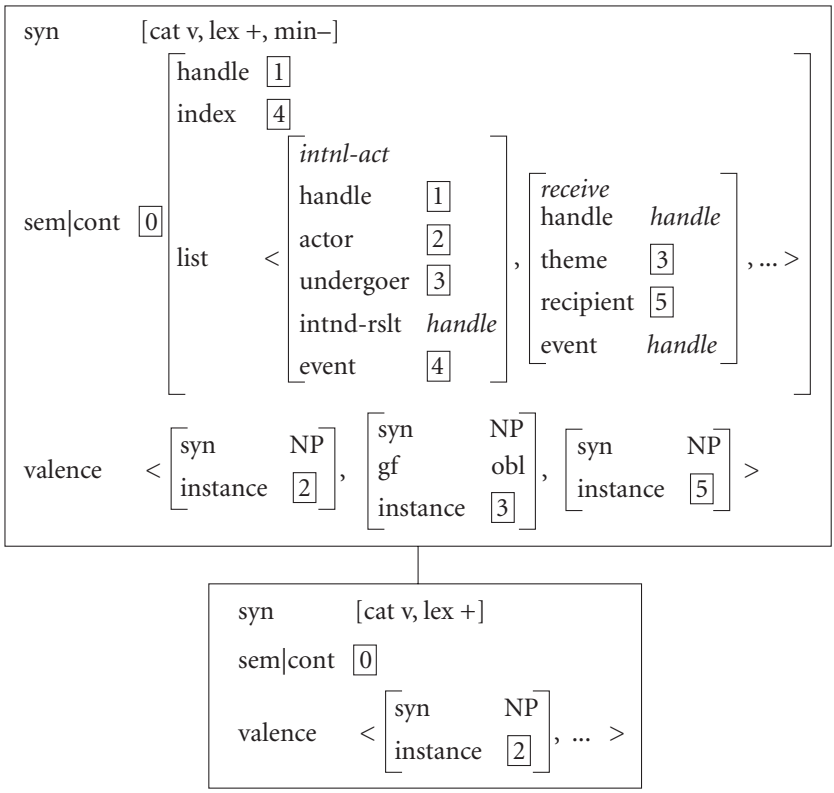


Figure 2. Abstract Recipient construction

argument of the *intentional act* frame.[10] Specifically, we will see below that in the Direct RC construction the *receive* frame is the intended result of the intentional act frame while in the Indirect RC and Modal RC constructions it is not. The *receive* frame itself has theme and recipient values, 3 and 5 respectively. The theme 3 unifies with the undergoer of the *intentional-act.*

In the valence list, there are three NP feature structures. Reading from the left, the first, whose semantics|instance value is 2, provides the actor value of the main semantic frame.[11] The second member of the valence set, although a noun phrase syntactically, bears an oblique grammatical function. This combination is the equivalent in the present approach of the OBJ2 grammatical function in LFG and in Goldberg's CL-based CG. Semantically this valence element unifies with the undergoer argument of the main frame and the theme argument of the *receive* frame. The final valence element is the recipient. Like

the actor element, it is not accorded a gf value by the Abstract RC. Unification with the Transitive or Passive linking constructions will decide the gf values of the recipient and actor arguments.[12] The daughter constituent's semantic content [0] unifies with that of the mother. The daughter's syntax indicates that it is a lexical verb and the valence value shows that the distinguished argument of the daughter is also that of the mother.

4.2 The Direct Recipient construction

The Direct RC, corresponding to G's central sense A, inherits all the information of the Abstract RC and supplies some information of its own. In Figure 3, the new information is shown in boldface.[13] The main frame is of type (intentional) *cause-to-move*, defined as a subtype of *intentional-act*. The *receive* frame

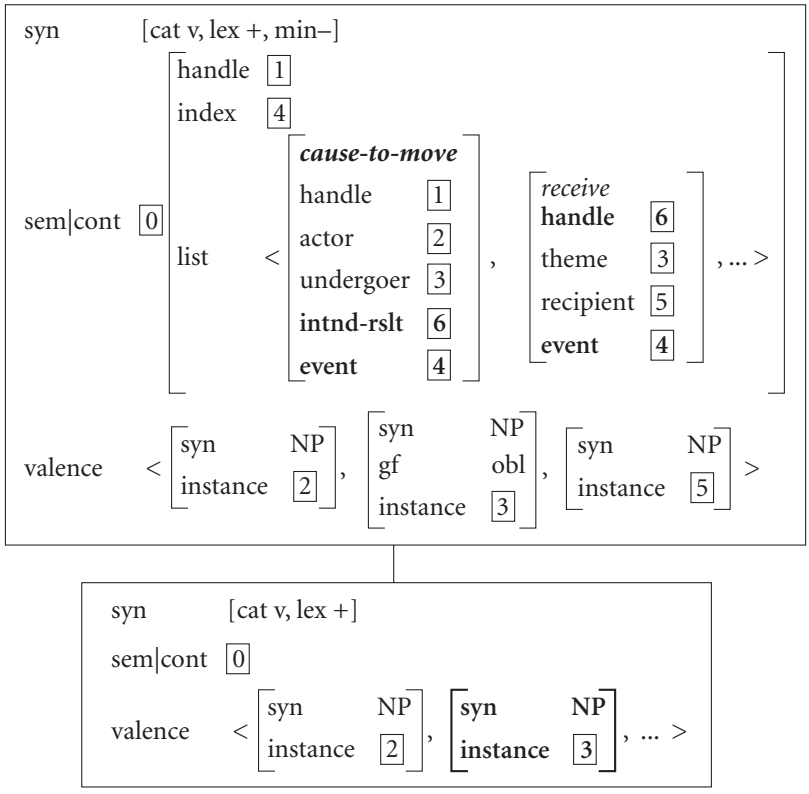


Figure 3. Direct Recipient construction

is unified with the intended result of the main frame, via 6, and the event features of the main and receive frames are unified, via 4. Event variables in MRS furnish an intuitively satisfying formal device for distinguishing the semantics of the Direct RC from the other RC constructions. If I give or throw you something my action on the gift or missile and your reception of it constitute a single event. If I promise you something or bake you something my act of promising or baking constitutes an event in itself, distinct from the merely potential event in which you receive the object of my promise or the product of my oven. Unification of the event variables of the *cause-to-move* frame and the *receive* frame implements the observation that in the Direct RC actual receipt of the theme by the recipient is entailed. The daughter's valence in Figure 3 shows that input verbs to the Direct RC must have at least two valence elements.

4.3 The Intended Recipient construction

The Intended RC, shown in Figure 4, corresponds to G's sense F. It elaborates the semantics of the Abstract RC in several ways. First, the main frame (or rel) is of type *obtain-act*, another subtype of *intentional-act*. Secondly, the intended result 6 of the *obtain-act* is that a certain *benefit-frame* 6 will befall a beneficiary 5, whose benefit 3 is the theme of the *receive* event and the undergoer of the *obtain-act*.[14] Finally, the event variables of the *benefit* and *receive* frames are unified 8 and are marked as necessarily distinct −4 from the event variable of the *obtain-act*.

The valence structure of this construction also stipulates something beyond that of the Abstract RC, namely the impossibility of co-occurrence with passive. In Figure 4 the mother's valence structure shows that subject gf is assigned to the distinguished argument NP, which prevents unification of this structure with the passive or middle linking constructions.

4.4 The Modal Recipient construction

In the Modal RC, shown in Figure 5, the intended result 6 of the *intentional-act* is a *modality* 6, which is applied to an eventuality 7 that corresponds to the familiar *receive* event 7. The Modal RC differs from both the Direct RC and the Intended RC in its event composition. In the Direct RC the *cause-to-move* and *receive* events are the same. In the Intended RC the *benefit-frame* and the *receive* frame denote a single event and this event is distinct from the *obtain-act* event. In the Modal RC neither identity nor non-identity is specified between the *intentional-act* and *receive* events, since different verbs affect this outcome

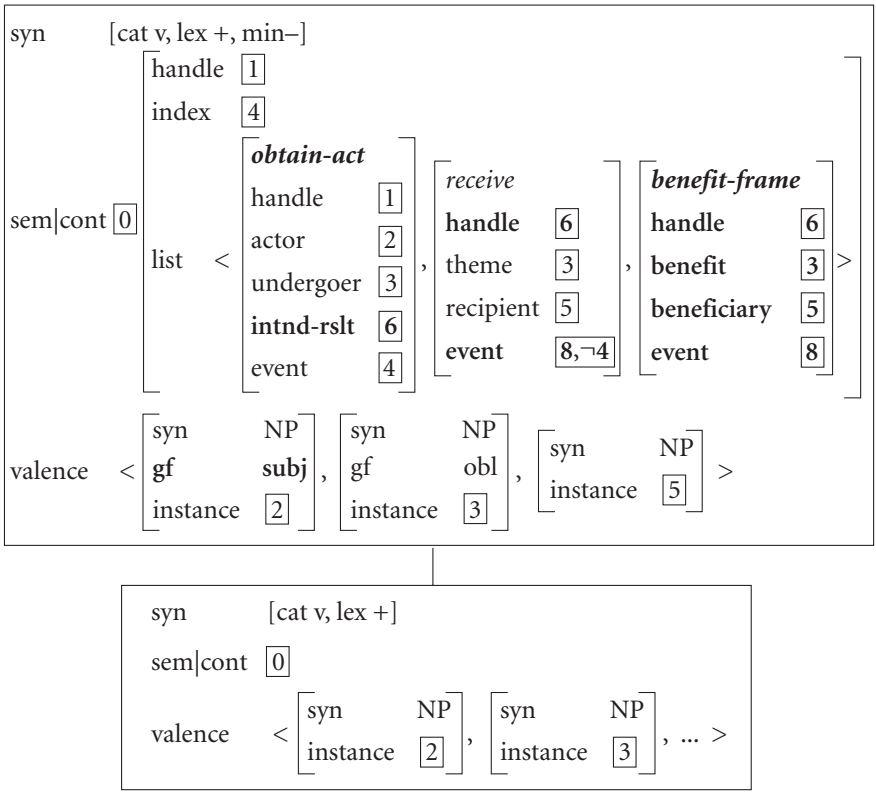


Figure 4. Intended Recipient construction

differently. For obligation verbs like *promise* the *intentional-act* and *modality* (i.e., *obligation)* frames share an event variable while the *receive* frame constitutes a distinct event. For futurity verbs like *bequeath* and permission verbs like *allow* the event variables of the *modality* and *receive* frames are identified and that of the *intentional-act* frame is distinct. For negation verbs like *deny* all three event variables are unified, that is, there is just one event, as in the case of the Direct RC.

4.5 Lexical verbs unifying with the Modal RC

The differing entailments corresponding to boxes B, C, D, and E in Figure 1 do not require different senses of the RC but simply arise from the subtype of modality provided by a verb when it unifies with the Modal RC. Figure 6 shows

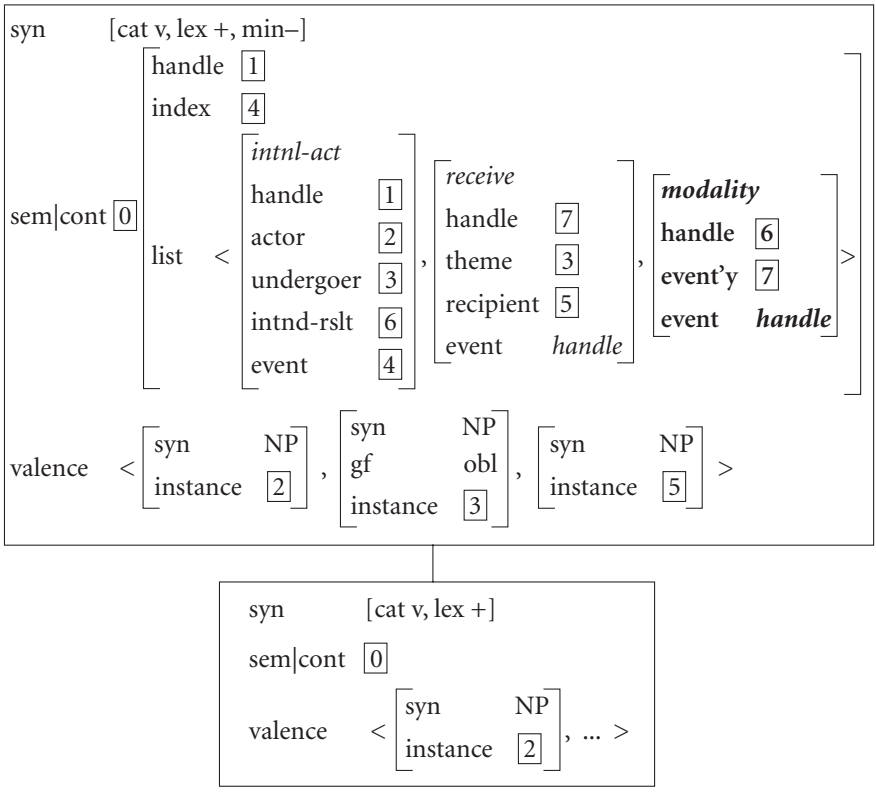


Figure 5. Modal Recipient construction

a proposed minimal lexical entry for the verb *promise*. To promise is to perform a speech act that obligates the actor to the occurrence of some eventuality. Figure 6 correspondingly provides a *speech-act* frame which can unify with the *intentional-act* frame of the Modal RC, an *oblige* frame which can unify with the *modality* frame of the Modal RC, and an *eventuality* frame which can unify with the *receive* frame of the Modal RC. The eventuality frame 7 unifies with the obligation of the *oblige* frame. The event variables identify the *speech-act* and *oblige* frames 4 and specify that the *eventuality* frame 7, which corresponds to the obligation 7 of the *oblige* frame, constitutes a separate event ¬4.[15]

Figure 7 shows the structure resulting from unification of the daughter constituent of the Modal RC with minimal *promise*. All the semantic information that the daughter acquires by unification with minimal *promise* is passed up to the mother by the unification 0 of the two sem|cont values. The external

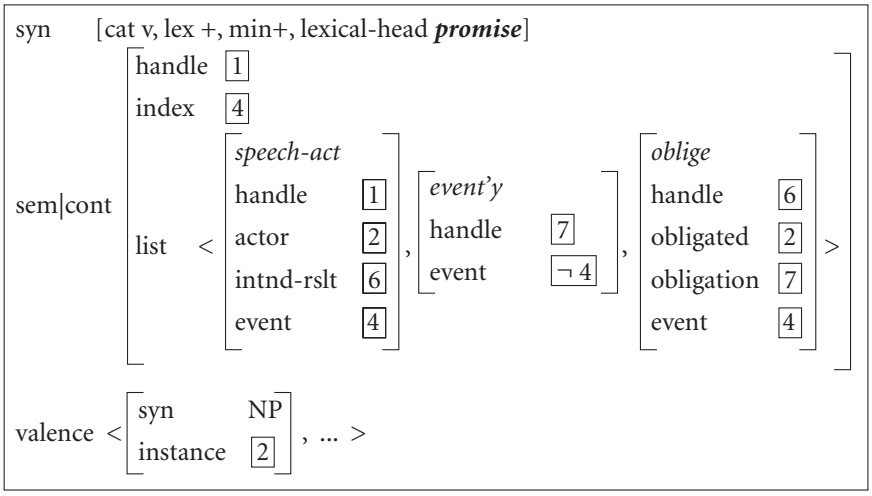


Figure 6. Minimal lexical entry for *promise*

(mother) structure cannot be a minimal lexical entry but it is not a maximal word either because it lacks both inflectional information and a fully linked valence. For example, the structure in Figure 7 can unify with either transitive or passive constructions and with various morphological constructions that determine the verb's inflectional properties.

Figure 8 shows the minimal lexical entry for *allow*. To (intentionally) allow an eventuality e is to intentionally cause e to be possible. As with *promise*, this diagram represents an ordinary verb (intentionally) *allow,* which when unified with Modal RC, can license sentences like (1e) and (3e).

Unlike *promise* and *allow*, a few verbs used with the Modal RC have quite distinct senses from their ordinary uses and thus require lexical entries on their own. This is most clearly the case for the negative verbs, such as *deny* and *refuse*. *Deny,* for example, when not used in a recipient context takes a propositional complement. The minimal lexical entry for *deny* shown in Figure 9 is thus not a representation of the familiar, proposition-rejecting verb *deny*, but a special, reception-prevention *deny* that appears only in recipient contexts.

To summarize the argument so far, there are three maximal subconstructions of the Abstract RC. The Direct RC unifies the *cause-to-move* intentional act and *receive* events and makes the *receive* event the intended result of the *cause-to-move* frame. It allows passive. The Intended RC stipulates non-identity of the *obtain-act* and *receive* events. It identifies both the *benefit-frame* and the *receive* frame as intended results of the *obtain-act*. The Intended RC

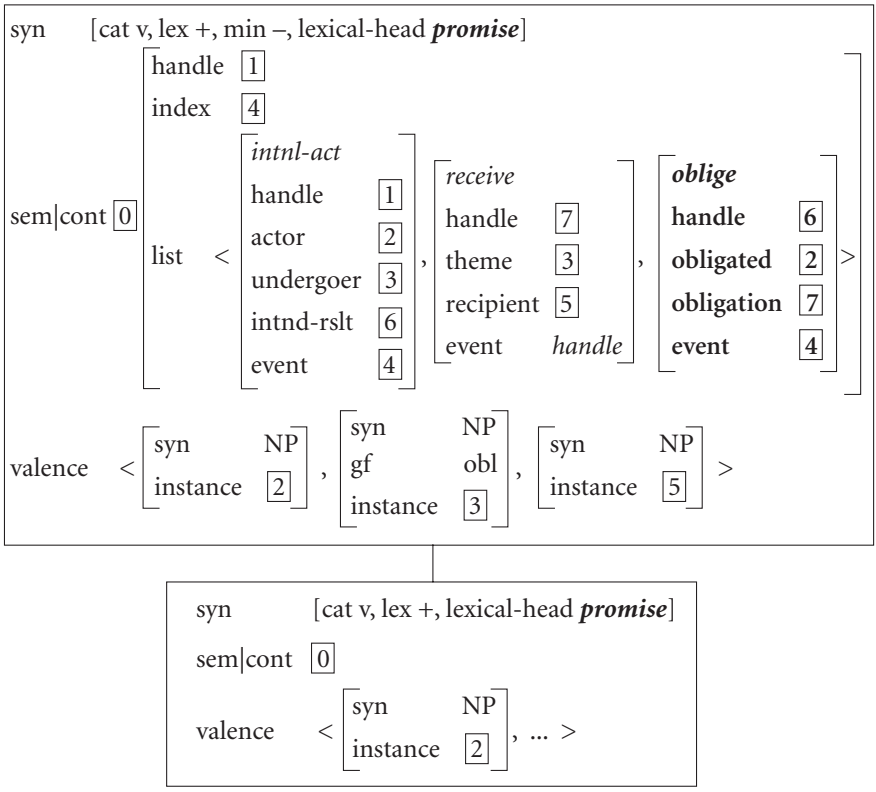


Figure 7. Modal Recipient construction unified with minimal *promise*

blocks the passive. The Modal RC specifies neither identity nor non-identity of the *intentional-act* and the *receive* events. It provides a *modality* frame which unifies with the intended result of the *intentional-act* and whose *eventuality* argument unifies with the *receive* frame. The particular modality (negation, possibility, obligation, etc.) is provided by the semantics of the minimal verb. This is the mechanism by which the entailment distinctions between G's senses B, C, D, and E are provided by the lexical verbs, obviating the need to posit constructional polysemy and inter-constructional links. The Modal RC permits passive.[16]

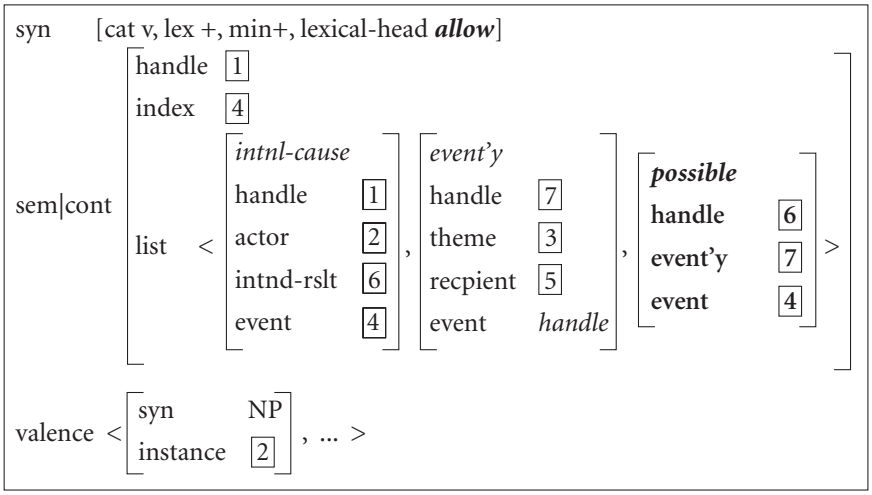


Figure 8. Minimal lexical entry for *allow*

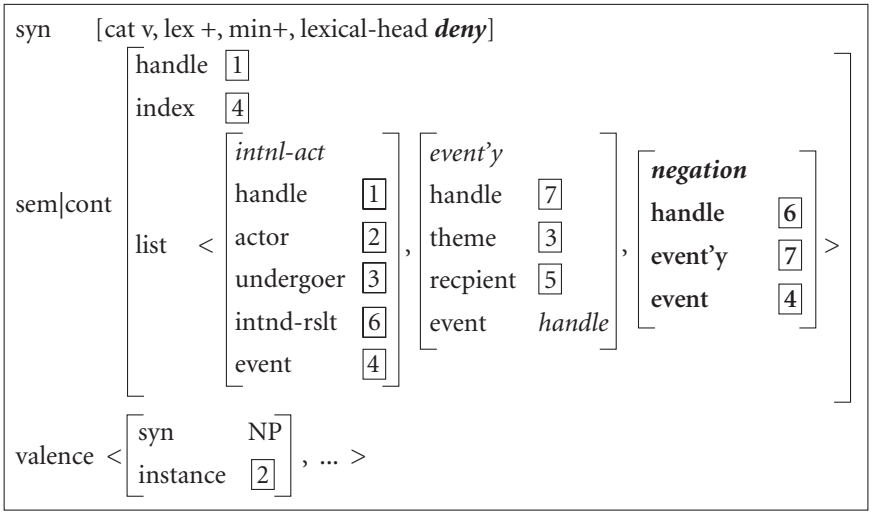


Figure 9. Minimal lexical entry for *deny* [special for Modal RC]

5. Inherent arguments, added arguments and adjuncts

In contrast to the phrase-structural view of adjuncthood characteristic of the GB-Minimalism tradition, I will take a more traditional approach to the argument/adjunct distinction. In X-bar usage an adjunct is a major constituent that

cannot be accommodated under the X-bar schema as a head, complement or specifier. Apart from the X-bar tradition, there are both distributional and semantic considerations associated with the notion of adjunct. Distributionally, an immediate constituent of a clause or VP that is neither the main predicator nor a constituent licensed by the main predicator is ordinarily considered an adjunct.[17] Semantically, arguments complete the meaning of a predicator while adjuncts add something to a completed predication. Ideally these two conditions match, the semantic elements required to complete the meaning of the predicator corresponding one-to-one with the constituents required by the syntactic valence of that predicator. As with many ideals, this one is honored as often in the breach as the observance. The most obvious breaches are semantically required elements that are successfully construed without being syntactically realized (Fillmore 1986) and syntactically required elements that play no semantic role in their clause (e.g., expletives and raised constituents). There are subtler problems as well, one of which is insightfully addressed by G. There are constituents which give every appearance of being arguments but which are not required, either semantically or syntactically, by the minimal valence of the verb. Examples, (1a), (1f), (2a), and (2b) (repeated), as compared to examples (9) and (10) illustrate this phenomenon.

(1) a. The catcher threw Pat the bean bag.
f. A famous sculptor carved my sister a soap statue of Bugs Bunny.

(2) a. The catcher threw the bean bag.
b. A famous sculptor carved a soap statue of Bugs Bunny.

(9) a. The butcher gave Kim the shopping bag.
b. Agent Bond slipped Ms. Galore a photo of the spy plane.

(10) a. *The butcher gave the shopping bag.
b. *Agent Bond slipped a photo of the spy plane.

Since the constituents *Kim* and *Ms. Galore* are unquestionably arguments in (9), there seems to be no reason not to consider *Pat* and *my sister* arguments in (1), despite their not being required by the minimal valence of their governing verbs. The constituents in (1) seem to play semantic roles analogous to those of the corresponding constituents in (9). Further, these items are realized as direct objects and could appear as passive subjects, the last places we would expect to find constituents we could confidently call adjuncts. As we have seen, ASCs allow us to expand the valences of verbs to accommodate valence elements that are not required by the minimal verb but which nevertheless behave both semantically and syntactically like arguments.

5.1 Caused-motion phenomena

We will come to the conclusion that prepositional adjuncts are distinguished from prepositional arguments semantically as follows: an adjunct modifies the predication arising from the main predicator while an added argument, as the name indicates, simply augments the list of arguments of the predicator. We will implement this in the adjunct case by treating the index of the verb as an argument of the adjunct, in effect making the adjunct predicate something about the scene denoted by the verb and its arguments. To flesh out this arid claim somewhat, we consider first the phenomena that lead G to posit a three-argument caused-motion construction.

Partially on the basis of examples such as (11)–(13), in which the moved theme cannot occur without the path expression, G posits a caused-motion construction with several properties similar to those of the ditransitive construction.

(11) a. They laughed him off the stage.
b. *They laughed him.

(12) a. Frank sneezed the tissue off the table.
b. *Frank sneezed the tissue.

(13) a. Sue let the water out of the bathtub.
b. *Sue let the water.

Additional motivation comes from examples like (14), in which the verb does not have a caused-motion meaning unless the path expression is present.

(14) a. Mary urged Bill into the house.
b. Sam helped him into the car.
c. Frank squeezed the ball through the crack.

The hypothesized caused-motion construction is then assumed also to license sentences such as (15a), (15c), and (15e), where the verb can occur in a caused motion meaning without the path expression, as shown in (15b), (15d), and (15f).

(15) a. They chased the poor guy out of the room.
b. They chased the poor guy.
c. Frank threw the key on the table.
d. Frank threw the key.
e. The engine was leaking oil onto the driveway.
f. The engine was leaking oil.

There are reasons, however, not to posit a caused-motion construction, but instead to posit an Added Path Argument construction. Consider the examples in (16).

(16) a. The top was spinning.
b. Kim was spinning the top
c. The top was spinning off the table.
d. Kim was spinning the top off the table.

To capture the relation between intransitive *spin* in (16a) and transitive *spin* in (16b) there must be a causative ASC that adds a causative agent to the semantics and valence of an intransitive verb (*spin, boil, walk, melt,* ...). To capture the relation between pathless intransitive *spin* in (16a) and path-augmented intransitive *spin* in (16c), there must be an ASC that adds a path argument to intransitive verbs.[18] If we now posit a caused-motion construction in addition to the causative agent ASC and the path augmentation ASC, a sentence like (16d) will be given a spurious ambiguity, with agentive path-augmented *spin* licensed either by the caused-motion construction alone or by the other two constructions in combination. Another way to see the same facts is that once we have a path-augmentation ASC and a causative agent ASC, both of which are required independently of three-argument verbs, we have no use for a three-argument, caused-motion ASC.

A second problem with the caused-motion construction is that it overgenerates. If there is a caused motion construction that licenses examples like (11) and (12), it will also license examples like (17), which are ungrammatical although readily understandable.

(17) a. *She screamed him out of her apartment.
b. *He bragged her to sleep.
c. *The bomb went off/detonated the desk through the window.
d. *The storm raged water into our basement/the roof off the house.
f. *The lion roared the gazelle into the thicket.
g. *They coughed him off the stage. (Cf. 11)

So we have strong reason to reject the hypothesis of a caused-motion construction. But if there is no caused-motion construction, then what licenses the argument structures of sentences like (11)–(13), where the minimal verb does not license a theme argument, or sentences like (14), in which the ordinary transitive (or passive) use does not have a caused-motion meaning? I would suggest that what is at work here is not a construction, an active part of the grammar, but what Charles Fillmore (pc) has called a pattern of coinage.

A different example of a pattern of coinage is the formula implicit in many expressions denoting an extreme degree of a scalar adjective. This pattern is exemplified by the expressions in (18) and can be summarized 'A as NP'.

(18) a. light as a feather
b. heavy as lead
c. quick as a wink
d. slow as molasses
e. hard as a rock/nails
f. old as the hills/Methuselah
g. dark as night
h. bright as a penny
i. rich as Croesus
j. high as a kite
k. happy as a lark
l. easy as duck soup/pie
m. *easy as goose fritters/cake
n. *young as a chick

Examples (18m) and (18n) are not English now, but who knows if they will become so. Examples (18l) might have sounded as strange to their first hearers as examples m do now. Example n seems a promising candidate. A chick is perhaps as evocative an image of youth as any, and to my knowledge English does not yet have a *young as an x* collocation. I suggest that the caused-motion phenomenon is not a construction of English grammar but a coinage template, similar to the 'A as NP' template, not part of the grammar but a potential source of analogical neologisms.

Returning to the problematical examples (11)–(14), the contrast between unexceptionable (11), with *laugh,* and unacceptable (17d), with *cough,* suggests simply that the coinage pattern has been lexicalized with the former but not with the latter, just as it has with (18l) rather than (18m). Examples like (12) may represent nonce applications of the pattern. *Sneeze* used as a caused-motion verb might be the kind of expression one could find once or not at all in a very large corpus.[19] The other examples in this group represent, on this view, further, more or less idiosyncratic, lexicalizations using the coinage pattern. Liquids, gasses and moving masses can be *let in, into, out,* and *out of* containers but not *under, behind, onto, to, at,* etc. objects and surfaces in general. There appears to be no productive caused-motion construction. Rather the relatively small number of attested caused-motion expressions that are not licensed either by independently motivated ASCs or by semantically triadic

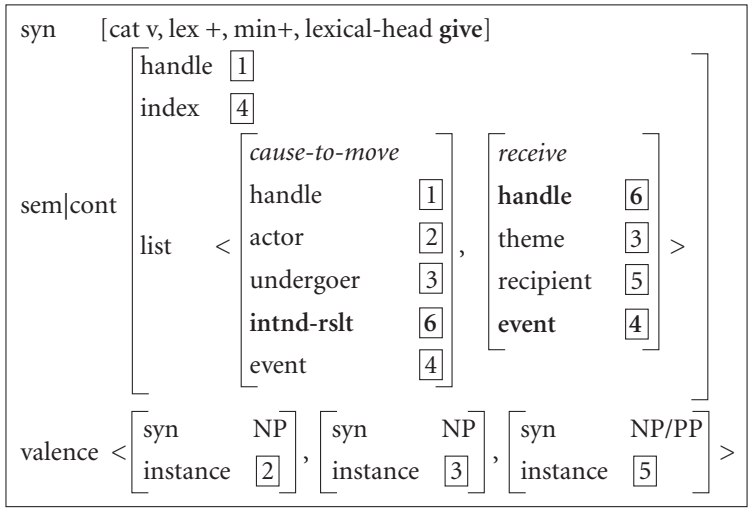


Figure 10. Minimal lexical entry for *give*

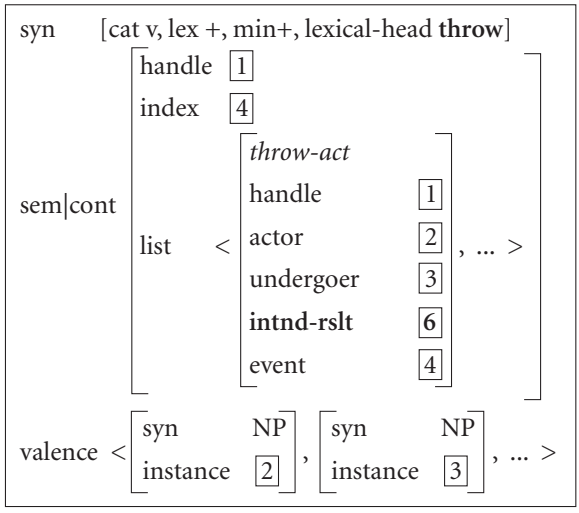


Figure 11. Minimal lexical entry for *throw*

minimal lexical entries (such as *give*) may represent a pattern of coinage reflected in a rich maze of lexicalizations. A construction is reliably productive synchronically; a pattern of coinage is unreliably productive diachronically.

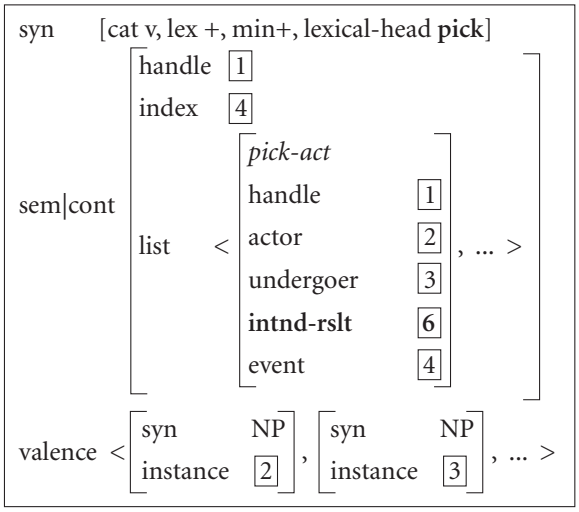


Figure 12. Minimal lexical entry for *pick*

5.2 Representing added path argument and setting adjunct ASCs

Added arguments, as judged on semantic grounds, are sometimes more resistant to fronting than setting adjuncts.

(19) a. In the closet, the top was spinning
b. *Off the table, the top was spinning.
c. In the closet, Kim was spinning the top.
d. *Off the table, Kim was spinning the top.

A semantic correlate of this distributional difference seems to be that in the adjunct cases (19a) and (19c) *in the closet* characterizes an entire motion event: a top spinning, while in the added argument cases (19b) and (19d) *off the table* denotes the path traversed by a theme within a motion event. This unoriginal observation is compatible with the existence of sentences containing both added path arguments and setting adjuncts, such as those in (20).

(20) a. In the closet, the top was spinning off the table.
b. In the closet, Kim was spinning the top off the table.
c. The ball can't bounce in(to) the dugout in this ballpark.

Figures 13 and 14 display Added Path Argument and Setting Adjunct constructions, respectively. Figure 13 presents a now familiar 'two-story' lexical construction where the daughter constituent unifies with a minimal verb, e.g., *spin*.

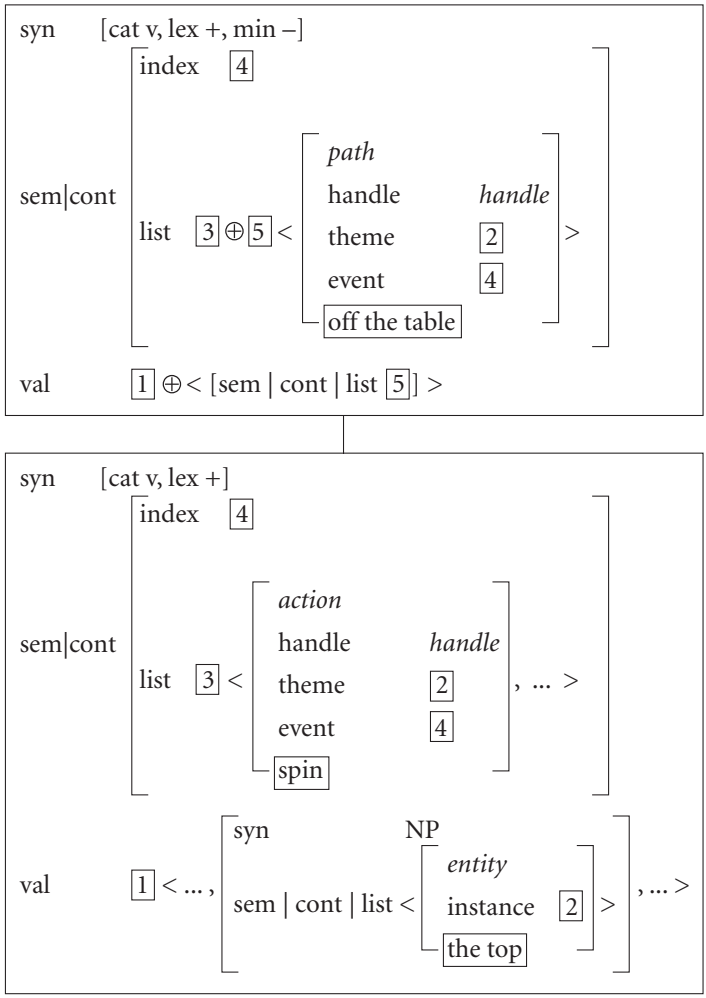


Figure 13. Added path argument construction

Accordingly, the daughter's syntax includes [cat v] and [lex +]. The daughter's semantics list 3 contains the main frame contributed by the verb, e.g., *spin*. The event variable of this element 4 is unified with the index value; that is, 4 denotes the main event reference of the underived verb. The theme argument 2 of the main frame corresponds to the instance value 2 of an NP member of the valence list 1. In our running example, 2 denotes the reference of *the top*.

The mother constituent in Figure 13 adds both to the sem|cont|list and to the val(ence)|list of the daughter an appropriate representation of a path ele-

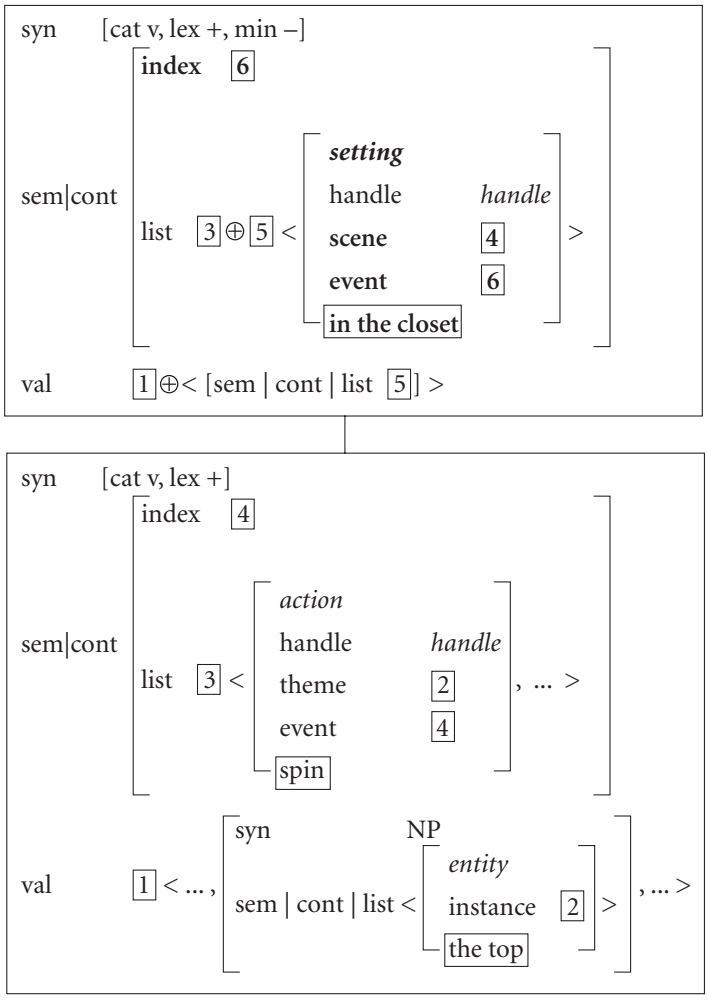


Figure 14. Setting adjunct construction

ment. The sem|cont|list is the concatenation, symbolized ⊕, of the daughter's sem|cont|list 3 and a singleton list 5 containing a path frame. The upstairs valence list is the concatenation of the daughter's valence|list 1 and a singleton list whose unique element's sem|cont|list 5 unifies with the added path list and whose syntax is unspecified with respect to category.[20]

The event value 4 of the path element is the same as that of the main lexical frame, e.g., *spin,* and the lower index. The index value of the daughter constituent 4 is unified with the index value of the mother constituent, which

means that the event denoted by the derived verb is the event denoted by the underived verb.

Figure 14 represents a setting adjunct construction. It differs only slightly from the added path argument construction of Figure 13, the differences highlighted in boldface. Nothing about the lower constituent, representing the underived lexical item, is changed. In the mother constituent, the unique member of the list 5 appended to the mother's sem|cont|list is of type *setting* rather than *path*. The *scene* argument of this element is not, as was the case with the theme argument in Figure 13, an argument of the underived verb, but rather the index 4 of the underived verb. In this way the setting takes the whole event denoted by the verb as its argument. Finally, the event variable of the setting adjunct 6, rather than that of the underived verb 4, is unified with the index of the derived verb.

6. Conclusion

We have compared a monotonic constructional approach with a non-monotonic, CL-based constructional approach to recipient argument structures. We have found that several of the senses posited in the CL-based analysis are superfluous, as are the non-monotonic links posited to exist between the different maximal recipient constructions. More generally, we have found that overriding is unnecessary, as is the concept of constructional polysemy. A monotonic approach was found sufficient to account for all the entailment differences motivating the CL-based approach. In addition the monotonic approach permitted an account of syntactic facts, such as the passive possibilities, not covered in the CL-based approach.

We then saw that the formal machinery employed in dealing with recipient and similar argument structure phenomena could be used to establish a distinction between added argument constructions, which simply augment the list of arguments of a predicator, and true semantic adjuncts which take whole predications as arguments. In particular, we found MRS event variables useful in capturing both some fairly subtle distinctions in the semantic structures of the different maximal RC constructions and in the semantic structures induced by individual verbs when combined with the Modal RC. Moreover, event variables played a role in distinguishing the semantics of added arguments from those of setting adjuncts.

Notes

* Thanks to Charles Fillmore, Adele Goldberg, Andreas Kathol and especially Ivan Sag, whose excellent advice has eliminated many errors. Had I followed their advice more closely fewer errors would doubtless remain.

1. Compare the treatment of affixation in Orgun (1996). See also Kay (1997).

2. The possibility of dative shifted and passive phenomena co-occurring is seemingly not permitted by G, whose ASCs assign grammatical functions such as subj, obj and obj2 directly to semantic arguments, with the Distinguished Argument (logical subject) assigned subj function. This appearance of ruling out clauses that are both, say, dative-shifted and passive is deceiving. Goldberg (pc) has in mind foregoing underspecification as a mechanism to permit, for example, the same Passive and Middle ASCs to (possibly) occur in Caused-Motion, Ditransitive, simple Transitive, Resultative, etc. contexts. Rather she posits an inheritance hierarchy of constructions with leaves such as Active Ditransitive, Passive Ditransitive, Simple Passive, Caused Motion Middle, and so on. In this approach the generalizations across, say, all passives, would be captured by inheritance rather than by underspecification. Thus, the constructions G presents as Ditransitive, Caused Motion, Resultative and so on, which assign subj function to the DA, would have been more descriptively named Active Ditransitive, Active Caused Motion, Active Resultative, etc.

3. It should be noted that G proposes that these inter-sense (or inter-constructional) links reappear in other families of constructions. To the extent that this program can be carried out successfully, it will validate G's reification of interconstructional links.

4. The links relating the senses of the ditransitive construction furnish one of G's featured examples of links, which operate in more than one construction family. Related senses of G's caused-motion construction are claimed to show a similar, but not identical, pattern of polysemy. G's polysemy pattern for the caused motion construction is displayed in Table 2. (In Table 2, 'X' denotes an agent, 'Y' a moving theme and 'Z' a path.) Lines A, B, C, and E of Tables 1 and 2 are comparable, with MOVE appearing in Table 2 in the place of RECEIVE in Table 1. Lines D and F of Table 1 and line D of Table 2 are not comparable to any line of the other table. It is argued below that there is no caused-motion construction in the grammar of English.

5. The handle feature simply gives a way of identifying and referring to a frame. Incompletely specified scopal relations, which arise in the treatment of quantification, require an additional MRS device that need not be discussed here. For simplicity of exposition, frame participants are identified by generic role names like 'actor' and 'undergoer' rather than frame-specific names like 'giver' and 'recipient'. This usage is intended as an expository convenience without theoretical weight.

6. The remaining attributes of the semantic content value are 'handle' and 'index'. The former permits reference to the entire content of the list value. The latter makes the event variable of the list value available to larger structures.

7. As is usual in grammars formulated in terms of multiple inheritance hierarchies, only the maximal ('leaf') constructions or types are assumed to play a role in on-line production or

interpretation. Abstract constructions, such as Abstract RC, represent redundancies in, or generalizations over, the 'compiled' grammar of maximal constructions.

8. Recursion is blocked by a non-identity constraint on mothers and daughters of lexical constructions (Kay 1997).

9. An index is a referential pointer. It can be construed as pointing to something in a discourse representation.

10. The *handle* notation is here effectively equivalent to the unspecified FS notation, [ ], of Fillmore and Kay (1995).

11. By convention, the first member of every valence list is the distinguished argument (logical subject). This is the semantic argument, which is assigned by various linking constructions the subject function in active contexts, an optional *by*-oblique function in passive contexts and non-realization with generic construal in middle contexts. The order of the valence list does not correspond (except accidentally) to any ordering of constituents, since the relevant constituents will be ordered differently in, for example, inverted, non-inverted, extracted, etc. structures.

12. The Indirect RC blocks unification with Passive, as will be shown below.

13. This practice is maintained in further figures.

14. It is likely that the benefit semantics of the Intended RC should be treated as presuppositional. I have deliberately overlooked that possibility here to keep the representations as simple as possible.

15. The valence list shown in Figure 6 does not provide for the realization of the promised eventuality. When unified with the Modal RC, the latter construction fills this gap. For non-recipient sentences such as (i) or (ii), one assumes that other linking constructions provide for eventuality complements to be realized as various kinds of clauses or non-finite VPs.

(i) He promised to help you.

(ii) You promised that it would not rain.

16. For completeness, Figures 10, 11 and 12 show lexical entries for *give, throw* and *pick*, respectively. Both *give* and *throw* can unify with the Direct RC although they contain quite distinct sem|cont|list and valence structures. As a verb of obtaining, *pick* exemplifies verbs compatible with the Indirect RC.

17. Ignoring complementizers, markers, conjunctions and perhaps a few other things that are licensed by non-valence constructions. Since NP-internal modifiers are not immediate constituents of VPs or clauses their adjunct status is not at issue here.

18. G in fact posits such an ASC.

19. For instance in the British National Corpus of 100 million words, out of 134 hits for *sneeze* only two can remotely be considered candidates for a caused-motion use and neither is a convincing candidate.

(i) Right in the center is one person with a streaming cold who is sneezing his head off.

(ii) . . ., until a pollen-laden grass flower tickled his nose and he sneezed himself back to life.

Example (ii), containing a so-called fake reflexive, is clearly a better candidates for the resultative coinage pattern than the caused-motion pattern. This is probably also the case with example (i), which moreover illustrates a familiar collocation. I am indebted to Charles Fillmore for the BNC data on *sneeze*. Nonetheless, I am informed by Adele Goldberg (pc) that '*He sneezed his tooth right across town* [appears] in a kids' book by Robert Munsch.'

20. In addition to ordinary path PPs, it seems that an expression of any syntactic category expressing a path will serve. For example: *She* {*sailed/steered*} *the boat* {*away/around, here/there, farther* (*than*)*, hither, home, where she had always hoped to, seaward, from the island back to the dock*}.

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Part II

Syntax and semantics of verbs

Chapter 4

The role of verb meaning in locative alternations

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1. Introduction*

Among the topics that have been extensively discussed in the lexical semantics literature over the past decade or so are *argument structure alternations*. In the generative lexical semantics literature of the late 1980s, it was customary to attribute these alternations to lexical rules: new senses are derived from the basic sense via lexical rules, resulting in multiple syntactic frames in which the verb is found (Rappaport & Levin 1988; Pinker 1989; among others).

Goldberg (1995), however, has proposed a Construction Grammar approach to argument structure, according to which constructions, rather than individual verbs, play a central role in alternation phenomena, and therefore "it is not necessary to posit an additional verb sense for each new syntactic configuration in which the verb appears" (Goldberg 1995:9).

To get an idea of how alternation phenomena are treated in this approach, let us take up the locative alternation as exemplified in (1), where verbs like *load* exhibit both an *into/onto* form and a *with* form.[1]

(1) a. John loaded bricks onto the wagon. (*into/onto* form)
b. John loaded the wagon with bricks. (*with* form)

In Goldberg's theory the verb meaning is fused with the constructional meaning, yielding the syntax and semantics of the resulting expression. Accordingly, the locative alternation is claimed to arise when the verb meaning is "able to fuse with two distinct constructions" (Goldberg 1995:179). Thus the locative alternation is schematically described as in (2).

(2) load <loader, container, loaded-theme>

load bricks onto the wagon load the wagon with bricks

While Goldberg's account is attractive in many ways, it is not clear what it means for the same verb meaning to be able to fuse with more than one construction. Goldberg represents the verb meaning simply as a list of participant roles (i.e. loader, container, loaded-theme), but this list alone does not tell us why *load*, but not *pour* or *fill*, can fuse with two distinct constructions. Without clarifying this point, then, it is not clear to what extent Goldberg's theory can really account for alternation phenomena. In what follows, I will address this issue by examining several alternation phenomena using my own version of Construction Grammar.

2. Analysis of locative alternation

2.1 Linking mechanisms

I will begin by laying out the form-meaning correspondence model assumed in this chapter, which is characterized by two features. First, it draws on Pinker's (1989) linking mechanisms (though it crucially differs from Pinker's theory, as will be shown later). Rather than directly relating individual verbs to syntactic frames, Pinker argues that form-meaning correspondence is mediated by thematic cores, where a thematic core is "a schematization of a type of event or relationship that constitutes the core of the meaning of a class of possible verbs" (Pinker 1989: 73). In other words, syntactic frames are associated with identifiable semantics: syntactic frames like [NP V NP], [NP V NP NP] etc. are related to thematic cores like "X affects Y", "X causes Y to have Z", etc. A verb appears in a particular syntactic frame if its meaning is compatible with a thematic core associated with that syntactic frame.

From the syntactic side, only five syntactic frames are available in English as shown in Figure 1.[2] Since the types of events or relationships expressible in English clearly number more than five, the correspondence between syntactic frames and thematic cores is necessarily one-to-many. Here follows a brief sketch of the possible correspondence patterns.[3]

Syntactic frame Type 1, [NP V], is an Intransitive frame. This frame may be associated with either the thematic core "X is in a location or state or goes

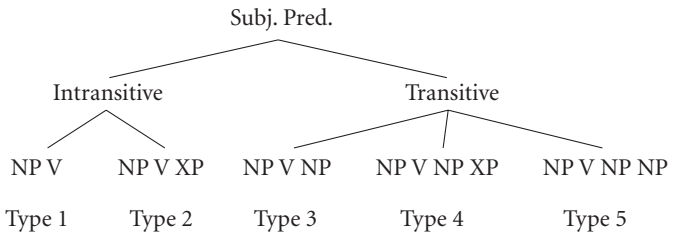

Figure 1. The system of syntactic frames

to a location or state" (so-called unaccusative) as in (3a) or "X acts" (so-called unergative) as in (3b).

(3) a. The butter melted.
b. John danced.

Type 2, [NP V XP] (where XP ranges over AP, NP, and PP), is Intransitive with Oblique or Intransitive with Comp. This frame may correspond to the thematic core "X goes Y" as in (4a). Or it may be associated with "X changes into Y" as in (4b).

(4) a. Amy went from Denver to Indianapolis.
b. Elise turned into a mother.

Type 3, [NP V NP], is a Transitive frame. This frame may correspond to a number of thematic cores, chief among them are "X affects Y" as in (5a), "X acts on Y and causes a change of state in Y" as in (5b), "X causes an experience in Y" as in (5c) and "X experiences Y" as in (5d).

(5) a. John kicked the fence.
b. John broke the vase.
c. The news amazed Mary.
d. John loves Mary.

Type 4, [NP V NP XP], may be associated with either "X causes Y to go Z" (caused-motion) as in (6a), "X causes Y to become Z" (causative change-of-state) as in (6b), or "X affects Y by adding Z" as in (6c).

(6) a. Tom put a book on the table.
b. The news made Mary speechless.
c. He filled the bottle with water.

Finally, Type 5, [NP V NP NP], is well-known for its associated semantics "X causes Y to receive Z" under the name of Ditransitive or double object construction.

(7) John gave Mary an apple.

2.2 L-meaning/P-meaning distinction

A second feature characterizing my form-meaning correspondence model is that it makes a distinction between two levels of verb meaning: the Lexical Head Level meaning, or L-meaning, and the Phrasal Level Meaning, or P-meaning (cf. Iwata 1998). The L-meaning is that of a lexical head *per se*, independent of any syntactic frame, whereas the P-meaning is that associated with a particular syntactic frame, due to its compatibility with a thematic core associated with that syntactic frame. I will illustrate this distinction shortly, but in short, it is intended to convey the difference in meaning between the likes of *load* and *load bricks onto the truck*.

A third feature of my model pertains to the nature of L-meanings. In order to characterize the L-meaning, reference is to be made to the entirety of the frame-semantic knowledge associated with the verb (Fillmore 1982).

2.3 *Load*

It is now time to see how locative alternation is to be dealt with in this model. The *into/onto* form and the *with* form, two subtypes of Type 4 just outlined, are associated with the semantics "X causes Y to go Z" and "X affects Y by adding Z", respectively, as in Figure 2.

A reasonable way to account for the possibility of alternation is, then, to suppose that while non-alternating verbs like *pour* or *fill* encode either a change of location or a change of state, verbs like *load* encode both.[4] The occurrence of the two variants of *load* can thus be described as in Figure 3.

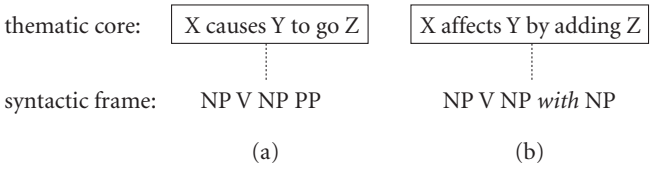

Figure 2. Two form-meaning pairings

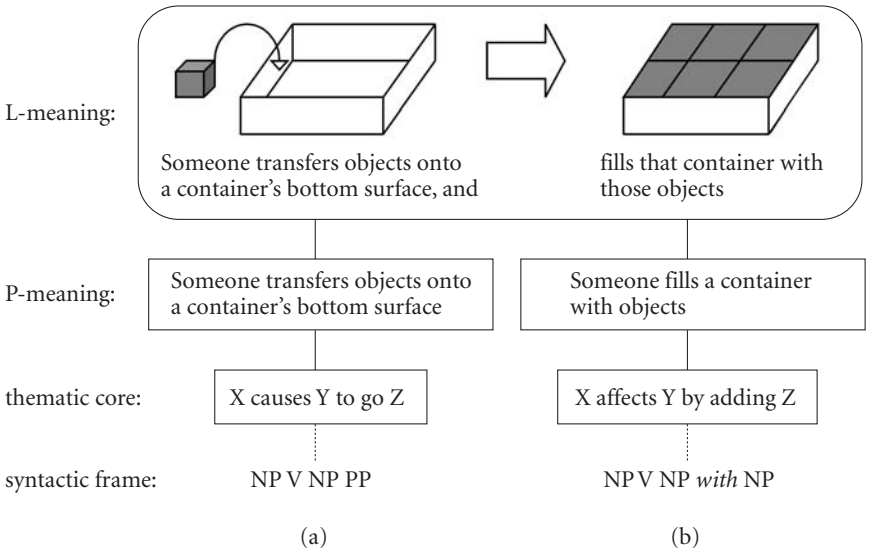

Figure 3. The alternation of *load*

As noted above, the L-meaning is that of a lexical head *per se*, whereas the P-meaning is that associated with a particular syntactic frame. That is, the meaning of *load* (=L-meaning) is distinguished from that of *load bricks onto the truck* or *load the truck with bricks* (=P-meaning). The L-meaning of *load* is all that is enclosed at the top in Figure 3, i.e. a scene consisting of transferring objects onto a container's bottom surface AND filling that container. By contrast, P-meanings obtain when that part of the L-meaning compatible with a thematic core is profiled, with the rest of the L-meaning backgrounded:[5] if the transferring activity is profiled, *load* appears in the frame [V NP *onto* NP]; on the other hand, when the completing activity is profiled, *load* ends up in the frame [V NP *with* NP]. The locative alternation arises when the scene encoded in the L-meaning is general enough to accommodate more than one eventuality (=P-meaning).

On my account, therefore, locative alternation verbs like *load* are no different from non-alternating verbs like *fill* or *pour* in their basic form-meaning correspondences. Whether or not a given verb enters into an alternation boils down to the issue of whether the L-meaning can be deemed compatible with more than one thematic core.

3. Comparison with Goldberg (1995)

3.1 Fundamental similarities

Let us now consider what my account of locative alternation has to say concerning Goldberg's Construction Grammar approach. Goldberg argues that constructions are form-meaning pairings that exist independently of particular verbs, carry meaning, and specify the syntactic structure of certain linguistic expressions. In each construction the verb meaning is integrated with the constructional meaning. Thus the *onto* form of *load* is obtained as in Figure 4.

CAUSE-MOVE <cause, goal, theme> is the semantics associated directly with the construction, while LOAD <loader, container, loaded-theme> is that of the verb. The semantic roles associated with the construction (=argument roles) are fused with those associated with the verb (=participant roles). Thus the three participant roles of *load* are put in a correspondence with the argument roles, resulting in the composite fused structure.

Although Figure 4 might seem different from my model, it conveys essentially the same idea, and it is possible to translate one representation into the other. Figure 5 gives us an idea of the correspondences between the elements in the two models. The constructional meaning corresponds to the thematic core, the verb meaning to the L-meaning, the syntactic level of grammatical

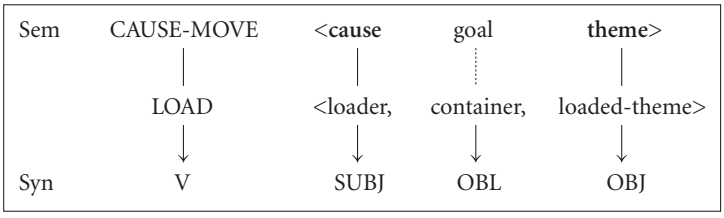

Figure 4. Goldberg's (1995) representation

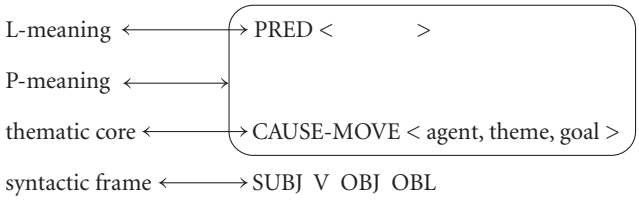

Figure 5. Correspondences between the two models

functions to the syntactic frame, and the fused composite structure to the P-meaning. Thus the pairing of a thematic core and a syntactic frame counts as a "construction" in my framework.[6]

Although there are still differences between the two theories (cf. Iwata 1998), clearly they share the basic idea that the verb meaning interacts with the form-meaning pairing mechanisms (i.e. constructions) to yield particular versions or senses, and that therefore no lexical rules are necessary to relate these multiple variants. In this sense, my account can be safely regarded as a version of Construction Grammar approach to be contrasted with lexical rule approaches.

3.2 Verb meanings as scene-based

Given that my theory can be identified as a version of Construction Grammar approach, then, it follows that what my analysis of locative alternation has revealed should carry over to Goldberg's theory. According to my account, the L-meaning of *load* encodes a scene comprising both a change of location and a change of state, and is therefore open to alternate construals.

Thus, identifying the verb meaning as a scene susceptible to two different construals allows us to make perfect sense of Goldberg's claim that the verb meaning of *load* is "able to fuse with two distinct constructions": The encoded scene itself remains the same between the two variants (*load bricks onto the truck* and *load the truck with bricks*), and it is precisely the potential of this scene to receive two different interpretations that allows *load* to fuse with two different constructions.

At this point, one might wonder whether assimilating the two theories with each other in this way is really feasible. Goldberg represents the verb meaning simply as a list of participant roles, which may create the impression that the fusion of constructional meaning and verb meaning is based on semantic roles. In contrast, my account is clearly based on scenes or event types.

But assimilation IS feasible. In fact, despite appearances Goldberg's theory is scene-based, and the list of participant roles is an abbreviatory way of capturing the rich frame semantics of the associated scene. Goldberg explicitly states the necessity to refer to rich frame semantic knowledge in order to characterize verb meanings (Goldberg 1995: 27), and she argues that roles are semantically constrained "relational slots in the dynamic scene" (Goldberg 1995: 49).

That the list of participant roles is to be taken as a shorthand way of capturing the "scenes" of my account is further appreciated by noting that my representation can be further assimilated into Goldberg's representation when

cognitively salient entities in a scene are specifically picked out. Let me first point out that the pairings between thematic cores and syntactic frames described in Figure 2 can be reformulated as in Figure 6, where the subscripts in the syntactic frames ensure correspondences between the semantic roles and syntactic positions.

Now Figure 3 can be reformulated as in Figure 7. When the transferring-activity part of the L-meaning of *load* is integrated with the thematic core "X causes Y to go Z", naturally the three salient entities in the loading scene (= α, β, and γ) are fused with the three salient entities in the thematic core (=X, Y, and Z). Accordingly, the resulting P-meaning contains three cognitively salient entities, which are fusions of those salient entities ((X/α), (Y/β), and (Z/γ)).

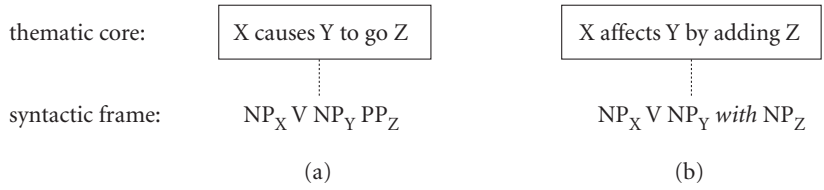

Figure 6. More explicit versions of the two pairings

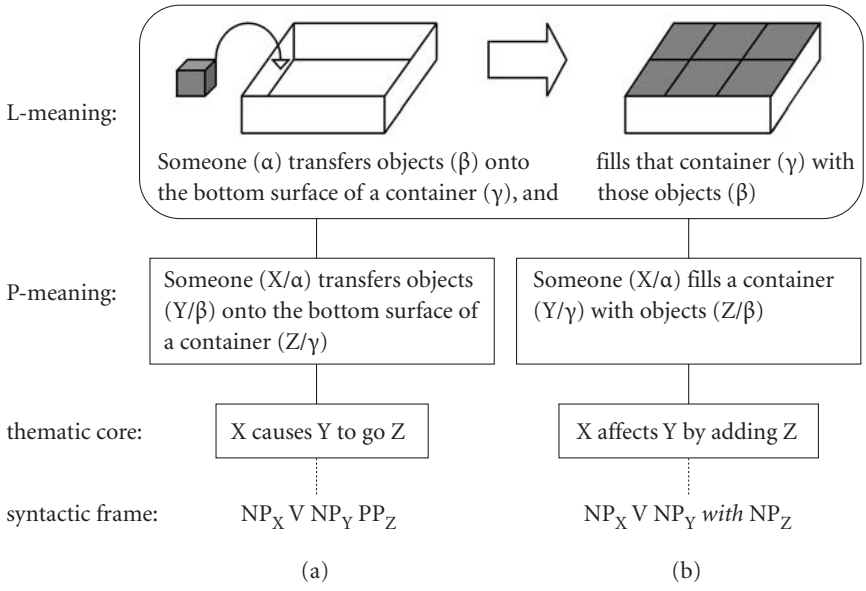

Figure 7. 'Fusion' in this account

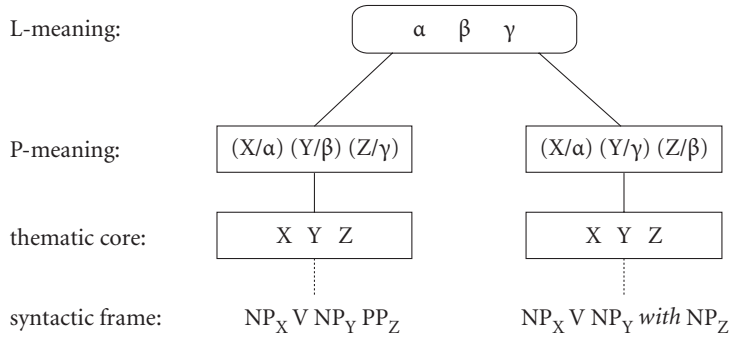

Figure 8. A role-based rendition of the alternation

The same is true of the integration of the filling-component with "X affects Y by adding Z", which leads to the P-meaning with the three fused entities ((X/α), (Y/γ), and (Z/β)). If we choose to have these salient entities alone stand for the scenes, then Figure 7 is rewritten as Figure 8.

Now the parallelism between my account and Goldberg's is beyond doubt. This is hardly surprising, for Goldberg's participant roles and argument roles are nothing more than "relational slots in the dynamic scene", as noted above.

To summarize the discussion so far, the locative alternation of *load* is attributed to the loading scene being open to an interpretation either as a change of location or as a change of state. To regard the fusion of verb meaning and constructional meaning as being determined by compatibility between scenes or event types in this manner, which is consistent with Goldberg's theory, allows us to give substance to her claim that the verb meaning, while remaining constant, can fuse with two distinct constructions.

4. Alternations that cannot be attributed to a single scene

While the alternation of *load* can be attributed to a single scene, this does not mean that all the alternation phenomena can be explained in this manner. As a matter of fact, a number of cases of alternation should be analyzed differently.

4.1 *Pack*

The verb *pack* is known to participate in locative alternation as normally understood as in (8) (Pinker 1989; Levin 1993).

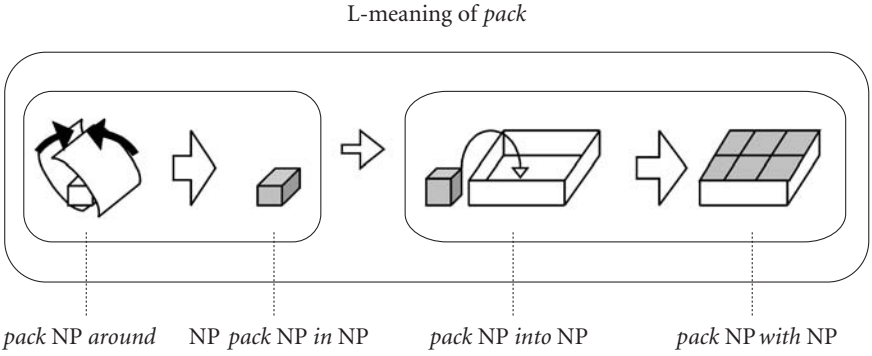

Figure 9. The alternations of *pack*

(8) a. John packed books into the box.
b. John packed the box with books.

What has been little recognized in the literature, however, is the fact that *pack* also occurs in the following two syntactic frames.

(9) a. He packed the newspaper around china.
b. He packed the china in newspaper.

The four variants cannot possibly be attributed to a single scene. Rather, two different, though related scenes are responsible for the alternations of *pack*.

The L-meaning of *pack* contains a scene ($pack_2$) that consists of putting something into a container and filling that container. But since the act of packing is often idiomatically understood relative to the scenario of sending things like luggage, the L-meaning contains another preceding scene as well ($pack_1$). That is, one quite often puts paper around an object and covers it, typically so as to protect that object. The entirety of this complex scene gives rise to the four variants as in Figure 9.[7]

Thus the L-meaning of *pack* can be characterized as scenario-based.

4.2 *Trim*

Nemoto (1996), following Hook (1983), observes that the verb *trim* behaves both as a verb of putting and as one of removal. In the former case *trim* appears in the *with* form alone as in (10), while in the latter it occurs either in the *from* form or in the *of* form as in (11).

(10) a. *Jane trimmed lights over the tree.
b. Jane trimmed the tree with lights.

(11) a. John trimmed overgrown branches from the tree.
b. John trimmed the tree of overgrown branches. (Nemoto 1996: 167)

Here again, it seems practically impossible to attribute the three variants to a single scene. Instead, one has to admit that *trim* is polysemous between two meanings: one is to cut away untidy parts, and the other is to add an object to a location. The former meaning gives rise to the *from* form and the *of* form, while the latter meaning the *with* form. That the alternations of *trim* are to be approached in terms of verbal polysemy, unlike other verbs such as *wipe*, is confirmed by the following contrast with regard to coordination.

(12) a. John wiped the fingerprints FROM the table and polish INTO the table.
b. ??They trimmed Laura's tree WITH lights and Mary's tree OF overgrown branches. (Nemoto 1996: 170)

The two meanings of *trim* evoke different scenes, which cannot be collapsed into a single scene.

It should be noted at this point, though, that the two meanings are related: one makes something neat and smooth by cutting away its untidy parts, the other causes an esthetic or qualitative change by adding an object to a location, as in decorating or adorning something. That is, the two meanings lead to a very similar effect, and can, therefore, be regarded as instantiations of a higher-order schema "to cause something to become neat and tidy". Consequently, the L-meaning of *trim* includes a network in which the two meanings are related via this higher-order schema as in Figure 10.

4.3 *Roll*

As far as I know, no scholar has discussed the verb *roll* in the context of locative alternations. But *roll* occurs in the following two forms, apparently very similarly to *load*.

(13) a. Mary rolled the doll into a blanket.[8]
b. Mary rolled a blanket around the doll.

Again, one cannot attribute these two variants to a single scene. Both variants denote a change of location, as evidenced by the directional PP after the postverbal NP, so that the two eventualities cannot be organized into a scene

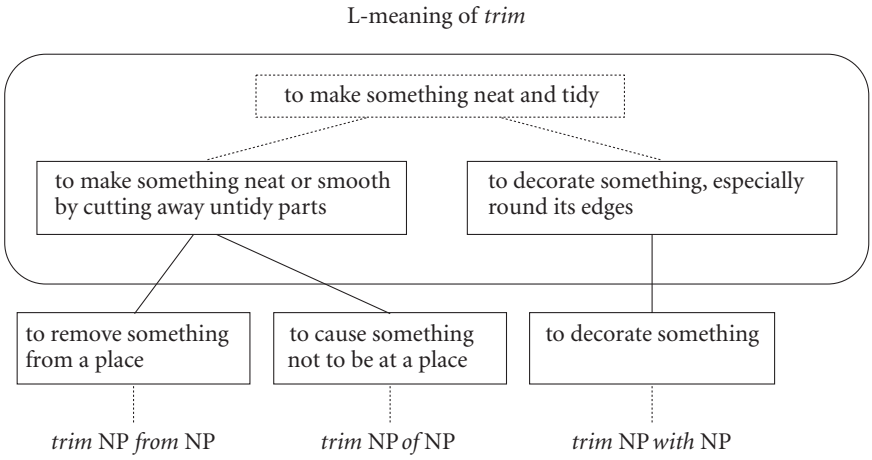

Figure 10. The alternations of *trim*

Figure 11. *Roll*-schema A

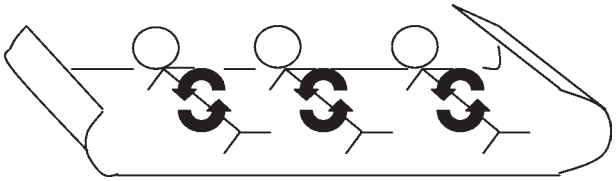

Figure 12. Instantiation of *roll*-schema A

consisting of a change of location followed by a change of state as in the case of *load*. Rather, this alternation arises from image-schematic properties of *roll*.

Roll may appear intransitively or transitively with a directional PP as in (14) and convey that a round object moves along a path by turning over and over as in Figure 11.

(14) a. The ball rolled down the hill.
b. I rolled the ball down the hill.

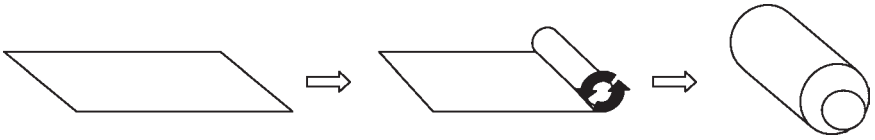

Figure 13. *Roll*-schema B

Figure 14. Instantiation of *roll*-schema B

Let us refer to this schema as *roll*-schema A. Now the *roll* in (15) can be analyzed as instantiating *roll*-schema A (or its variant), with the doll being construed as a round object in motion, as in Figure 12.

(15) roll the doll into a blanket

Next, *roll* may describe a change of shape as in (16).

(16) Harry rolled the newspaper and put a rubber band around it.

The relevant image-schema here, *roll*-schema B, is related to *roll*-schema A via a nonreflexive ↔ reflexive path image-schema transformation (Lakoff 1987:443). That is, while *roll*-schema A depicts a round turning object that is distinct from its path (as shown in Figure 11), *roll*-schema B depicts a flat object that turns over part of itself (as in Figure 13). Thus the newspaper of (16) is at the same time a trajector and a landmark (Lindner 1981, 1982).

Now *roll*-schema B is applicable to the *roll* in (17), where the blanket is construed as undergoing the motion in question as in Figure 14.

(17) roll a blanket around the doll

Thus the alternation of *roll* arises precisely because the two related, but different, image-schemas can be integrated into two scenes, which happen to be identical. Like the alternation of *load*, it can be said to involve alternate construals of the same scene. But it is the two related image-schemas, rather than the scene itself, which are primarily responsible for the alternate construals. Accordingly, the two related image-schemas ought to be part of the encoded L-meaning of *roll* (cf. Iwata 2002).

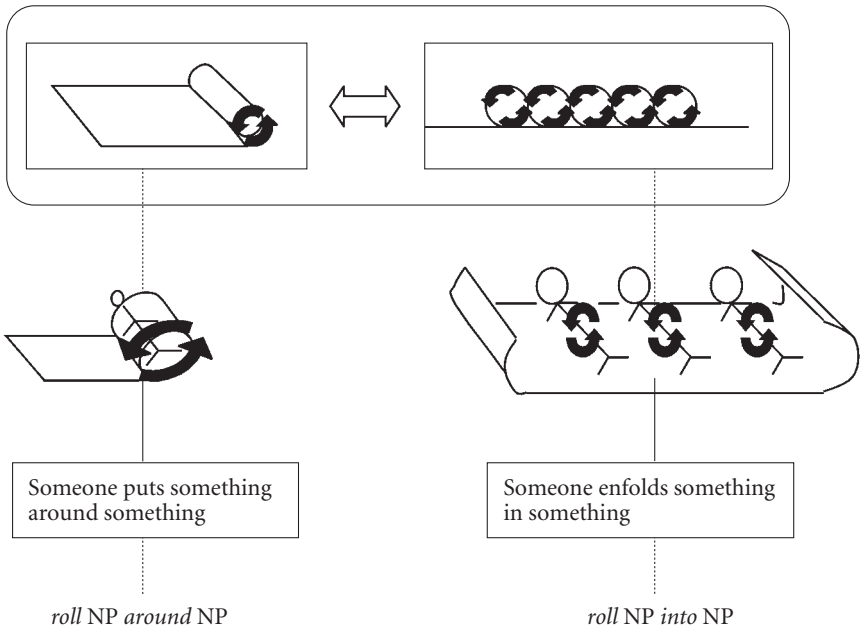

Figure 15. The alternation of *roll*

4.4 Summary

Our investigation into the alternations of the three verbs *pack*, *trim,* and *roll* has revealed that locative alternations can arise from varied verb meanings, not necessarily from a single scene as with *load*, as in Figure 16. The L-meaning of a verb may contain two scenes, which are related via a scenario as with *pack* or via a higher-order schema as with *trim*; or two related image-schemas as with *roll*. Each of the scenes in turn may give rise to more than one variant, the way a single scene of *load* leads to the two forms.

All this indicates that detailed studies of verb meaning are indispensable for an account of alternation phenomena.

5. The significance of verb meaning

Let us consider what implications can be drawn from the discussion so far about the division of labor between verbs and constructions. Goldberg, stressing the necessity of constructions to account for argument structure alterna-

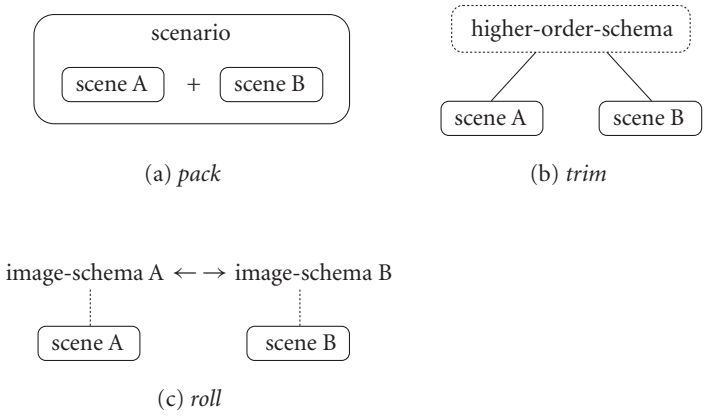

Figure 16. Summary of the three verbs

tions, argues that "on a constructional approach to argument structure, systematic differences in meaning between the verb in different constructions are attributed directly to the particular constructions" (Goldberg 1995: 4).

This statement, taken in isolation, could be construed as indicating that constructions are all we have to care about, and that verb meanings need to be only minimally specified. Many theoretical apparatuses have been proposed in the literature on polysemy and lexical networks (Lindner 1981, 1982; Lakoff 1987; Norvig & Lakoff 1987; among others). But the above passage, if taken to its extreme, might even seem to suggest that these theoretical tools are not necessary to account for argument structure alternations of verbs, for "systematic differences in meaning between the same verb" are claimed to follow from constructions.

Goldberg's practice of representing the verb meaning simply as a list of participant roles strengthens this impression. As a matter of fact, some scholars construe "constructions" exactly this way (Rappaport Hovav & Levin 1998: 128).

But my analysis of the alternation of *load* has revealed that the relation between verb meaning and constructional meaning should be conceived entirely differently. The list of participant roles, i.e. <loader, container, loaded-theme>, is actually to be regarded as shorthand for a scene that can be construed either as a change of location (i.e. transferring objects onto a container) or as a change of state (i.e. filling that container).

Also, my analysis has revealed that some verbs do have multiple meanings, which are interrelated through various links, like a scenario, an image-

schema transformation, or a higher-order schema. Thus some verb meanings are rightly characterized in terms of lexical networks, far richer in content than the mere list of semantic roles. And it is precisely these network structures that are responsible for the alternations seen in Section 4. The form-meaning pairings independent of the verb, i.e. the correlations between thematic cores (=constructional meaning) and syntactic frames, simply serve as schemas for form-meaning correspondence and they alone do not account for the range of alternations observed. Constructions are not such all-powerful theoretical tools as might appear at first blush. What distinguishes *load* from non-alternating verbs like *fill* or *pour* on the one hand, and from verbs like *pack* or *trim* on the other, is the verb meaning (=L-meaning) of *load*, and nothing else.

6. Conclusion

In this chapter I have analyzed several types of locative alternation by using a form-meaning correspondence model, which is crucially based on the L-meaning/P-meaning distinction. Since the resulting theory is fundamentally the same as Goldberg's (1995) Construction Grammar approach, some implications concerning that approach can be drawn from the findings in the present chapter. First, the list of participant roles which Goldberg employs is nothing more than shorthand for a scene rich with world knowledge. Accordingly, the fusion of verb meaning and constructional meaning should be regarded as scene-based. Seen in this light, Goldberg is certainly right in claiming that the verb meaning expressed as <loader, container, loaded-theme> can fuse with two distinct constructions.

Even under this interpretation, however, the list of participant roles alone is not capable of handling all the alternation phenomena. And this leads to the second point: even if one subscribes to the tenets of Construction Grammar approach, one should admit to varied verb meanings, often characterizable in terms of lexical networks, in order to account for certain alternations.

There should be nothing surprising about this conclusion. Verb meanings may well be the locus of information finally responsible for alternations, for idiosyncratic information is ultimately to be sought in individual verbs.[9]

Notes

* I'd like to thank the following people for their comments and discussions: Keith Sanders, Collin Baker, Knud Lambrecht, Paul Kay, Charles Fillmore, Nathaniel Smith, Shweta Narayan, Michael Ellsworth, and Natsuko Tsujimura. Special thanks go to Tony Higgins, who, besides acting as informant, suggested stylistic improvements. None of these people are to be held responsible for the content of this chapter, of course.

1. In this chapter I will use the term "locative alternation" to mean that a verb with a locative meaning alternates between two (or more) syntactic frames. The locative alternation in this sense is not limited to that of *spray/load* verbs.

2. This is similar to the type hierarchy in the HPSG literature.

3. This list is neither exhaustive nor conclusive, of course.

4. Note that if one assumes that *load* encodes only one of them with the other being derived from it, as in lexical rule approaches (Pinker 1989), one cannot distinguish alternating verbs like *load* from non-alternating verbs like *fill* or *pour*.

5. "Profiling" is used in the sense of Langacker (1987).

6. Actually, however, these correspondences are not always perfect. But I will not go into this issue here.

7. From now on, the figures will be somewhat abbreviated, but the point is the same.

8. At first I tried to use *roll* in (i-a) as an instance of the 'enfold' sense, but all of my informants reacted negatively to it, some preferring (i-b) instead.

(i) a. ??Mary rolled the baby in a blanket.
b. ?Mary rolled the baby into a blanket.

This seems to be because both (i-a) and (i-b) treat the baby as a mere physical object, suggesting a nuance of neglect or abuse. In the absence of such an ethically unfavorable connotation, however, *roll* seems to be fine in the [V NP *in* NP] frame. Thus the examples in (ii) are acceptable, along with *roll the doll into a blanket*.

(ii) a. roll the sausage in batter
b. roll the sausage in a pancake
c. roll the meatball in bread crumbs
d. He rolled himself in his blanket.

9. See also Boas (2000), who argues that verbs, rather than constructions, are to play a central role in an account of resultatives.

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Chapter 5

Verbal polysemy and Frame Semantics in Construction Grammar

Some observations on the locative alternation

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1. Introduction*

In the study of the so-called locative alternation, it has been observed that verbs relating to putting some substance on a location and verbs relating to removing some substance from a location can express their arguments in two different ways, as illustrated in (1) and (2) (e.g., Jackendoff 1990: Ch. 8; Levin 1993: 49–55; Pinker 1989: 77–82, 124–130; Rappaport & Levin 1988).[1]

(1) a. Harry loaded hay onto the truck. (=*onto*-form)
b. Harry loaded the truck with hay. (=*with*-form)

(2) a. Harry emptied water from the tub. (=*from*-form)
b. Harry emptied the tub of water. (= *of* -form)

What we call the *onto*- and *from*-forms can occur with a wide variety of prepositions (Jackendoff 1990: 173). The former includes *into*, *on*, and *over* and the latter includes *off* and *out of*. With respect to the syntactic frames found in the two types of the locative alternation, the denominal verb *brush* allows the options shown in (3).

(3) a. John brushed the crumbs off the table.
b. John brushed the crumbs onto the floor.
c. John brushed melted butter over the loaves.
d. John brushed the loaves with melted butter.

In (3), *brush* appears in the *from*-, *onto*-, and *with*-forms. The aim of this chapter is to account for the usage differences in (3) and examine the following question: Under what circumstances may a verb occur with the syntactic configurations associated with putting and those associated with removal? This chapter is concerned with the question of how much of the idiosyncratic properties of an individual verb can be thought of as associated with the meaning of that verb and how much can be thought of as explainable in terms of other facts. To achieve this goal, this chapter adopts some basic ideas of Construction Grammar (Fillmore & Kay 1993; Goldberg 1995; Kay & Fillmore 1999), which aims to account for the entirety of a language, from the most idiomatic to the most general. With Frame Semantics (Fillmore 1982) as a descriptive tool, Construction Grammar will be shown to provide a principled explanation of the distribution of verbs in the locative alternation.

In Section 2, we review some previous analyses relating to the locative alternation and *brush* sentences like those in (3). In Section 3, we introduce some of the basic mechanisms of Construction Grammar as a background for the analysis that follows by way of a critical survey of Goldberg's (1995, 2002) approach. Section 4 presents a constructional analysis aimed at providing a proper description of the variation in meaning and syntactic behavior associated with *brush*. The results of this section lead us to answer the question of why the same verb can be used in both syntactic frames expressing removal and putting. Section 5 goes into details about this issue. In Section 6, we make concluding remarks.

2. Previous studies

2.1 The locative alternation

The relation between the two argument structures found in each type of the locative alternation has received considerable attention. It has been shown that some change in meaning accompanies the alternation. For example, (1b) suggests that the truck is full of hay, but (1a) need not suggest this, displaying what has become known as the holistic/partitive effect (Anderson 1971; Rappaport & Levin 1988: 19). This difference manifests itself clearly in the following contrasts (see also Levin & Rappaport Hovav 1991: 146):

(4) a. Felix loaded some books onto the truck. (Jackendoff 1990: 172)
b. ?*Felix loaded the truck with some books. (1990: 173)

(5) a. Bill cleared some dishes from the table. (1990: 174)
b. *Bill cleared the table of some dishes. (ibid.)

This property is explained in terms of the distinction between change of state and change of location (Fraser 1971).[2] Given that people can view an event from different perspectives, the loading event described in (1) can be construed either as causing hay to go onto the truck or as causing the truck to become full of hay (Fillmore 1971: 386; Iwata 1998: Ch. 2; Pinker 1989: 79). Since the argument that denotes an affected entity is realized as the direct object (Gropen et al. 1991: 159), the *onto*-form highlights a change of location that a substance undergoes and the *with*-form highlights a change of state that a place undergoes. Thus, in (4b), putting some books onto the truck is incompatible with the *with*-form, which indicates a change of state on the part of the truck, because the relevant space in the truck is unlikely to be completely occupied by some books. The same holds for the alternation relating to removal as in (5).

Some distributional facts are explained along these lines. Furthermore, it has been shown that not all semantically related verbs allow both options in each type of the locative alternation, as the following examples illustrate (Gropen et al. 1991; Levin 1993: 49–55; Pinker 1989: Chs. 3–4).

(6) a. I put books on the table. (Levin 1993: 111)
b. *I put the table with the books. (ibid.)

(7) a. *Jane covered the blanket over the baby. (Levin 1993: 51)
b. Jane covered the baby with a blanket. (ibid.)

(8) a. Doug removed the smudges from the tabletop. (Levin 1993: 122)
b. *Doug removed the tabletop of smudges. (ibid.)

(9) a. *The doctor cured pneumonia from Pat. (Levin 1993: 129)
b. The doctor cured Pat of pneumonia. (ibid.)

The *onto*- and *from*-forms can be found with verbs that encode a type of motion and the *with*- and *of*-forms can be found with verbs that encode a resultant state. Thus, *put* and *remove*, which encode motion can appear in the *onto*- or *from*-form but not the *with*- or *of*-form. On the contrary, since *cover* and *cure* denote a resultant state, they can appear in the *with*- or *of*-form but not the *onto*- or *from*-form. These distributional properties can be summarized in Table 1.

Table 1. The behavior of some representative verbs with respect to the locative alternation

	***with*-form**	***onto*-form**	***from*-form**	***of*-form**
cover, *decorate*	X	–	–	–
load, *smear*	X	X	–	–
place, *put*	–	X	–	–
remove, *steal*	–	–	X	–
clear, *empty*	–	–	X	X
cure, *rob*	–	–	–	X

Note. 'X' indicates that the verb (given in a row heading) can appear in the syntactic frame (given as a column heading); '–' indicates that the verb cannot appear in the syntactic frame.

2.2 Uses of *brush*

Levin & Rapoport (1988:279) address the uses of *brush* presented in (3). Examples that are relevant to our discussion are cited below.[3]

(10) a. brush the lint off the coat (Levin & Rapoport 1988:279)
b. brush the crumbs into the bowl (ibid.)
c. brush melted butter over the loaves (ibid.)

Levin & Rapoport characterize (10a) as involving the removal sense and (10b, c) as involving the putting sense. Their claim is that *brush* lexically encodes the sense of contact, which is shared by all three expressions in (10). In addition, the verb acquires additional meanings in a regular manner from its basic sense. According to the authors, (10a) encodes removing the lint from the coat by brushing; and (10b, c) encode putting crumbs into the bowl by brushing and putting butter over the loaves by brushing, respectively.

There are two problems with Levin & Rapoport's analysis of the uses of *brush* in (10). First, their analysis incorrectly characterizes the two *onto*-forms, (10b) and (10c), as encoding the same sense. Their analysis does not recognize that there is a clear difference between the two *onto*-forms. That is, in (10b), contact is not made between a brush and the bowl; but in (10c), a brush comes into contact with the surface of the loaves. That is, the *onto*-phrase in (10b) refers to an endpoint of a path that the substance traverses; but the *onto*-phrase in (10c) refers to a surface that a brush is moved against. Since their analysis does not take this meaning difference into consideration, it is likely to fail to account for the difference in syntactic behavior between the two uses. As the following examples show, (10c) but not (10b) can enter into the locative alternation associated with verbs like *load* and *spray*.

(11) a. John brushed the crumbs into the bowl. (cf. (10b))
b. *John brushed the bowl with the crumbs.

(12) a. John brushed melted butter over the loaves. (cf. (10c))
b. John brushed the loaves with melted butter.

The second problem with Levin & Rapoport's analysis of (10) is that (10a) is characterized as encoding a removal event and differentiated from both (10b) and (10c), which are characterized as encoding putting events. However, this view is inconsistent with the following examples, in which the accented words are represented with capital letters.

(13) Bill brushed the lint FROM the table and the crumbs INTO the bowl.

(14) *Bill brushed the lint FROM these loaves and melted butter OVER those loaves.

The sentences demonstrate that an *onto*-form like (10b) but not one like (10c) can coordinate with a *from*-form. These observations suggest that we need to remove a possible impression that the *onto*-and *from*-forms are used to describe antagonistic events.[4] We return to this issue in Section 5.

3. Goldberg's (1995, 2002) constructional approach

3.1 Goldberg's Construction Grammar framework

Goldberg (1995) introduces a constructional approach to argument structure and argues that some argument structures can be regarded as independently existing grammatical constructions. In Goldberg's analysis, a verb can occur in a constructional pattern when the event type encoded by the verb is compatible with the one encoded by the construction in certain ways. She proposes to describe verb meaning with reference to rich frame-semantic knowledge. For example, Goldberg (1995: 54, 2002: 345) claims that the participant roles of the verb *kick* are a kicker and a kicked and that since kicking can be the means of transfer the verb can appear in the ditransitive construction, as in (15b), where the ditransitive construction contributes the recipient argument.

(15) a. John kicked the ball.
b. John kicked Bill the ball.

While Goldberg generally does not appeal to verbal polysemy, she recognizes that some alternations of arguments are not attributable to the constructions

involved. For example, Goldberg (1995: 56) cites (16) as an instance of verbal polysemy and states that "what we have here is an instance of polysemy, not homonymy, because of the fact that the two senses share the same background semantic frame" (1995: 56).

(16) a. Cecile leased the apartment from Ernest.
b. Ernest leased the apartment to Cecile.

Concerning the locative alternation, Goldberg (1995: 175–179, 2002: 337–347) characterizes what we call the *onto*- and *with*-forms as an instance of the caused-motion construction, illustrated in (17), and an instance of the causative-plus-*with*-adjunct constructions, illustrated in (18), respectively.

(17) a. Pat loaded the hay onto the truck. (Goldberg 2002: 337)
b. Pat put the hay on the wagon. (ibid.)
c. Pat shoveled the hay into the wagon. (ibid.)

(18) a. Pat loaded the wagon with hay. (Goldberg 1995: 340)
b. Pat broke the window with a hammer. (ibid.)

According to Goldberg, the caused-motion construction involves the argument roles cause, theme, and path/location. The causative-plus-*with*-adjunct constructions involve the argument roles of cause, patient, and instrument.

3.2 Problems with Goldberg's approach

Let us consider how Goldberg's (1995, 2002) approach would deal with the *brush* sentences in question. Her theory generally tries to avoid verbal polysemy and attributes different meanings of full expressions to the constructions involved. The two constructions introduced above are available. That is, examples (3a)–(3c), here repeated as (19a)–(19c), can be analyzed as instances of the caused-motion construction, and (3d), here repeated as (19d), can be regarded as an instance of the causative-plus-*with*-adjunct constructions.

(19) a. John brushed the crumbs off the table.
b. John brushed the crumbs onto the floor.
c. John brushed melted butter over the loaves.
d. John brushed the loaves with melted butter.

Concerning (19a)–(19c), Goldberg's analysis has problems describing the properties that need to be accounted for. That is, given that *kick* is characterized as involving a kicker and a kicked, *brush* would be analyzed as having two roles, a person who is engaged in a brushing act and a surface.[5] The theory

would therefore claim that the theme role is contributed by the caused-motion construction.

This type of analysis suffers from the same problems as Levin & Rapoport's (1988) account, discussed in Section 2.2. As with the lexical semantic analysis they propose, this constructional analysis cannot account for the difference between (19b) and (19c) on the one hand and the similarity between (19a) and (19b) on the other hand. My alternative analysis in Section 4 shows that these problems can be solved if we pay more attention to a detailed frame-based description of the different types of verb meaning associated with *brush* and related verbs.

Although Goldberg (1995: 56) considers verbal polysemy, she seems to confine polysemy to senses that share a single semantic frame. However, verbs can be associated with more than one frame. To illustrate this point, let us review Nemoto's (1996, 2001) observation of the polysemy of the verb *trim*. This verb can be used to encode either a decorating event, as in (20a), or a clearing event, as in (20b) (cf. Hook 1983: 187).

(20) a. John trimmed the tree with lights.
b. John trimmed the tree of overgrown branches.

Nemoto (1996) claims that although in (20) the same verb is used in different constructions to describe different types of events, the difference in meaning cannot be attributed to the constructions involved since the two senses are available in a simple transitive sentence like (21).

(21) John trimmed the tree.

The two senses prove to be distinct since *trim* must receive the same reading, i.e. either a decorating event or a clearing event as in the following identity test.[6]

(22) John has been trimming the trees and so has Mary. (Nemoto 2001: 191)

With respect to the notion of polysemy, Tuggy (1993: 282) argues that distinct and unrelated meanings and indistinguishable meanings can be seen as two extremes of a cline with polysemy in the middle. Since the senses of decorating and clearing can be subsumed under a common meaning that could be described as "causing an entity to look better," it makes sense to regard the two senses as an instance of polysemy.

Note that the polysemy of *trim* is different from that of *lease*. In the case of *lease*, the different uses are understood against a single frame, as Goldberg

claims, but the two uses of *trim* seem to be linked to two distinct but related frames. This difference may underlie the following contrast.

(23) Bill leased this house FROM Cathy and that house TO Beth.

(24) *Bill trimmed Laura's tree WITH lights and Mary's tree OF overgrown branches. (Nemoto 2001: 191)

These observations show that verbs need not be associated with a single frame.

4. An alternative constructional analysis

4.1 Verb meaning

Let us now turn to the characterization of the meaning of *brush*. We know from experience that a brushing act may be done for several different purposes, including those of clearing and smearing.[7] When we are brushing a surface with the intention of taking some substance away from it, we sometimes find it difficult to accomplish our goal. That is, a sweeping act may or may not result in the surface being clean. By contrast, when we are brushing a surface with the intention of applying some liquid to a surface, the liquid usually ends up on the surface. The background frames for a sweeping event and a smearing event can be defined as follows:

(25) *The Sweeping Frame*:
Roles: sweeper, substance, surface, destination
Relation: A sweeper makes contact with a surface with the intention of moving a substance from the surface to a destination, which may or may not be succeeding.

(26) *The Smearing Frame*:
Roles: smearer, substance, surface
Relation: A smearer makes contact with a surface with the intention of putting a substance on a surface, which is usually carried out successfully.

We will refer to the uses of *brush* understood against the sweeping and smearing frames as sweeping-*brush* and smearing-*brush*, respectively. The claim that *brush* is polysemous is confirmed by the reading of a sentence that contains an identity-of-sense anaphora like (27).

(27) John has been brushing the loaves and so has Mary.

This sentence sounds like a pun, if John has been brushing the loaves with some liquid and Mary has been brushing some foreign substance off the loaves. Thus, *brush* can be said to be ambiguous between the senses of smearing and sweeping, rather than vague.

4.2 The interaction between verb uses and constructions

Following Goldberg (1995, 2002), we regard the *onto*- and *with*-forms as an instance of the caused-motion and causative-plus-*with*-adjunct constructions, respectively.[8] It seems to make sense to characterize the rest of the forms found in the locative alternation in a parallel fashion. Thus, we regard the *from*- and *of*-forms as instantiating the caused-motion and causative-plus-*of*-adjunct constructions, respectively. As we have seen in Section 2.1, these argument structures are used to provide a particular perspective for conceptualizing an event (cf. Fillmore 1977: 59; Fillmore & Kay 1993: Ch. 8 for discussion of the role of argument structure). Adopting the insights of previous analyses, the caused-motion construction can be regarded as characterizing an event in terms of a change of location, and the causative-plus-*with*-adjunct and causative-plus-*of*-adjunct constructions can be seen as characterizing an event in terms of a change of state.

Returning to our discussion of the verb *brush*, we can observe that in a sweeping event, a surface has some foreign substance on it and a sweeping activity may or may not carry out the removal of the substance. When a sweeping act brings about removal, we can describe the motion of the substance by referring to either the initial place of the substance, as in (19a), or, the final place of the substance, as in (19b). The *from*- and *onto*-forms can be said to refer to different points of a single putative path along which the substance moves. The participant roles of sweeping-*brush* fuse with the argument roles of the caused-motion construction as follows.

(19) a. John brushed the crumbs off the table.

(28) sweeping-*brush*: (sweeper, substance, surface)
caused-motion construction: (cause, theme, path/location)

(19) b. John brushed the crumbs onto the floor.

(29) sweeping-*brush*: (sweeper, substance, destination)
caused-motion construction: (cause, theme, path/location)

An event of smearing can be viewed either as causing a liquid to be applied to a surface or as causing a surface to be covered with a liquid. Thus smearing

brush can occur either in the caused-motion construction, as in (19c), or in the causative-plus-*with*-adjunct construction, as in (19d). The interaction between smearing-*brush* and the two constructions is given below.

(19) c. John brushed melted butter over the loaves.

(30) smearing-*brush*: (smear, substance, surface)
caused-motion construction: (cause, theme, path/location)

(19) d. John brushed the loaves with melted butter.

(31) smearing-*brush*: (smearer, surface, substance)
causative-plus-*with*-adjunct construction:
(cause, patient, instrument)

The interaction between verbal and constructional semantics in (28)–(31) explains why smearing-*brush* displays the same type of alternation as verbs like *load*, *smear*, and *spray* (cf. also Goldberg 2002: 344 for the representation of the interaction between *load* and the two constructions). Given that the two constructions provide different perspectives, i.e., a change of state and a change of location, we might expect the proverbial holistic/partitive effect in (19c) and (19d). However, the meaning difference is neutralized here because of the properties of the lexical items involved. With respect to the preposition *over*, Salkoff (1983: 322) points out that it has the power to remove the relevant meaning difference in the so-called *swarm*-alternation. Salkoff points out that the holistic/partitive effect accompanies the alternation between (32a) and (32b) but not between (32a) and (32c).

(32) a. The tree swarmed with bugs.
b. Bugs swarmed on the tree.
c. Bugs swarmed over the tree. (Salkoff 1983: 322)

As regards the choice of the noun phrases, Jeffries and Willis (1984: 717) cite (33) to show that the holistic/partitive relationship can be neutralized when the size of the entity referred to by the direct object is relatively small and it is unlikely that one intends to cover only part of it.

(33) a. Lesley sprayed her plugs with Damp Start.
b. Lesley sprayed Damp Start on her plugs.

In this section, we have shown how the two uses of *brush* interact with the two constructions.

4.3 Some solutions to the problems with previous analyses

As we have discussed in Sections 2.2 and 3.2, the difference between (19b) and (19c) on the one hand and the similarity between (19a) and (19b) on the other elude a proper explanation in Levin & Rapoport's (1988) analysis and a putative constructional analysis that falls short of providing a detailed frame-based description of verb meaning. However, the difference and similarity can be explained by our alternative analysis, which divides the verb uses in (19) into two groups: sweeping-*brush*, as in (19a, b), and smearing-*brush*, as in (19c, d).

Our analysis explains the difference between (19b) and (19c) as follows. The *onto*-phrase with sweeping-*brush* (19b) refers to an endpoint of a path that the substance traverses and thus contact is not made between a brush and the bowl. By contrast, the *onto*-phrase with smearing-*brush* (19c) refers to a surface that a brush is moved against and hence covered with some substance. Since (19c), but not (19b), involves the sense of smearing, only (19c) can enter into the locative alternation associated with verbs like *load* and *spray*.

With respect to the similarity between (19a) and (19b), the present analysis argues that in both examples the same verb is used in the same construction, i.e. both sentences are made up of the combination of sweeping-*brush* and the caused-motion construction. These sentences describe a sweeping event in which some substance is moved from one place to another. The *from*- and *onto*-phrases in these sentences specify a starting point and an endpoint of a path that some substance traverses, respectively. Thus these phrases can be coordinated, as in (13), here repeated as (34a).

(34) a. Bill brushed the lint FROM the table and the crumbs INTO the bowl.
b. *Bill brushed the lint FROM these loaves and melted butter OVER those loaves.

By contrast, in (34b), the *from*-phrase and the *onto*-phrase evoke different frames, i.e., the former evokes the sweeping frame and the latter the smearing frame. Thus, the two phrases fail to coordinate.

4.4 Idiosyncrasy and generality

In the present analysis, we characterize verb meaning with fairly specific notions, rather than positing more general schematic notions subsuming them. Such an analysis can prove that facts which might appear at first to be idiosyncratic and complex such as the one we are concerned with in this chapter are made up of both idiosyncratic and more general patterns of language (see stud-

Table 2. The behavior of the two uses of *brush* with respect to the locative alternation

	***with*-form**	***onto*-form**	***from*-form**	***of*-form**
smearing-*brush*	X	X	–	–
sweeping-*brush*	–	X	X	–

Note. 'X' indicates that the verb use (given in a row heading) can appear in the syntactic frame (given as a column heading); '–' indicates that the verb cannot appear in the syntactic frame.

ies such as Fillmore & Atkins 1994; Norvig & Lakoff 1987). According to our alternative analysis, the usage differences in (19) can be reported as in Table 2.

The fact that *brush* encodes the senses of smearing and sweeping can be taken as a relatively idiosyncratic phenomenon. Kiparsky (1997: 482) claims that while all meanings of denominal verbs can be explained in terms of canonical uses of the things denoted by the noun, the exact array of meanings expressed by the denominal verb is not predictable. Similarly, the actual range of uses associated with *brush* can be regarded as a function of linguistic convention.

On the other hand, the fact that smearing-*brush* can occur with either the *with*-form or the *onto*-form is explainable in terms of facts about other semantically related verbs. Since the smearing sense is compatible with both the notions of a change of state and a change of location, smearing-*brush* can be integrated into either the causative-plus-*with*-adjunct construction, including the *with*-form, or the caused-motion construction, including the *onto*-form, thus behaving like *load*, *smear*, and *spray*.

We can also explain the behavior of sweeping-*brush* with reference to a property exhibited by some other verbs with a similar meaning. Sweeping-*brush* can appear in the *onto*- and *from*-forms but not in the *with*- or *of*-forms, as shown below.

(35) a. John brushed the crumbs into the bowl. (=(11a))
b. *John brushed the bowl with the crumbs. (=(11b))
c. John brushed the crumbs off the table. (=(3a))
d. *John brushed the table of the crumbs.

The same holds for verbs like *shovel* and *sweep*, as the following examples illustrate.

(36) a. She swept the dust into the corner.
(Levin & Rappaport Hovav 1995: 204)
b. *She swept the corner with the dust.

c. Phil swept the crumbs off the table.
d. *Phil swept the floor of crumbs.
(Rappaport Hovav & Levin 1998: 120/121)

(37) a. Sylvia shoveled the snow onto the lawn.
(Levin & Rappaport Hovav 1991: 136)
b. *Sylvia shoveled the lawn with the snow.
c. Carla shoveled the snow from the walk. (Levin 1993: 127)
d. *Carla shoveled the walk of snow. (ibid.)

These observations show that the relation between semantic and distributional properties of *brush* is best described in terms of verbal polysemy, as summarized in Table 2. A theory that prefers a single verb sense is likely to fail to accommodate both the idiosyncratic and productive aspects of *brush* with which we are concerned.[9]

5. The semantics of the *onto*- and *from*-forms

As we have pointed out at the beginning of this chapter, there is an open question: What is it like for a single verb to be found with both syntactic frames associated with putting and those associated with removal? We have already hinted at an answer to this question: The *onto*- and *from*-forms need not be taken as encoding contradictory events; rather they can be understood as referring to different parts of an event and hence evoking a single background frame.

In the present analysis, the *onto*-form is not always associated with the putting sense. It is used to encode the putting sense when it is found with smearing-*brush* but not with sweeping-*brush*. This important distinction does not seem to be made by previous accounts because they cite the following examples as describing putting events.

(38) a. brush the crumbs into the bowl
(Levin & Rapoport 1988: 279)
b. Lynn scraped the leftovers into a bowl.
(Levin & Rappaport Hovav 1995: 136)
c. Sylvia shoveled the snow onto the lawn. (ibid.)
d. Kelly raked the leaves into the gutter. (ibid.)
e. She swept the dust into the corner.
(Levin & Rappaport Hovav 1995: 20)

In (38), each *onto*-phrase refers to a destination of the motion of some substance. It does not mark the surface against which a person's hand or an instrument is moved. This property contrasts with that of the *onto*-phrase found with a verb use denoting the putting sense, exemplified below:

(39) a. John brushed melted butter over the loaves.
(Levin & Rapoport 1988: 279)
b. I rubbed the oil into the furniture.
(Levin & Rappaport Hovav 1995: 204)
c. Kay wiped the polish onto the table.
(Levin & Rappaport Hovav 1991: 136)
d. He winced as she dabbed disinfectant on the cut and covered it up for him. (British National Corpus)

In (39), each *onto*-phrase introduces an entity with which a person's hand or an instrument makes contact. The analysis presented here claims that the *onto*- and *from*-phrases are instances of the same construction and hence should not be characterized as expressing incompatible events. This view also allows us to explain the following examples.

(40) a. John brushed the crumbs off the table onto the floor.
b. John shoveled snow off the pavement into the gutter.
c. John wiped the dirt from the plate onto the table.

The sentences in (40) are problematic, if the *from*- and *onto*-phrases encode antagonistic meanings, as Levin & Rappaport Hovav (1991) suggest. The examples in (40) describe the motion of some substances referring to the whole path. This property stands in contrast to the property of verbs like *load*, *put*, *clear*, and *remove*.

(41) a. John loaded freight (*off the truck) onto the ship.
b. John put the money (*out of the bag) into the safe.

(42) a. John cleared the dishes from the table (*to the sink).
b. John removed the dishes from the table (*to the sink).

These verbs cannot express the whole path, though they describe events, which necessarily involve motion of some substance from one place to another. Verbs like *load* and *put* focus on an endpoint of a path along which some substance traverses but verbs like *clear* and *remove* focus on a starting point of a path along which substances move. This is how verbs like *load* and *put* and verbs like *clear* and *remove* develop antagonistic meanings.

6. Conclusion

In order to show the constructional nature of some argument structures, Goldberg (1995) mainly analyzes cases where the same argument structure is found with different verbs. Goldberg (2002) also emphasizes the importance of examining each surface pattern on its own terms, thereby questioning a tendency to analyze one argument structure pattern solely in relation to another. Given a commitment of Construction Grammar to account for the entirety of a language, I believe that it is also important to examine cases like the one in which the same verb is found in a single argument structure or different argument structures to yield a range of meanings. With regard to such a case, Goldberg presents the following view: "[I]t is possible to recognize that to a large extent, verb meaning remains constant across constructions; differences in the meaning of full expressions are in large part attributable directly to the different constructions involved" (Goldberg 1995:19). The results of the present analysis suggest that this remark should not be read as giving instructions to emphasize the role of constructions. We must be careful not to insist on wider powers than a construction really has. See studies like Boas (2003a, 2003b), Kay (1996), van der Leek (1996, 2000) for a similar view.

With Frame Semantics as a descriptive and analytic tool, Construction Grammar allows us to delve into more details of verb meaning. As suggested by Kay and Fillmore (1999), the construction grammarian is required to describe all the patterns of a language without loss of generalization. Focusing on the locative alternation, this chapter has shown how a frame-based description of verbal polysemy may be used to explain a range of argument structures associated with a verb in a constructional approach.

Notes

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1. See e.g., Salkoff (1983) and Dowty (2000) for discussion of the intransitive *swarm*-alternation, exemplified by (i), and its relation to the transitive *spray/load* alternation.

(i) a. Bees are swarming in the garden. (Salkoff 1983: 288)
b. The garden is swarming with bees. (ibid.)

2. Fraser (1971: 607) illustrates this distinction with the following contrast.

(i) a. The boy loaded the boards one by one onto the wagon.
b. *The boy loaded the wagon with boards one by one.

3. The whole array of *brush* expressions that Levin & Rapoport (1988: 279) cite as an example of a single verb appearing in a broad range of syntactic contexts includes the following: *brush the tangle out*; *brush the lint off*; *brush the lint off the coat*; *brush the crumbs into the bowl*; *brush melted butter over the loaves*; *brush the coat clean*; *brush one's way to healthy hair*; *brush a hole in one's coat*.

4. In conjunction with this, Levin & Rappaport Hovav (1991) claim that verbs like *wipe* can be used not only as verbs of removal, (i), but also as verbs of putting, (ii).

(i) a. Kay wiped the fingerprints from the counter. (1991: 128)
b. Sylvia mopped the spots from the floor. (1991: 131)

(ii) a. Kay wiped the polish onto the table. (1991: 136)
b. Lynn scraped the leftovers into a bowl. (ibid.)

In explaining this fact they state as follows: "This property is problematic if these verbs are basically verbs of removal since putting and removing are opposite activities" (1991: 136).

5. For a critique of Goldberg's treatment of *kick* see e.g., Hirose (1996) and Nemoto (1998: 225). A similar critique is presented by Boas (2003a: 107–110) with respect to *hit*.

6. See Cruse (2000), Geeraerts (1993), Langacker (1988: 133–140), and Tuggy (1993) for discussion of some problems in using commonly employed tests like this as a diagnostic for polysemy.

7. Describing the whole range of meanings associated with the denominal verb *brush* goes beyond the scope of this chapter.

8. Given that verbs with very general meanings such as *go*, *do*, *make*, *give*, and *put* can be regarded as forming the basis of the meanings of the argument structure constructions (Goldberg 1999; Kay 1996), the semantics of the causative-plus-*with*-adjunct and causative-plus-*of*-adjunct constructions can be characterized as derived from the meanings of the verbs *fill* and *empty*.

9. In conjunction with this, Cruse (2000: 35–39) points out that specific readings of the noun *knife* are well established in contrast to a general reading. See Boas (2003a: Chs. 3 and 6) for some relevant discussion of a similar view.

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Chapter 6

A constructional approach to mimetic verbs

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1. Introduction*

Mimetic words in Japanese employ a large set of members and their linguistically unique properties have recently led to a great deal of interesting investigations (Hamano 1986, 1998; Tamori & Schourup 1999). They are symbolic or iconic and represent sounds, shapes, texture, or something more abstract such as feelings. McCawley (1968:64) gives the following description: mimetics "function syntactically as manner adverbs and may refer to just any aspect (visual, emotion, etc.) of the activity involved, rather than just its sound." Morphophonological make-up of mimetic words ranges from two-mora words as in (1a), three-mora words as in (1b), reduplication of 2-mora and to 3-mora base as in (1c) and (1d), respectively, and to multi-mora words as in (1e).

(1) a. *pin, pan, gan, kit*(*-to*), *paa*, ...
b. *kitin, garan, garari, zubari, baan, pitit*(*-to*), *pityat*(*-to*), *pesyari*, ...
c. *kuru-kuru, saku-saku, guri-guri, gura-gura, kan- kan, suya-suya*, ...
d. *dosun-dosun, dosin-dosin, katin-katin, gatan- gatan*, ...
e. *gossori, kossori, todabata, hunwari, pottyari*, ...

While many mimetic words are used to describe sounds and manners, some refer to concrete objects and others are used as predicates when they occur with the light verb *suru* 'do'. Some examples are given in (2)–(4).

(2) *Hosi ga kirakira*(*-to*) *hikatteiru.*
stars NOM in glittering manner shining
'Stars are glittering.'

(3) *Sukaato no hira-hira ga kawaii.*
skirt GEN frill NOM cute
'The frill of the skirt is cute.'

(4) *Atama ga gan-gan-suru.*
head NOM pounding
'I have a pounding headache.'

The adverbial use of mimetic words is especially frequently observed in Japanese where English verbs incorporate or conflate the manner, as in (2). More examples of this sort are given in (5) (Ono 1994: xxv–xxvi), where various modes of walking are expressed through the combination of mimetic words as modifiers and the verb *aruku* 'walk', while English employs independent verbs that conflate the meaning of 'walk' and the manner of walking.

(5) a. *tyoko-tyoko aruku* 'waddle'
b. *teku-teku aruku* 'trudge'
c. *toko-toko aruku* 'trot'
d. *dosi-dosi aruku* 'lumber'
e. *tobo-tobo aruku* 'plod'
f. *bura-bura aruku* 'stroll'
g. *yota-yota aruku* 'stagger'
h. *yoti-yoti aruku* 'toddle'

The same pattern is observed in a wide range of verb classes, from manner of motion to sound emission.

It has been argued that these mimetic words constitute an independent word class with particular phonological and morphological properties, and this is a primary reason that traditionally they have often been excluded from theoretical investigation and have thus not received analyses as extensive as other word classes including native and Sino-Japanese words. It is only recently that mimetic words have been reconsidered with respect to their implications for linguistic theories. Examples of this trend are seen in the discussion of phonological properties of mimetic words and their implications for autosegmental theory, underspecification, and optimality theory (Mester & Ito 1989; Hamano 1998; Ito & Mester 1999).

In this chapter I will pursue implications of mimetic words to lexical semantic theories; more specifically, implications for two prevalent approaches to the multiple meaning of verbs, i.e., the projectionist approach and the constructional approach. The projectionist approach, as advanced by Rappaport Hovav & Levin (1998), holds that the multiple meaning of a verb is a manifestation of individually different lexical representations and that the syntactic

distribution of a verb's arguments and adjuncts is determined by the meaning. In contrast, the constructional approach, as is most robustly developed by Goldberg (1995), claims that verb meaning comes not from the meaning of the verb alone or the composition of the meaning of the verb and the meaning of other constituents in a sentence, but from the composition of the meaning of the verb and the meaning of the construction in which it occurs. As I will demonstrate below, the independent status of mimetic words, especially their semantic nature, makes it difficult to analyze their lexical semantic representation and argument structure on a par with standard verbs in the language. Drawing on data from Japanese mimetic verbs, I shall argue that the so-called "meaning" of a mimetic verb should not be attributed solely to the mimetic word itself, but rather it results from more global information obtained throughout a sentence in which the mimetic verb appears. The conclusion drawn from this investigation is that the selection of a specific interpretation associated with a mimetic verb in Japanese is best captured in constructional terms.

In what will follow below, I will label as a "mimetic verb" the combination of a mimetic word immediately followed by the light verb *suru* 'do', as is exemplified in (6).

(6) a. *tin-suru* 'to microwave'
poi-suru 'to throw away'
b. *hotto-suru* 'to be relieved'
katto-suru 'to get angry'
c. *beta-beta-suru* 'be sticky'
doki-doki-suru 'be nervous'

In most cases, furthermore, I will limit my discussion to mimetic verbs that consist of reduplicated mimetic words like those in (6c); they take the schematic form of (7).

(7) $C_1V_1C_2V_2$- $C_1V_1C_2V_2$-*suru*

2. Unique properties of mimetic words

In this section I will show that mimetic words exhibit a unique set of properties from their phonological, categorial, and semantic perspectives. Such a cluster of properties is distinctive enough so as to constitute a category different from other lexical items including native words and loans.

2.1 Phonological characteristics

McCawley (1968) and Ito & Mester (1993) explain that native and Sino-Japanese words have a phonotactic constraint that a single occurrence of the phoneme /p/ must be followed by another occurrence of the same phoneme, making it a geminate, or by a moraic nasal /n/, whereas mimetics do not follow the same constraint, as is evidenced by the presence of mimetic words such as *pota-pota* 'dripping' and *pitya-pitya* 'splashing'. Furthermore, mimetic and native words are not allowed to contain a nasal sound immediately followed by a voiceless consonant, whereas Sino-Japanese and other loans are not bound by the same constraint.

Of the phonological characteristics of mimetic words, however, the one that is most relevant to our discussion of their meaning is that mimetic words are sound-symbolic. Moreover, as Hamano (1998: 2) points out, "they symbolize manners or psychological conditions" and in this sense they serve as more than just onomatopoeic expressions. In her extensive investigation of the sound-symbolic nature of mimetic words in Japanese, Hamano summarizes the relation between a consonant and what it symbolizes in C_1VC_2V-based mimetic adverbs as in (8)–(9).

(8) C_1

p	taut surface	light; small; fine
b	taut surface	heavy; large; coarse
t	lack of surface tension; subduedness	light; small; fine
d	lack of surface tension; subduedness	heavy; large; coarse
k	hard surface	light; small; fine
g	hard surface	heavy; large; coarse
s	non-viscous body; quietness	light; small; fine
z	non-viscous body; quietness	heavy; large; coarse
h	weakness; softness; unreliability; indeterminateness	
m	murkiness	
n	viscosity; stickiness; sliminess; sluggishness	
y	leisurely motion; swinging motion; unreliable motion	
w	human noise; emotional upheaval	

(Hamano 1998: 172)

(9) C_2

p, b	explosion; breaking; decisiveness
t	hitting of a surface; coming into close contact; complete agreement
k	opening; breaking up; swelling; expanding; puffing out; emission from inside; surfacing; in-out movement
s	soft contact; friction
h	breath
m	?
n	bending; elasticity; unreliability; lack of force; weakness
y	sound from many sources; haziness; childishness
w	softness; faintness; haziness
r	rolling; fluid movement

(Hamano 1998: 173)

In each instance of a CVCV-based mimetic word, Hamano claims that C_1 indicates the tactile nature of the object while C_2 describes the type of movement. Two examples that describe the relation between the two consonants and what they symbolize are given in (10)–(11) (taken from Hamano 1998: 170).

(10) *Kotu-kotu-to tume de ita o tataita.*
nail with board ACC hit
'I knocked on the (hard) board with my fingernail.'

(11) *Toku-toku-to osake o tuida.*
sake ACC poured
'I poured (out) sake with a glugging sound.'

Hamano (1998: 170) explains, "the combination /k-t-/ means that 'a hard surface is involved in hitting,' whereas the combination /t-k-/ means that 'a lax surface is involved in an inward/outward movement'." While many mimetic adverbs often seem to fit the description of (8)–(9), there are also a number of cases whose symbolism is not as straightforwardly explained by the same generalization. For example, *zoro-zoro* in (12) describes a movement of a large group forming a line, and *sowa-sowa* in (13) expresses impatience.

(12) *Hito ga bizyutukan kara zoro-zoro-to detekita.*
people NOM museum from exited
'A group of people continuously came out of the museum.'

(13) *Rassyuawaa ni butukari Taroo wa tokei o sowa-sowa-to mite bakari-ita.*
rush.hour at hit Taro TOP watch ACC see kept
'Taro kept looking impatiently at his watch in the middle of the rush hour.'

What these mimetic adverbs symbolize is not readily deduced from the combination of what each consonant is meant to express according to (8)–(9).

Another sound-symbolic aspect that is pertinent in relation to meaning and that has been discussed in phonology at some length is the role of reduplication (Hamano 1986, 1998) and palatalization (Hamano 1986, 1998; Mester & Ito 1989). Hamano describes that a mimetic of the CVCV-base refers to a single occurrence while multiple repetitions indicate consecutive occurrences and in some cases quickness or forcefulness of an action. Palatalization, according to Hamano, adds to non-palatalized mimetics the sense of uncontrolledness, which subsumes the concepts including childishness, immaturity, instability, unreliability, uncoordinated movement, diversity, excessive energy, noisiness, lack of elegance, cheapness, and lack of restraint. Duplicated mimetics are shown in (14)–(15), and mimetics with and without palatalization are contrasted in (16)–(18).

(14) a. *Teeburukurosu o pin-to hippatte hosita.*
table cloth ACC pull.and dried
'I carefully pulled the table cloth into shape and hung it on a line.'

b. *Teeburukurosu o pinpin-to hippatte hosita.*
table cloth ACC pull.and dried
'I carefully pulled the table cloth into shape a couple of times and hung it on a line.'

(15) a. *Tukue no ue o pan-to hon de tataita.*
table GEN top ACC book by hit
'She slapped the book down on the desk.'

b. *Tukue no ue o panpan-to hon de tataita.*
table GEN top ACC book by hit
'She slapped the book down on the desk a couple of times.'
(Hamano 1998: 65)

(16) a. *koro-koro* 'rolling on'
b. *kyoro-kyoro* 'looking around inquisitively'

(17) a. *poko-poko* 'making holes here and there'
b. *pyoko-pyoko* 'hopping around; in a childish, bobbing motion'

(18) a. *suru-suru* 'passing smoothly'
b. *syuru-shuru* 'the sound of gas escaping from a narrow opening'
(Hamano 1998: 184–186)

The phonological contribution to the meaning of mimetic words is undeniable in that consonantal combination, reduplication, and palatalization all participate in symbolization of some sounds and images. On the other hand,

the extent to which these phonological phenomena determine the meaning of mimetics is far from clear, and as some exceptional cases show, they may not be a defining factor for the semantic properties of mimetics at all.

2.2 Categorial characteristics

Another characteristic of mimetic words that separates them from other word types is their indistinguishable categorial status. While various functions that mimetics exhibit resemble those of nouns, adverbs, and verbs, mimetic words, when they stand in isolation, cannot be associated with morphologically identifiable categories. Nouns, adverbs, and verbs are all so classified by their conjugation or modification patterns. For instance, nouns and verbs have specific inflectional patterns, as is illustrated in (19)–(20).

(19) noun: *hon* 'book'

a.	non-past	*hon-da*	'it is a book'
b.	non-past neg.	*hon-zya na-i*	'it's not a book'
c.	past	*hon-dat-ta*	'it was a book'
d.	past neg.	*hon-zya na-kat-ta*	'it wasn't a book'
e.	tentative	*hon-daroo*	'it is probably a book'

(Tsujimura 1996: 127)

(20) verb: *tabe-ru* 'eat'

a.	non-past	*tabe-ru*	'(I) will/do eat'
b.	non-past neg.	*tabe-nai*	'(I) will/do not eat'
c.	past	*tabe-ta*	'(I) ate'
d.	past neg.	*tabe-na-kat-ta*	'(I) didn't eat'
e.	tentative	*tabe-ru-daroo*	'(I) will probably eat'

Adverbs are either derived from adjectives, which makes it easy to identify them on morphological grounds, as is shown in (21), or they appear as independent forms when they do not have corresponding adjectives. In that case their categorial status is determined by their function of modifying adjectives, verbs, other adverbs, and entire sentences. Examples of this type are given in (22).

(21)

	adjective	adverb	gloss
a.	*ooki-i*	*ooki-ku*	'big'
b.	*aka-i*	*aka-ku*	'red'
c.	*taka-i*	*taka-ku*	'high, expensive'
d.	*too-i*	*too-ku*	'far'
e.	*samu-i*	*samu-ku*	'cold'

(Tsujimura 1996: 132)

(22) a. *Ano hito wa* ***totemo*** *omosiroi.*
that person TOP very interesting
'That person is very interesting.'
b. ***Koounnimo*** *ziko de kega o sinakatta.*
luckily accident at injury ACC didn't.do
'Luckily, I didn't have any injury in the accident.'

In contrast with these words that generally have clear categorial indication, mimetic words by themselves give no clue as to which category they should belong to because mimetics appear in morphologically uninflected form. Furthermore, their categorial status is not important in any sense because it does not contribute to the meaning of a mimetic word in the way that the categorial information of other word types does. That is, mimetic words inherently do not have categorial status. To illustrate this point, consider the distribution of the mimetic word *ira-ira* in (23).

(23) a. *Kodomo no seiseki ga waruku iraira ga tamatta.*
child GEN grade NOM bad irritation NOM accumulated
'Since my child's grades have been bad, my irritation has accumulated.'
b. *Ano hito wa itumo iraira-to hanasu.*
that person TOP always irritated speak
'That person always speaks in an irritated manner.'
c. *Otto no kudaranai hanasi ni iraira-sita.*
husband GEN silly talk at get.irritated
'I got irritated by my husband's silly talk.'

In all cases of (23), the identical mimetic, *ira-ira*, is used, but its function in each case is determined by what surrounds it. For example, *ira-ira* in (23a) appears with the Nominative case marker, which normally indicates that the preceding word is a noun; *ira-ira* in (23b) is accompanied by *-to*, which allows it to modify the following verb and hence gives the status of an adverb; and *ira-ira* in (23c), immediately followed by the light verb *suru* 'do', serves as a verb in combination with *suru* 'do'. Therefore, a mimetic word alone does not provide a clue that can lead to categorial identification. Since categorial information is not exhibited in mimetics, information about semantic properties that are often associated with lexical categories is also missing. Incidentally, the lack of categorial identification is reflected in the dictionary definition of *ira-ira* in (24) (Ono 1994: 4): neither entry suggests a specific connection to the categorial status of the mimetic word, leaving the issue totally open. Furthermore, all examples for (24a) take the verbal form parallel to (23c).

(24) a. Expression of nervousness, irritation, annoyance etc.
b. Expresses the irritating, irksome feeling caused by having a bone stuck in one's throat or being pricked by a thorn etc.

In sum, mimetic words lack distinctive categories and as a natural consequence, the semantic characteristics that are often associated with categories are missing in mimetics as well.

2.3 Semantic characteristics

Turning to semantic characteristics, many mimetic words lack a clear definition of their "meaning." This is perhaps attributable to the fact that mimetic words are by definition symbolic or iconic rather than referring to specific objects and concepts. For example, the dictionary of Ono (1994) gives the definition of *koro-koro* and *tyon*, as in (25).

(25) *koro-koro* (Ono 1994: 122)
a. The sound or action of a small, round object rolling continuously.
b. A sound or voice reminiscent of a hard, round object rolling. It is also used to describe a young woman's laughter.
c. To be round and ripe.
d. For things to be done easily in succession.

(26) *tyon* (Ono 1994: 201)
a. The sound of clapping wooden clappers together once.
b. Used with the meaning of something ending.
c. To write a dot, or that dot itself.
d. For movement to be sudden and brief.

Connection among these definitions for a single mimetic word may sometimes not be straightforward, as is exemplified by the four definitions in (25): (25a) and (25c) share something round, but the description of laughter in (25b) and successive actions in (25d) do not seem to be readily connected to roundness. This is primarily because the connection among them may need to rely on human perception and imagination on the part of individual speakers. This further explains the fact that dictionaries, even those that exclusively list mimetic words, have a wide variety of definitions, and many of the standard dictionaries leave out mimetic words. For example, compare (25) with the definitions of *koro-koro* that *Kojien* gives (translation mine) in (27).

(27) a. The manner of rolling.
b. The sound of a bell ringing.

c. The manner of laughing hard.
d. The description of a girl being round and plump.

Although a basic iconic picture underlying these definitions may be readily imaginable, i.e., an image related to roundness, a deeper unified meaning does not seem to be always agreed upon in its extension to the sound of a bell, to a chubby girl, and to successive action. This inevitably leads to the lack of unique definitions of mimetic words.

It is interesting to note that despite lack of consensus on what constitutes the meaning of a given mimetic word, mimetics in Japanese are extremely productive and ubiquitous. Speakers can easily create one with a normally agreed-upon sense of what it symbolizes although its strict definition is not something we can easily put in words. Furthermore, mimetic words emerge at a very early stage of language acquisition, and as the child acquires more vocabulary, both nouns and verbs, the number of mimetics decreases.

The vague nature of semantic characteristics that are sometimes problematic in providing dictionary definitions, then, seems to provide a foundation substantial enough to assume that the semantic content of mimetic words should receive an analysis different from the meaning of non-mimetic words, which are more solid and uniquely definable than mimetics. Kita (1997), for example, claims that adverbial mimetics in Japanese belong to the affecto-imagistic dimension of meaning, as opposed to the analytic dimension. Kita explains that in the affecto-imagistic dimension of meaning, "language has direct contact with sensory, motor, and affective information" (Kita 1997:380); and that the analytic dimension is characterized by "decompositional and hierarchical representation in terms of decontextualized semantic partials" (Kita 1997:409). Furthermore, it is crucial in his analysis that the two dimensions are totally autonomous. He states, ". . .the semantics of a mimetic and that of other parts of a sentence are not fully integrated with each other despite the fact that they are syntactically integrated" (Kita 1997:386).

As I have demonstrated above, it is clear that the semantic properties of mimetic words present quite a different picture from those of non-mimetic words. In this sense, I agree with Kita that the semantic representation of mimetics should be given a separate treatment from non-mimetic words although I will not discuss the issue of whether such a separate treatment should involve the assertion of the two dimensions that Kita proposes. I will thus assume that the semantic representation of mimetics does not involve the type of representation that can be decomposed into a set of primitives and variables. I will depart from Kita, however, in arguing that mimetic words are totally

integrated into the rest of the sentence. I will take a step further in claiming that a specific interpretation of a mimetic word's multiple "meaning" is determined only when global information throughout the sentence is taken into consideration.

3. A constructional analysis

To illustrate the global nature of semantic properties of mimetics, I will now focus on mimetic verbs. Let us examine the mimetic word *bura-bura*, whose dictionary definition is given in (28) (Ono 1994: 319), and its various uses as a mimetic verb, as in (29)–(32).

(28) a. Describes the motion of a hanging or drooping object swaying under an external force.
b. To stroll about in a relaxed way.
c. To live one's life or pass one's time idly without any particular aim.

(29) *Doa no totte ga bura-bura-suru.*
door GEN knob NOM bura-bura-do
'The door knob is loose.'

(30) *Taroo ga kooen o bura-bura-sita.*
Taro NOM park in bura-bura-did
'Taro strolled leisurely in the park.'

(31) *Taroo ga uti de bura-bura-siteiru.*
Taro NOM home at bura-bura-is.doing
'Taro is being lazy at home.'

(32) *Taroo ga asi o bura-bura-suru/saseru.*
Taro NOM legs ACC bura-bura-do/make.do
'Taro swings his legs.'

It seems that the definitions in (28) are illustrated by these examples: (28a) corresponds to (29), (28b) to (30), and (28c) to (31). Notice that while (29) and (32) are together subsumed by the definition of (28a), the event types in these two examples are quite different. (29) is a stative description of a loose door knob whereas (32) denotes a causative event that brings about motion. The aspectual and event type in each instance is quite distinct as well, ranging from the stative description in (29), to an atelic activity in (30), to a causative event in (32). As I have demonstrated above, the mimetic word, *bura-bura*, does not have a decomposable semantic representation, and thus the semantic disparity

including the variety in the event and aspectual types cannot be attributed to the semantic property of the mimetic word alone. Instead, the specific interpretation of the mimetic verb and the information about its event type should be accounted for more globally. That is, while mimetic verbs by themselves cannot be singled out for their specific "meanings," global information spread throughout a sentence including the number of NPs and their grammatical functions, animacy of the subject, and verbal morphology together gives rise to an explicit interpretation and an event type. For example, when the mimetic verb *bura-bura-suru* appears in the intransitive frame with an inanimate subject, as in (29), the verb is stative and describes the door knob being loose; when it is in the intransitive frame but with an animate subject and a traversal phrase indicated by the postposition *-o* or a locative phrase, as in (30)–(31), the verb is interpreted as activity, referring to the subject's dynamic, atelic action; and when it appears in the transitive frame, as in (32), the verb is construed as causative, i.e., Taro making his legs swing. Thus, I contend that these varying "meanings" are not to be attributed to the mimetic verb alone, but should be deduced from the construction in which it appears.

The validity of this constructional approach to the multiple meaning of mimetic verbs is further observed in the additional examples in (33)–(36). Each example set is prefaced by a dictionary definition of the mimetic word.

(33) *goso-goso*
The sound or feeling of hard but light objects rubbing or touching. Also, to make such a sound while moving about. It is a muffled, somewhat repressed sound. (Ono 1994:110)

a. *Kono nuno wa tezawari ga goso-goso-suru.*
this cloth TOP touch NOM
'This cloth feels rough.' (Ono 1994:110)

b. *Yoippari no otooto wa yonaka goso-goso-sitari, hon o yondari siteiru.*
night.owl GEN brother TOP night book ACC read do
'A night owl, my younger brother is always moving about or reading books in the middle of the night.' (Ono 1994:110)

c. *Tikatetueki no runpen ga kuzuire o goso-goso-saseteita.*
subway.station GEN tramp NOM trash.can ACC
'A tramp in the subway station was shuffling around in a trash can.' (Ono 1994:110)

(34) *bata-bata*

1. The sound produced when clothes or board-like objects are blown by the wind or bang against something. Or, the sound or action of wings or limbs moving vigorously and continuously with small, quick, disarrayed movements.
2. The action of objects falling continuously one after another. Or, things being undertaken one after another. It refers to a heavier object falling over, or the scale of events being large.
3. To be busy, or act in a hasty, unsettled manner. (Ono 1994: 259)

a. *Hata ga kaze de bata-bata-siteiru.*
flag NOM wind with
'The flag is flapping noisily in the wind.' (Chang 1991: 471)

b. *Kodomo wa teasi o bata-bata-sasete nakiwameiteita.*
child TOP hands.and.legs ACC bawl.loudly
'The child thrashed his hands and legs back and forth, bawling loudly.'
(Ono 1994: 259 – modified)

(35) *guru-guru*

1. Describes something rotating continuously or moving around.
2. The state of moving in a circular fashion continuously.
3. To roll a long object; also, the state of being rolled up.
4. Describes something long coiling round something else; also the state of being coiled round something. (Ono 1994: 100–101)

a. *Kuruma de mati o guru-guru-sita.*
car by town throughout
'We drove around the town.'

b. *Asi o hootai de guru-guru-sita.*
leg ACC bandage with
'I wound the bandage around my leg.'

(36) *gosi-gosi*
The sound or action of rubbing a surface or object firmly.
(Ono 1994: 108)

Nabe no soko o tawasi de gosi-gosi-siteiru.
pan GEN bottom ACC scrubbing.brush with
'She is scrubbing the bottom of the pan with a scrubbing brush.
(Ono 1994: 108 – modified)

It should be clear from these examples that mimetic words provide information concerning the fundamental symbolism while the number and type of NPs and the animacy of the subject supply the information about the event type, and

that both kinds of information ultimately determine the specific interpretation of the mimetic verb. In (33a), for example, the mimetic verb appears in the intransitive frame, and the subject is inanimate. The stative interpretation is the result of putting together these pieces of information. (33b) and (35a) also take the intransitive frame, but the subjects are animate. In addition, (35a) includes a traversal expression marked with *-o*, implying a motion. Therefore, the mimetic verbs in these examples refer to atelic actions, particularly motion in these cases. (33c), (34b), (35b), and (36) take the transitive frame: either overt or covert animate subjects and direct objects marked with the Accusative Case *-o* together lead to dynamic events where the animate subjects act on the objects in the manners described by the mimetic words. Thus, the meaning of mimetic verbs cannot be found in the mimetic words themselves or not even from the mimetic verbs as a whole; rather, it is a property of the construction in which they appear.

It is worth noting that not all mimetic verbs have a wide range of frames in which they appear. For instance, *gosi-gosi-suru* is typically used in a transitive frame, and does not show up in an intransitive construction with an inanimate subject that is parallel to (33a), for example. This is because what the mimetic word *gosi-gosi* symbolizes and the real world situation together put a pragmatic restriction on the extent to which *gosi-gosi-suru* can denote. That is, the speaker's knowledge of the world makes it less likely to extend what *gosi-gosi* symbolizes to a static description of the sort expressed in (33a). However, I consider the restriction pragmatic in nature because the likelihood of such an extension can readily be altered if the nature of the world were to change, as in an imaginary world. It should be emphasized, furthermore, that if a new mimetic verb is coined (and coinage of mimetics and mimetic verbs is very frequently observed) the listener will be able to figure out what the event type of the mimetic verb may be, given the construction in which the mimetic verb appears, even if s/he does not have a clear idea what exactly the mimetic word is supposed to symbolize.

The constructional approach to mimetic verbs is further supported when we compare mimetic verbs with Sino-Japanese verbal nouns that appear with the light verb *suru*. Examples are given in (37)

(37) *sanpo-suru* 'take a walk'
syokuji-suru 'eat a meal'
nyuuyoku-suru 'take a bath'
tootyaku-suru 'arrive'
benkyoo-suru 'study'

Morphologically, the items in (37) take the same form as mimetic verbs discussed above. Verbal nouns in (37) are different from mimetic words, however, in that they are predicative with specific subcategorization frames and the subcategorization information is carried over when they are not accompanied by the light verb *suru*. In (38)–(40), the (a) sentences are examples with the verbal nouns with *suru* while the (b) sentences are the same nouns without *suru*. The same pattern is also observed when they appear in the nominal construction as in (c).

(38) a. *Taroo ga kooen de sanpo-sita.*
Taro NOM park in took.a.walk
'Taro took a walk in the park.'
b. *Taroo ga kooen de sanpo-tyuu, Hanako ni atta.*
Taro NOM park in walk-while Hanako with met
'Taro met/saw Hanako while taking a walk at the park.'
c. *Taroo no kooen de no sanpo.*
Taro GEN park in GEN walk
'Taro's walk in the park.'

(39) a. *Hanako ga Boston ni tootyaku-sita.*
Hanako NOM Boston at arrived
'Hanako arrived at Boston.'
b. *Hanako ga Boston ni tootyaku-go, Taroo ga kita.*
Hanako NOM Boston at arrival-after Taro NOM came
'Taro came after Hanako's arrival at Boston.'
c. *Hanako no Boston e no tootyaku.*
Hanako GEN Boston at GEN arrival
'Hanako's arrival at Boston.'

(40) a. *Taroo ga suugaku o benkyoo-sita.*
Taro NOM math ACC studied
'Taro studied math.'
b. *Taroo ga suugaku o benkyoo-tyuu, denwa ga natta.*
Taro NOM math ACC study-while telephone NOM rang
'The telephone rang while Taro studied math.'
c. *Taroo no suugaku no benkyoo.*
Taro GEN math GEN study
'Taro's study of math'

None of these patterns is observed with mimetic verbs. That is, while argument structure may be construed as a property of verbal nouns in (38)–(40), the same generalization cannot apply to mimetic verbs since they do not em-

ploy a structured lexical representation. Rather, they simply represent what they symbolize.

4. Implications for the two approaches to multiple meaning

As I have mentioned in the introduction, the analysis of mimetic verbs in Japanese has an implication for the two major approaches to multiple meaning, i.e., the projectionist approach and the constructional approach. One of the motivating factors of the projectionist approach is what Apresjan (1974) calls "regular polysemy." Rappaport Hovav and Levin (1998) give the range of environments in which the verb *wipe* appears as in (41) to illustrate regular polysemy.

(41) a. Terry wiped.
b. Terry wiped the table.
c. Terry wiped the crumbs into the sink.
d. Terry wiped the crumbs off the table.
e. Terry wiped the slate clean.
f. Terry wiped the crumbs into a pile.
(Rappaport Hovav & Levin 1998: 99)

They argue that the multiple meanings associated with *wipe* in (41) are a manifestation of individually different lexical representations and that the syntactic distribution of the verb's arguments and adjuncts is determined by the meaning. More relevant to our discussion, furthermore, is the fact that the extent to which verbs like *wipe* demonstrate the variety illustrated in (41) is regularly observed with verbs that belong to the same semantic class, i.e., surface contact verbs in this case. That is, the variety of syntactic environments depicted in (41) is also available with other surface contact verbs such as *sweep*.

While there is some evidence that the phenomenon of regular polysemy is observed in Japanese, it is not attested with mimetic verbs. I have demonstrated in (29)–(32) above that *bura-bura-suru* takes at least three structural patterns: the intransitive frame with an inanimate subject; the intransitive frame with a traversal or locational phrase; and the transitive frame. I have also shown that specific meanings are associated with these structural frames. Contrary to the projectionist prediction, mimetic verbs that consist of other swaying/swinging mimetic words, of which *bura-bura* is a member, do not exhibit the same range of argument/adjunct distribution nor the same semantic properties. For example, other swaying/swinging mimetic words include *gura-*

gura, *hura-hura*, *yusa-yusa*, and *yurari-yurari* according to Chang (1991), but except for *hura-hura* the patterns parallel to (30) and (31) are not available with these mimetics, and the transitive pattern of (32) (with the option of *suru*) is not available to any of them. Similarly, *guru-guru* in (35) belongs to the class of rotating/revolving according to Chang (1991), but other members of the same class such as *kuru-kuru* and *kururi-kururi* do not show the same patterns: neither takes the intransitive frame with a locational phrase as in (35a) or the transitive frame as in (35b) although the transitive frame may be possible with *kuru-kuru* if the light verb takes the form of *saseru*. Thus, mimetic verbs behave quite differently from other kinds of verbs in the language regarding regular polysemy, and the projectionist approach is not well motivated on these grounds.

5. Conclusion

In this chapter I demonstrated that mimetic verbs in Japanese exhibit a set of properties that is best analyzed in constructional terms. I have shown that mimetic words that include mimetic verbs cannot be singled out for their specific meanings, and that global information contributed by a whole sentence including the number of NPs and their grammatical functions, animacy of the subject, and verbal morphology together gives rise to an explicit meaning. Mimetic verbs also exhibit properties that run counter to what the projectionist approach to multiple meaning would predict concerning the phenomenon of regular polysemy. The conclusion drawn from the discussion of mimetic verbs is, then, that the varying interpretations of mimetic verbs are not to be attributed to the mimetic verb alone but should be deduced from the construction in which the mimetic appears.

Note

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Part III

Language variation and change

Chapter 7

Integration, grammaticization, and constructional meaning

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1. Introduction

Construction Grammar and Cognitive Grammar have much in common. It is thus appropriate that I discuss the similarities and differences between the two CG's. This comparison will however be fairly brief. Then, after presenting some basic notions of Cognitive Grammar, I will focus on a substantive matter of considerable grammatical importance: the extent of the integration a construction specifies among its constitutive elements. I will suggest that this essential aspect of constructional meaning has to be recognized as a pivotal factor in grammaticization.

2. Comparison

Construction Grammar and Cognitive Grammar have basically developed in parallel, arriving independently at a number of theoretical positions that are essentially equivalent. I will leave to those concerned a description of the genesis and chronology of Construction Grammar. As for Cognitive Grammar, research began in the spring of 1976. It was prompted by the realization that the competing linguistic theories at that time (the era of the 'linguistics wars') were missing most of what seemed essential to language. In terms of theoretical formulation, I deemed it necessary to jettison everything and start from scratch. The basic ideas were in place within two or three years, and were first presented in publications appearing in 1981 and 1982. During the intervening decades they have been greatly expanded and articulated, but I can honestly

say that there have been no fundamental changes (apart from the name, originally Space Grammar). I can also honestly say (for the historical record) that I have never consciously adopted anything from Construction Grammar. I do of course acknowledge and welcome the numerous points of theoretical convergence.

Although Cognitive Grammar (Langacker 1987a, 1990, 1991, 1999a) is not particularly close to any other theoretical framework, it is closest to Construction Grammar. Some evident similarities between the two CG's include the following: (i) The frameworks are non-derivational ('monostratal'). (ii) Constructions (rather than 'rules') are the primary objects of description. (iii) Lexicon and grammar are not distinct components, but form a continuum of constructions. (iv) Constructions are form-meaning pairings ('assemblies of symbolic structures'). (v) Information structure is recognized as one facet of constructional meanings. (vi) Constructions are linked in networks of inheritance ('categorization'). (vii) Regularities (rules, patterns) take the form of constructions that are schematic relative to instantiating expressions. (viii) Apart from degree of specificity/schematicity, expressions and the patterns they instantiate have the same basic character. (ix) Linguistic knowledge comprises vast numbers of constructions, a large proportion of which are 'idiosyncratic' in relation to 'normal', productive grammatical patterns. (x) A framework that accommodates 'idiosyncratic' constructions will easily accommodate 'regular' patterns as a special case (but not conversely). (xi) Well-formedness is a matter of simultaneous constraint satisfaction. (xii) Composition is effected by 'unification' ('integration').

Despite these many similarities, the two frameworks are not the same. Let me briefly note a few points of divergence. I am not going to dwell on them, nor is this the place to lay them out carefully or advance any serious arguments. Whether they are immutable differences based on deep principles of Construction Grammar, or simply matters of emphasis subject to future adjustment, I must leave for others to assess. For sake of manageability, I will limit my discussion to the version of Construction Grammar presented in Goldberg (1995). The first point of divergence is *generativity*.

> Construction Grammar is generative in the sense that it tries to account for the infinite number of expressions that are allowed by the grammar while attempting to account for the fact that an infinite number of expressions are ruled out or disallowed. (Goldberg 1995: 7)

This statement appears to contradict a fundamental conception of Cognitive Grammar. The latter does not view the "grammar" of a language as

a generative or constructive device that is itself responsible for assembling expressions – that is something which *speakers* do, drawing on all available resources. It is not at all evident that the resources considered to be 'linguistic' are well delimited or form a coherent group in opposition to others. To the extent that we reify this set of cognitive abilities and call it a 'grammar', it is merely a *structured inventory of conventional units* available for exploitation in speaking and understanding.

This may well constitute a difference between Cognitive Grammar and Construction Grammar, but to appreciate its nature we must distinguish two separate issues that are conflated in Goldberg's statement, namely *generativity* and *well-formedness* (or 'conventionality'). They are not at all the same, despite their close association in classical generative theory (where algorithmic enumeration by a grammar was conceived as providing an account of 'grammaticality'). Construction Grammar and Cognitive Grammar agree on the need to give an account of well-formedness. If there is a difference, it pertains instead to generativity.

It is sometimes maintained that Cognitive Grammar is incapable of distinguishing between well-formed and ill-formed expressions. For instance, Brugman (1988: 15) states that "Construction Grammar ... account[s] for nonoccurring as well as occurring strings (which makes it different from Cognitive Grammar)". This view is simply erroneous, and in various basic works (1987a: Ch. 11, 1988a, 2000) I have spelled out explicitly (albeit programmatically) how Cognitive Grammar makes the distinction. In brief, it accounts for well-formedness in the context of processing in a dynamic interactive system. Facets of expressions evoke linguistic units to effect their categorization. Units compete with one another for the privilege of being activated as the categorizing structure, based on such factors as entrenchment, contextual priming, and degree of overlap with the target. The full set of categorizations effected constitute an expression's structural description (its interpretation with respect to the linguistic system). The expression is well-formed (conventional) to the extent that the categorizations involve elaboration (as opposed to extension).

Goldberg's statement above recalls the rhetoric of early transformational grammar. According to a mantra of that era, the generative grammar of a language is an algorithmic device enumerating all and only the grammatical sentences of a language (giving them as 'output'). The trouble is, generative grammar itself has largely abandoned the commitment to generativity in this sense. It is not at all evident that the 'grammatical sentences of a language' constitute a well-defined set. This is especially true if one accepts that 'grammaticality' or 'well-formedness' (what the grammar 'allows') depends on meaning

as well as form. In fact, one must ask what constitutes a 'sentence' or 'expression' with respect to this notion of generativity. Does it include a representation of the expression's meaning? I certainly take it as including both meaning and form, and it seems to me that by its nature Construction Grammar would have to do so as well. If so, Construction Grammar would appear to be committed to the view that a precise boundary can be imposed between linguistic and extralinguistic meaning, and that the former is well-defined, determinate, or algorithmically computable. I would argue that this is not the case, indeed it runs counter to the whole thrust of cognitive semantics. This, however, is an issue for some other occasion (see Langacker 1998).

A related point is the relative neglect in Construction Grammar of the many dimensions of *construal* that figure so prominently in Cognitive Grammar (Langacker 1993). I note that Goldberg (1995: 44–49) at least mentions the notions of *profiling* and *participant prominence* (trajector/landmark alignment). She does not however explicate them thoroughly, exploit them systematically, or ascribe to them the fundamental importance they have in Cognitive Grammar. Also downplayed in Construction Grammar are the various kinds of *imaginative* phenomena extensively investigated in cognitive semantics: metaphor, metonymy, mental spaces, blending, fictivity (Fauconnier 1985, 1997; Fauconnier & Sweetser 1996; Fauconnier & Turner 1998; Lakoff & Johnson 1980, 1999; Langacker 1999b; Talmy 1996). I doubt that this is a matter of deep-seated principle. Yet from my standpoint, these phenomena are so essential to meaning, and meaning so essential to grammar, that their relative non-visibility in Construction Grammar is a difference worth noting. If they were pivotal to the enterprise rather than peripheral, the claim of generativity might seem less plausible.

The next issue concerns some basic elements of grammatical description. Cognitive Grammar makes the radical claim that fundamental and universal grammatical constructs – notions like noun, verb, subject, and object – can be characterized conceptually, not just in terms of a prototype, but schematically (abstract definitions valid for all instances). This is not the place to present or argue the claim (see Langacker 1987b, 1999c, 2001). I merely want to observe in passing that Construction Grammar makes no such claim. Eschewing a conceptual characterization of these constructs amounts to according them the status of *irreducible syntactic primitives*. Constructions then do not reduce fully to form-meaning pairings, since their characterization makes reference to elements (like N, V, SUBJ, OBJ) that are not ascribed any meaning. I am aware that such elements are commonly considered matters of form, but in Cognitive Grammar form is identified with phonological structure. The tradi-

tional view that such elements are part of 'form' makes sense only given the notion that there is such a thing as 'grammatical form' in addition to semantic and phonological structure. That is, it presupposes the doctrine of *autonomous syntax*.

In Construction Grammar, a construction is recognized only if some facet of it is unpredictable from other aspects of the grammar, including independently established constructions. A structure or expression that is fully predictable is not itself included in the grammar. This is of course a matter of definition, so on one level it cannot be quarreled with. The question, though, is whether this definition imposes an arbitrary boundary (assuming that one can even draw a line, which I find quite dubious). It excludes from the linguistic system expressions that are definitely learned by speakers ('entrenched') and established as conventional usage in the speech community, but just happen to be fully regular. But if they are learned, conventional, and employed in speaking a language, why are they not part of the language? Why should any whiff of idiosyncrasy (which might in principle be exceedingly minor) be enough to completely change the status of a fixed expression from being 'outside of' to being 'in' the grammar?

To be sure, unpredictability allows one to *demonstrate* that an expression has some independent cognitive status. But since language was not designed for the convenience of linguists, an expression might very well have such status even if there is no easy way for the analyst to demonstrate it. I cannot help thinking that this requirement is also a vestige of classical generative theory, in particular its emphasis on a psychologically implausible notion of economy summarized in the slogan 'the shortest grammar is the best grammar'. This reflects what I call the *rule/list fallacy*: the doctrine that particular statements (lists) are necessarily excluded from the grammar if general statements (rules) can be established that subsume them (Langacker 1987a). If one's objective is a correct characterization of linguistic knowledge, the issue is an empirical one, not something that can be decided a priori.

Another manifestation of what I believe to be an inappropriate notion of economy is found in Goldberg's reluctance to posit multiple verb senses correlated with different constructions:

> [...] I concur [...] that the semantics of (and constraints on) the full expressions are different whenever a verb occurs in a different construction. But these differences need not be attributed to different verb senses; they are more parsimoniously attributed to the constructions themselves.
>
> (Goldberg 1995: 13)

Let me first acknowledge the correctness and importance of Goldberg's demonstration that constructions have meaning and that sometimes verbs are employed in constructions where they do not belong in terms of their own inherent meaning. I certainly agree (to take an example at random) that *sneeze* lacks a conventional caused-motion sense, and that the caused-motion sense in (1) is contributed by the construction rather than the verb itself.

(1) He sneezed the napkin off the table.

The question is how far to push this. Consider (2):

(2) Mia kicked the ball into the stands.

Does *kick* have a caused-motion sense, such that *into the stands* elaborates the path it evokes schematically? I suggest that this case differs from the example with *sneeze* in that the occurrence of *kick* in this construction is entrenched and conventional. As someone who has played, coached, and watched a lot of soccer, I am fully confident that I have heard such expressions many, many times, and that in producing (2) I was not doing anything not fully sanctioned by established linguistic convention.

What does this say about the meaning of *kick*? Does *kick* have a caused-motion sense, granting the conventionality of its use in this frame? Goldberg (1995: 11) intimates that this aspect of the total meaning derives from the construction and need not be ascribed to the verb. This cannot however be established on a priori grounds of parsimony. Nor on the cited grounds of avoiding circularity: whether or not we, as analysts, presently have independent evidence for positing a distinct sense, the question of whether speakers, as part of their knowledge of the language, develop such a sense remains an empirical one. It cannot, however, be investigated empirically until we have a clear conception of what is at stake. It must first be understood just what it means to say that a lexical item 'has' a certain 'sense'.

In the *usage based* perspective of Cognitive Grammar (Langacker 2000), linguistic units are abstracted from *usage events* by the reinforcement of recurring commonalities. Lexical items occur in particular contexts – which for our purposes can be identified as structural frames, or constructions – and their recurrence in a set of such contexts provides the basis for their acquisition. Verbs in particular derive their meanings in the first place as integral parts of constructions, so they are naturally interpreted as having semantic values that mesh with them. If a verb has any construction-independent meaning at all, this only arises by further abstraction from the more specific senses it assumes in the particular constructions that spawn it (cf. Tomasello 1992). On this ac-

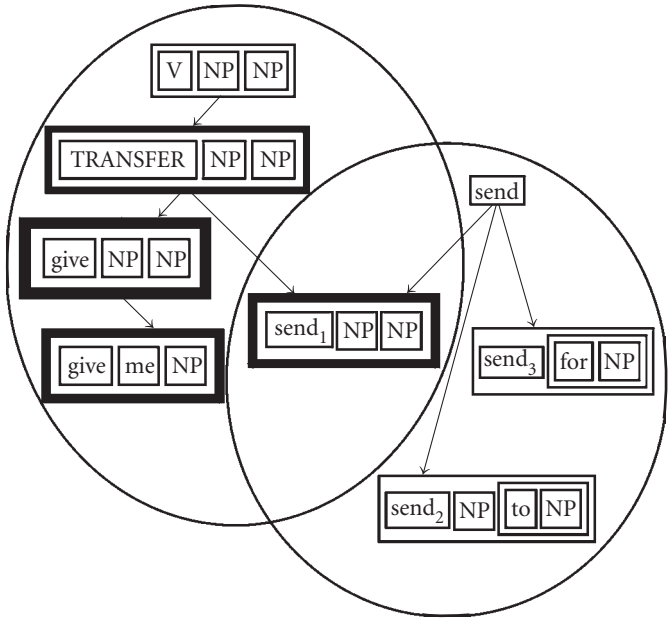

Figure 1. Network of schematizations

count, regular occurrence in a particular construction either implies or tends to induce an entrenched interpretation consistent with it.

In my usage based perspective, verbs and verbal constructions do not develop independently, but represent different directions of abstraction (or *schematization*) from complex expressions. It thus seems perfectly reasonable that particular semantic properties of those expressions, e.g. the caused-motion facet of (2), should inhere in both. As concrete illustration, consider the network in Figure 1, depicting some of the schemas plausibly ascribed to speakers of English. In the ellipse on the left are various constructional schemas abstracted from ditransitive expressions.[1] In the ellipse on the right are various schemas abstracted from expressions with the verb *send*. On this account, the lower-level structures – where *send* occurs in particular structural frames, with meanings (*send*$_1$, *send*$_2$, *send*$_3$) appropriate to those frames – are developmentally basic. If the usage based approach (Barlow & Kemmer 2000) is taken seriously, it is not the existence of a particular variant like *send*$_1$ that comes into question, but whether a construction-independent schema ever arises at all.

Observe that the schema given as [[send$_1$][NP][NP]] appears in both ellipses. It is pointless to ask whether this structure belongs to the network for

the ditransitive construction, or to the one representing the meanings and uses of *send*. Clearly it belongs to both, providing one basis for arguing that lexicon and grammar form a continuum. It is equally pointless to ask whether the specific semantic properties distinguishing $send_1$ from the other variants derive from the ditransitive construction or inhere in this lexeme itself. These properties inhere in the abstracted structure [[send$_1$][NP][NP]], which is part of a full characterization of both the construction and the lexeme. When a lexical item routinely and conventionally occurs in a particular grammatical frame implying a particular way of construing its content, that way of construing its content constitutes – *ipso facto* – an entrenched and conventional lexical sense. I would say, then, that the established and frequent ditransitive use of *send* implies the existence of $send_1$ as a conventional meaning of the verb. Likewise, though with lesser frequency and entrenchment, the use of *kick* in expressions like (2) implies that this verb has an established caused-motion sense conventionalized to some degree. *Sneeze* does not, although the frequent occurrence of (1) in theoretical discussions may induce its emergence among linguists.

3. Basic notions of Cognitive Grammar

In comparing Cognitive Grammar and Construction Grammar, my intention was merely to raise certain theoretical issues. Though I have certainly not resolved them, we must now proceed to the main agenda. Let us start by quickly reviewing some of the concepts and notations employed in Cognitive Grammar for describing constructions.

The theory's central claim is that lexicon and grammar form a continuum consisting solely of *assemblies of symbolic structures*. A symbolic structure is simply the pairing of a *semantic structure* and a *phonological structure* (its two *poles*). Semantic structures consist of both conceptual *content* and the *construal* imposed on that content. Our capacity to construe the same situation in alternate ways comprises such factors as the *perspective* adopted, the *prominence* accorded various elements, and characterization at a certain level on the scale of *specificity/schematicity*. Particularly relevant for our purposes are two kinds of prominence.

One kind of prominence is *profiling*. Within the extent of the conceptual content it evokes – its *base* – an expression directs attention to a particular substructure, called its *profile*, characterized as the entity the expression is construed as designating (its conceptual referent). Expressions evoking the same conceptual base can nonetheless differ in meaning by virtue of imposing dif-

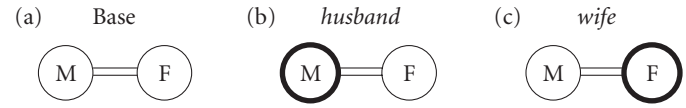

Figure 2. Profile and base

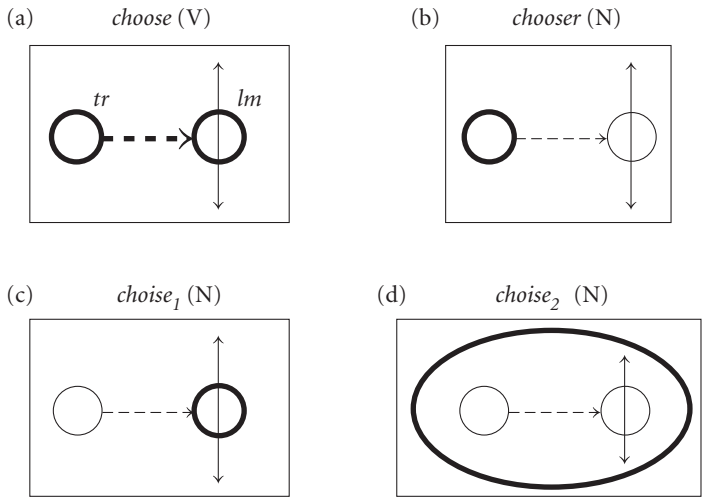

Figure 3. Profiling options

ferent profiles on it. A case in point is the semantic contrast between *husband* and *wife*, sketched in Figure 2. As its base, each evokes the conception of a male (M) and a female (F) linked in a marriage relationship (represented by the double lines connecting them). The primary difference in their meanings resides in profiling – indicated diagrammatically by heavy lines – not in their overall content.

A more elaborate example is given in Figure 3. The verb *choose*, in (3a), profiles a relationship that develops through time. It has two focused participants (given as circles). One participant initiates mental activity (dashed arrow) that serves to single out the other participant from a range of alternative possibilities (vertical arrow). Diagrams (b)–(d) represent different nominalizations of this verb. Rather than profiling the relationship, the noun *chooser* designates the actor. In one of its senses, *choice* profiles the entity singled out. *Choice* can also designate one instance of the act of choosing (e.g. *make a choice*), construed as an abstract object. In Figure (3d) this conceptually reified event is shown as an ellipse.

An expression's grammatical class is not determined by its overall conceptual content, but specifically by the nature of its profile. A noun profiles a *thing*, abstractly defined (Langacker 1987b). A verb profiles a *process*, defined as a relationship scanned sequentially in its evolution through time. Such classes as adjectives, adverbs, and prepositions profile relationships that are *non-processual* ('atemporal' in the sense that evolution through time is not in focus). As abbreviatory notations, circles (or ellipses) are generally used for things, and various kinds of lines and arrows for relationships.

When a relationship is profiled, its participants are made prominent to varying degrees. The most prominent participant, called the *trajector* (*tr*), is construed as the entity being located, evaluated, or described. It is the primary focus ('figure') within the profiled relationship. Often another participant is made prominent as a secondary focus. This is called a *landmark* (*lm*). In the case of *choose*, for instance, the actor is put in focus as trajector, and the object chosen as landmark (Figure (3a)).

Expressions can have the same content, and profile the same relationship, but differ in meaning due to contrasting choices of trajector and landmark. Consider *above* and *below*, diagrammed in Figure 4. Obviously they are semantically distinct. Where, however, does the difference in meaning reside? They have the same content: that of two things at different positions along the vertical axis, but roughly the same location in the horizontal plane. Moreover, they profile the same relationship involving these two things – an expression's profile is what it refers to within the conceptual base, and referentially an *above* relationship is also a *below* relationship. The semantic distinction must therefore have some other source, the only plausible candidate being the degree of prominence conferred on the relational participants. In the case of *above*, the trajector (the entity being characterized) is located with respect to a landmark

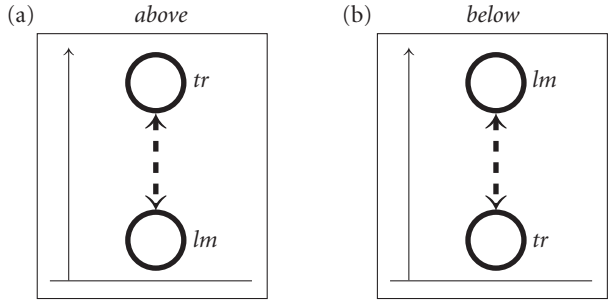

Figure 4. Trajector/landmark alignment

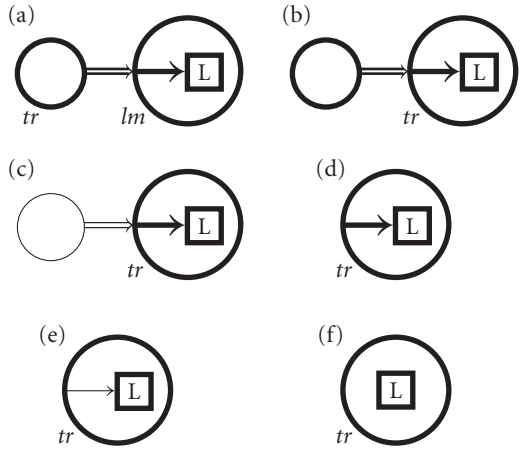

Figure 5. Further exemplification of descriptive constructs

at a lower position along the vertical axis, whereas *below* displays the opposite trajector/landmark alignment.

Further exemplification is provided by the examples in (3), respectively diagrammed in Figure 5. At issue are the elements in boldface: the transitive verb *melt*, the passive *be melted*, the intransitive *melt*, the stative-adjectival participle *melted*, and the adjective *liquid*.

(3) a. The fire will **melt** it.
b. It will **be melted** by the fire.
c. It should **melt** easily.
d. It may **melt** in the heat.
e. It is finally **melted**.
f. It is now **liquid**.

As a transitive verb, *melt* profiles an event of causation (double arrow) which induces the landmark to undergo an internal change (single arrow) resulting in its exhibiting the state (box) of being liquid (L). The passive *be melted* evokes precisely the same content and profiles the same relationship. What differs is trajector/landmark alignment: trajector status is conferred on the patient rather than the causer, the latter being defocused (Shibatani 1985). The intransitive *melt* profiles only the change of state, hence there is only one focused participant, which by definition is the trajector. With the intransitive, the act of causation is optionally present (or present with varying degrees of salience) as an unprofiled facet of the base. An adverb like *easily*, in (3c), evokes the

conception of an agent who experiences a low level of effort in carrying out the action. The overall content in (3d) serves to background any notion of agentivity, and while heat is understood as causing the melting (given our knowledge of the world), it is not portrayed as such, but rather as an abstract location.

Whereas the intransitive *melt* profiles a change of state, the participle *melted* profiles only the state that results. In contrast to the heavy-line arrow in Figure (5d), consequently, in (5e) we find a thin-line arrow. This indicates that the change of state, while included in the conceptual content evoked, remains unprofiled. It has to be included, for something is properly characterized as *melted* only if it has undergone the process of melting. Since only the resultant state is profiled (not the change), and profiling determines grammatical class, *melted* is not a verb but a kind of adjective.[2] Observe that, in terms of their profiles, *melted* and the adjective *liquid* are identical: each profiles the state in which the trajector exhibits the property of being liquid. The difference in their meaning resides in an unprofiled facet of the base. Specifically, the process of melting, obligatorily evoked by *melted*, is optional and non-salient in the case of *liquid*, which merely presents the state as such.

Having considered individual symbolic structures, let us now turn to symbolic *assemblies*, or constructions. First a terminological point: my use of the term *construction* is broader than in Construction Grammar. As I employ it, any symbolically complex expression – be it fixed or novel, regular or irregular – constitutes a construction. I also apply the term to any schematic pattern for assembling complex expressions (as well as a network of constructional variants).

Canonically, a minimal construction – representing a single level of organization – consists of two *component structures* which are *integrated* to form a *composite structure*. As seen in Figure 6, these structures are linked by *correspondences* (dotted lines) and relationships of *categorization* (arrows). Here the component structures are the preposition *near* and the noun phrase *the door*. As a preposition, *near* profiles a non-processual relationship between two focal participants, its landmark being a thing. I have merely depicted the trajector as being in the landmark's neighborhood (represented as an ellipse). As a nominal expression, *the door* profiles a thing. Its meaning is not the picture shown, which is just a mnemonic abbreviation for an elaborate set of semantic specifications.[3] These two component structures are integrated by virtue of a correspondence between the schematic landmark of *near* and the profile of *the door*. If we use the metaphor of composition, we can describe the composite structure as being formed from its components by superimposing corresponding elements and merging their specifications ('unification'). Using

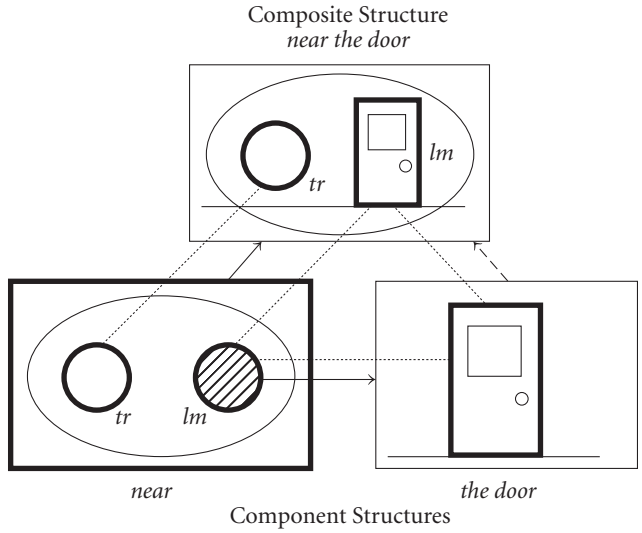

Figure 6. Minimal construction

more neutral language, we can say that elements of the composite structure are linked to component structure elements by 'vertical' correspondences.

It is usual for the composite structure to inherit its profile from one of the components. In the case of *near the door*, the composite expression profiles the same spatial relationship as the preposition *near*. The component structure which contributes its profile to the composite whole is called the *profile determinant*. Diagrammatically, it is enclosed in a heavy-line box. The *head* at a given level of grammatical organization can be characterized as the profile determinant at that level. The preposition is thus the head in a prepositional phrase.

It is also usual for one component structure to contain a schematic substructure corresponding to the profile of the other component structure, which specifies it in finer-grained detail. In Figure 6, the schematic landmark of *near* corresponds to the profile of the nominal, which provides a more elaborate semantic characterization of this entity. The schematic substructure thus elaborated is called an *elaboration site* (or *e-site*), marked by hatching. This elaboration of the e-site by the other component structure is represented by the solid horizontal arrow. Elaboration is the same as *instantiation*, one kind of categorizing relationship (Langacker 1991: 2.2.3). We can further think of the component structures as categorizing the composite structure (i.e. as inhering in it and motivating it to varying degrees). Because they agree in profiling, the

categorizing relation between *near* and *near the door* is one of elaboration or instantiation (solid arrow). On the other hand, since *the door* and *near the door* have conflicting profiles, the relation between them is one of *extension* (dashed arrow) rather than simple elaboration.

In later diagrams, I will often simplify by omitting indications of profile determinance, categorization, and e-sites. Also, the composite structure may be suppressed when the primary concern is with how the components are integrated. Yet all these factors are understood as being part of a construction's full characterization.

Near the door is a specific expression, assembled in the manner shown in Figure 6. Grammar consists of schematized patterns for assembling complex expressions. Patterns of composition are described by *constructional schemas*, i.e. schematic symbolic assemblies representing whatever commonality is observable across a set of symbolically complex expressions. Constructional schemas serve as templates for the construction and evaluation of novel expressions. The schema for the prepositional phrase construction is sketched in Figure 7. It is the same as Figure 6, except that the symbolic structures are represented schematically, abstracting away from the distinguishing content of particular prepositions and noun phrases. Preserved in the schema, because they are constant across instantiating expressions, are such factors as class membership, correspondences, categorizing relationships, and profile determinance.

A symbolic assembly exhibits a kind of *constituency* when the composite structure at one level of organization (in one construction) functions in turn as component structure at a higher level of organization (in a higher-order construction). In Figure 8, representing a simple finite clause (ignoring tense), the symbolic structure *admires Bill* functions simultaneously as composite struc-

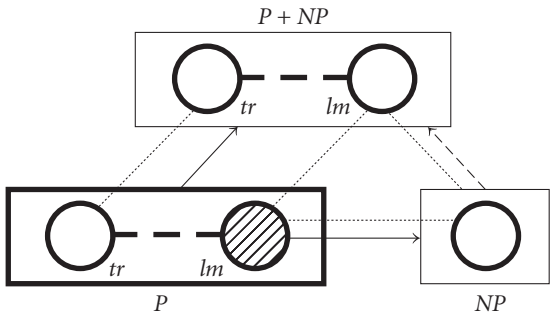

Figure 7. Constructional schema

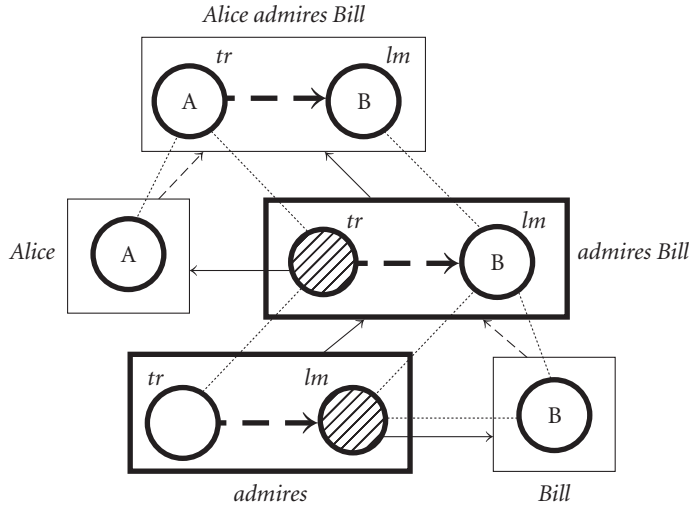

Figure 8. Constituency

ture with respect to *admires* and *Bill*, and as component structure (along with *Alice*) with respect to *Alice admires Bill*. Observe that *admires* is the profile determinant in the lower construction, and *admires Bill* in the higher one, since the process of admiring (given as a dashed arrow) is profiled at each level.

Though constituency certainly exists, and is accommodated in the manner indicated, it is viewed in Cognitive Grammar as being flexible, often variable, and grammatically non-essential (Langacker 1995, 1997). Alternate constituencies are commonly observed and can perfectly well yield the same overall composite structure. Starting from the same components (*Alice*, *admires*, and *Bill*), the composite structure in Figure 8 could equally well be obtained with the alternate constituency ((*Alice admires*) (*Bill*)) or even ((*Alice*) (*admires*) (*Bill*)). What counts, instead, are correspondences and the composite structure profile. Grammatical dependencies reside in correspondences, and variation in constituent structure does not preclude the same conceptual elements from corresponding (either directly or indirectly, taking both 'horizontal' and 'vertical' correspondences into account).

In particular, a *subject* relation resides in a correspondence between the profile of a nominal expression (a thing) and the *trajector* of a profiled relationship. In Figure 8, *Alice* is thus the subject with respect to *admires*, *admires Bill*, and *Alice admires Bill.* Similarly, an *object* relation resides in a correspondence between the profile of a nominal expression and the *landmark* of a profiled relationship. Hence *Bill* is the object with respect to all three levels. It is read-

ily seen that these relationships are independent of the constituency hierarchy followed in building up to the composite expression.

4. Degree of conceptual integration

Correspondences between component structures represent *conceptual overlap*. They indicate that the corresponding entities each project to the same entity in the composite conception. Component structures should not be thought of as building blocks stacked together to form the composite structure, but as overlapping fragments of the composite conception artificially extracted from the whole for purposes of linguistic symbolization. Unlike a mosaic, where the individual stones are non-overlapping and exhaust the whole, a construction is like a collage, where pieces do overlap and areas of the canvas are often left blank. The component conceptions *evoke* the whole, and *motivate* it to varying degrees (reflected in the categorization arrows), but they do not *constitute* it.

Typically the correspondences hold between salient substructures of the two components, notably the profile or a focal participant. Figures 6-8 are canonical in this respect. In each case, only a single correspondence is involved, and each component structure has substantial conceptual content in addition to the entity that corresponds. Often, however, a construction exhibits tighter conceptual integration between component structures, a greater degree of conceptual overlap relative to their full semantic values. Diagrammatically, this can either be reflected in multiple correspondences, or else in an elaboration site constituting a greater proportion of a component conception (even its totality). Tighter conceptual integration is characteristic of elements considered grammatical (as opposed to lexical). As such, it is relevant to the historical process of grammaticization. One typical aspect of grammaticization is an increase in conceptual overlap between component structures.

A derivational morpheme like *-er* (as in *complainer*, *cheater*, *blender*, *printer*, *teacher*, etc.) illustrates the extreme case, that of full overlap, where the schematic elaboration site is exhaustive of one component structure. This is shown in Figure 9, where a horizontal arrow stands for time (*t*), a bar along that arrow represents sequential scanning through time, and a vertical line stands for the relationship a trajector bears to some other entity. In its prototypical value , *-er* evokes a schematic process as its base and profiles its trajector (for a more comprehensive picture, see Ryder 1991). The entire schematic base, consisting just of that process, functions as elaboration site, being elaborated by the verb stem. The suffix is thus a schematic noun (for it profiles a thing), and

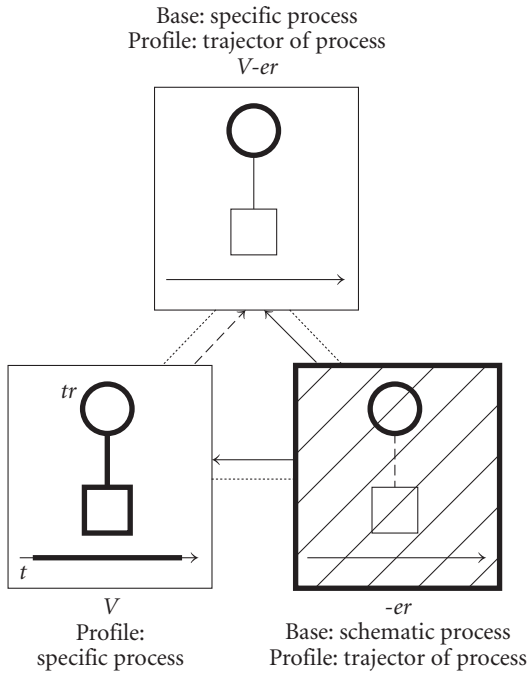

Figure 9. A nominalization pattern

since it imposes its profile on the composite structure, the derived expression is also a noun. Hence the semantic contribution of *-er* resides in its role as profile determinant, profiling being a matter of construal (prominence) rather than content.

Note that the choice of profile determinant is a function of the construction as a whole, not of individual components. It is specified as part of the constructional schema serving to characterize the construction. Above and beyond the meanings of the component elements, this facet of the construction's semantic value resides in the configuration of the entire symbolic assembly – a matter of which component structure profile matches the composite structure profile. It is thus one aspect of *constructional meaning*.

Let me now examine a case where each component structure has substantial content not subsumed by the content of the other. Tighter conceptual integration (greater overlap) is then reflected in multiple correspondence lines.[4] The example is one I first used long ago (Langacker 1968). It concerns body-part nouns functioning as direct objects in Romance languages. When such nouns occur with the definite article, hence with no possessive marking, they

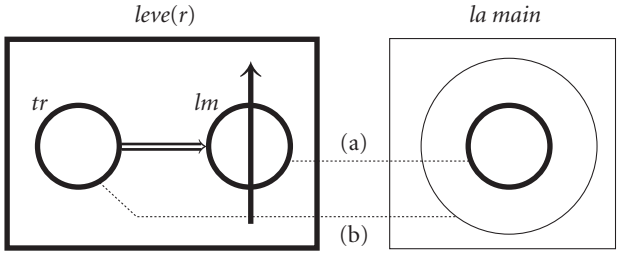

Figure 10. Direct object construction with body-part nouns

are normally interpreted as being possessed by the subject. In the transformational era, examples like (4) were naturally analyzed by positing a deep structure in which the object contained a possessor pronoun, subsequently deleted transformationally by virtue of coreference to the subject NP.

(4) a. *Elle lève la main.* 'She raises the [= her] hand.'
b. *J'ouvre les yeux.* 'I open the [= my] eyes.'
c. *Il ferme la bouche.* 'He closes the [= his] mouth.'

I have generally presented this construction with a diagram like Figure 10. The verb in (4a) profiles an act of causation, whereby the trajector induces upward motion by the landmark. The noun phrase object profiles a thing characterized as part of the body (represented by the outer circle). Two correspondences are indicated, labeled (a) and (b). On one interpretation, the construction only includes correspondence (a). This constitutes a normal instance of the direct object construction (see Figure 8), involving the typical degree of conceptual overlap between component structures. On this construal, (4a) might be used, for example, when the subject raises up the hand of a statue, perhaps with a crane, to move it into place. The hand and the force exerted may be totally external to the subject referent.

Far more likely, however, is the interpretation whereby the subject raises her own hand in the canonical manner. The expressions in (4) instantiate an entrenched subschema of the direct object construction. This subschema requires that the object noun phrase be a body-part expression marked with the definite article. Another feature of this subconstruction is correspondence (b), which identifies the body containing the profiled body part with the verb's trajector. This represents a tighter conceptual overlap – a higher degree of conceptual integration – between the two components. With only correspondence (a), the composite structure is the one shown in Figure (11a). Adding correspondence (b) produces the composite structure in Figure (11b). The

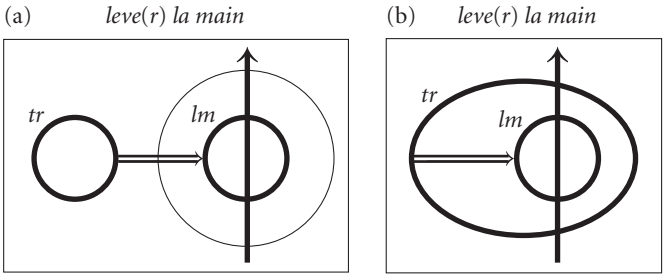

Figure 11. Composite structures with body-part objects

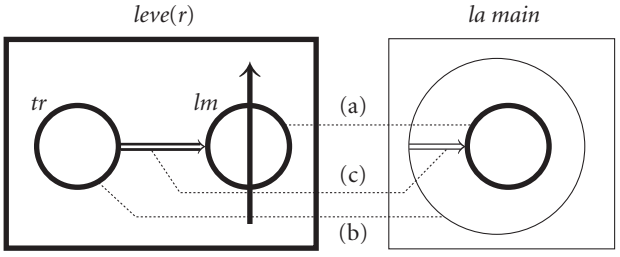

Figure 12. Further conceptual integration

extra correspondence is a facet of constructional meaning: not inherent in either component structure, it is rather a matter of how they are connected in a larger symbolic assembly. This additional correspondence, notationally so unobtrusive, has drastic consequences for semantics and grammar.[5]

There is more, however. On the construal incorporating correspondence (b), the expressions in (4) do not just specify the subject referent as being the individual whose body part moves. Additionally, as seen in Figure (11b), the movement is understood as involving the *internal transmission of energy*, which, moreover, effects the movement in the manner *characteristic* of the body part in question, given standard cognitive models. Sentence (4a) can therefore not be used when one arm lifts the other, or when the subject pushes a button to activate a hoist which lifts an arm. Correspondence (b) alone is not enough to impose these restrictions. As shown in Figure 12, this subconstruction must also incorporate a third correspondence, (c). Its effect is to identify the exertion of force evoked by the verb with the canonical, internal exertion of force evoked as part of the meaning of the body-part expression. This represents an even higher degree of conceptual integration.

Extensive conceptual overlap is characteristic of so-called 'agreement' phenomena. Agreement is basically the multiple coding of the same specification. Since it is quite variable in specifics, the single example I will discuss cannot be taken as fully representative (see also Langacker 1988b). It does however afford an idea of this essential dimension of conceptual overlap in an area considered 'grammatical' as opposed to 'lexical'.

The specific illustration concerns postpositional endings in Luiseño, a Uto-Aztecan language of southern California. When an adjective modifies a noun marked with a postposition, as in (5), the same postposition occurs on the adjective, redundantly. Being redundant is not however the same as being meaningless (as agreement markers are sometimes claimed to be). It is rather a matter of overlapping meaning (often quite abstract). But all grammatical constructions involve semantic overlap. So-called agreement merely carries this farther than what is thought to be normal or necessary.

(5) a. *ki-nga* *yawaywi-nga*
house-in pretty-in
'in the pretty house'
b. *palvun-ik* *konokni-yk*
valley-to green-to
'to the green valley'

A constructional schema for expressions of this sort is sketched in Figure 13. The ultimate component structures, shown at the bottom, include: a noun, which profiles a thing (X abbreviates any additional semantic specifications); two occurrences of a postposition (which profiles a non-processual relation with a thing as landmark); and an adjective, which ascribes some property (Y) to its trajector. The lower-level construction depicted on the left is the regular postpositional object construction, where the noun elaborates the postposition's schematic landmark (cf. Figures 6–7). Depicted on the right is the lower-level construction in which a postposition combines with an adjective. This is effected by a correspondence between postposition's landmark and the adjective's trajector. In each case the postposition serves as profile determinant, so each intermediate-level composite structure profiles a non-processual relationship with a partially specified thing as landmark – in the first instance it is specified as having the semantic features labeled X, and in the second as having property Y.

At a higher level of organization, these two composite structures function in turn as component structures integrated to form the overall expression. Here there is complete overlap of the profiled entities: the postpositional relation-

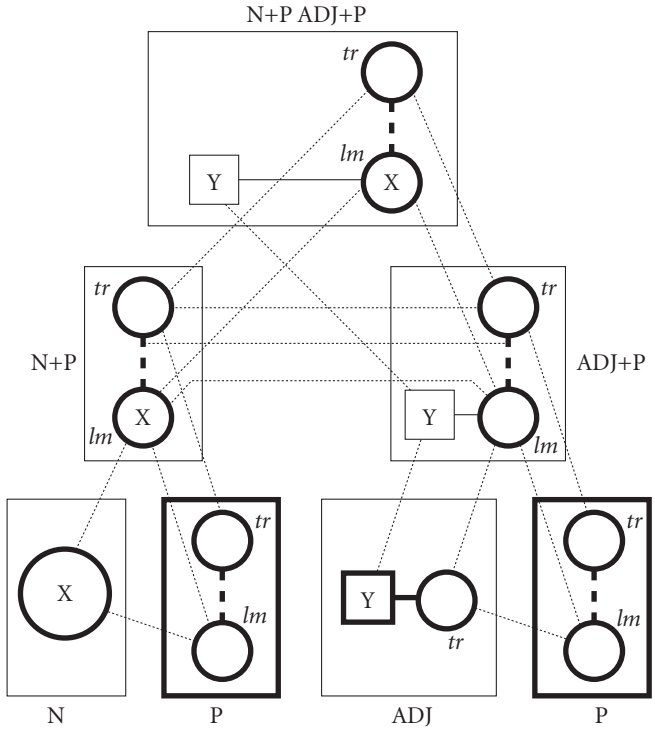

Figure 13. A case of agreement

ships are identified, so their trajectors and landmarks are as well. Hence the full expression designates this same relationship, and further characterizes its landmark as a thing of type X with property Y. Observe that the thing in question plays a role in all four component structures: as the profile of the noun, as the trajector of adjective, and as landmark in each occurrence of the postposition. At the composite structure level, however, all four collapse into one, as do the two occurrences of the profiled relationship.

5. Import for grammaticization

"Lexical" meanings are usually fairly specific and often "encyclopedic" in scope (Haiman 1980; Langacker 1987a: 4.2; cf. Wierzbicka 1995). By contrast, the meanings of elements considered "grammatical" are generally quite schematic and more narrowly circumscribed. In view of their rarified content, it stands

to reason that grammatical elements would exhibit a lesser degree of semantic independence. Their conceptual overlap with co-occurring structures tends to represent a greater proportion of their content (even the totality). In the constructions specifying their combination with other elements, this tighter conceptual integration shows up in the form of multiple correspondences and/or more inclusive elaboration sites. These factors must therefore be relevant for the study of grammaticization. As lexical items evolve into grammatical markers, semantic "bleaching" can leave an e-site stranded as the sole or primary content, or a new correspondence may collapse conceptual elements that were previously distinct. We will consider just two examples, both interesting in their own right: the verb *do*, and the development of a quotative marker into a kind of complementizer.[6]

English *do* occurs as both a main verb and an "auxiliary verb" (for a characterization of this latter notion, see Langacker 1991: Ch. 5). While the auxiliary is obviously more highly grammaticized, the main verb *do* also displays a high degree of conceptual overlap with its complement. From the typical examples in (6), we see that grammatically its complement is a noun phrase, while semantically it refers to an event. The main verb *do* thus takes for its landmark an abstract thing derived from an event via conceptual reification.

(6) He did {a study/a dance/something/it}.

Two further properties are crucial. First, the main verb *do* ascribes to its trajector a certain measure of causation or responsibility (Ross 1972). While this requirement is rather weak, and many factors influence the construal of particular examples, we can at least observe that expressions like those in (7) tend to be infelicitous:

(7) a. *The water did some evaporation.
b. *What Sam did was be born.
c. *The vegetables finished cooking before the quiche did it.

Second, *do* identifies its trajector as the one who carries out the reified landmark event. It is by carrying out this event that the trajector manifests its responsibility. While this may seem obvious, it is not automatic but rather symptomatic of a special degree of conceptual overlap.

We can usefully contrast *do* with a verb like *cause*, which also indicates that its subject is responsible for the occurrence of an event expressed by its complement. In (8a), *it* refers back to Bill's quitting. The thing to notice is that the quitting and the causation are basically distinct – Joe's causation constitutes an event above and beyond that of Bill's quitting. This is sketched in Figure (14a).

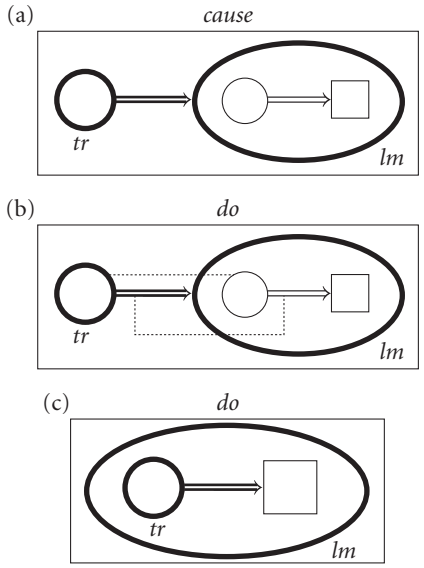

Figure 14. *Do* as a main verb

The double arrow in bold represents the profiled act of causation. Its landmark is an abstract thing consisting of the reification of an event, which may itself involve an act of causation on the part of the causee (e.g. the volitional act of Bill quitting). What the causee induces (e.g. Bill becoming unemployed) is given as a box.

(8) a. Bill quit. Joe caused it.
b. Bill quit. He really did it.

Compare this to (8b). The verb *do* specifically identifies its trajector as the individual who carries out the process induced. Furthermore, in (8b) the doing is not a distinct event above and beyond the quitting – the quitting *is* the doing. The meaning is not that Bill did something and that this induced the quitting – rather, the doing *constitutes* the quitting. The examples in (9) are further evidence for this contrast between *cause* and *do*.

(9) a. Joe caused something, namely (he caused) Bill's quitting.
b. *Bill did something, namely (he did) his quitting.
c. Bill did something, namely he quit.

Diagrammatically, the contrast is seen by comparing Figures (14a) and (14b). In both cases, the landmark is a reified event. That event itself comprises (optionally in the case of *cause*) some kind of action or causation (double arrow) leading to a result (given as a box). The crucial difference lies in the correspondences. In addition to the trajector of *do* corresponding to the actor of the induced action, the causative/volitional part of that action is equated with the very act of causation which *do* profiles. The doing and what is done are not distinct, but largely overlap. This overlap is indicated directly in Figure (14c), which is a notational variant of (14b). What is done, what is brought into being by the doing, includes that doing *per se*. Otherwise put, *do* highlights the causative facet of some action and reifies that action overall as its landmark.

Let us turn now to the auxiliary verb *do*, whose conceptual overlap with its complement is even greater. I am not making any particular claim about how the main and auxiliary verbs are related diachronically.[7] In particular, I am not suggesting that the auxiliary *do* derives from the main verb *do* by further grammaticization. Matters cannot be that simple, if only because the two variants participate in different constructions, with different kinds of complements. In contrast to the main verb, which takes nominal complements (as in (6)), the auxiliary *do* takes a processual (verbal) complement:

(10) a. Did he finish?
b. He DOES like her.
c. I do not see it.
d. They do.

The most we can say, then, is that the auxiliary *do* exhibits a greater degree of grammaticization than does the main verb.

Earlier we saw that the suffix *-er* shows complete conceptual overlap with its verbal complement (Figure 9). There was however a difference in profiling: what *-er* contributes to a form like *complainer* is precisely a shift in profile from the process designated by *complain* to the trajector of that process. In the case of *do* the semantic congruence is even more extreme, since – being a verb itself – *do* does not even differ in profiling from the verb it combines with. The *do+V* construction is sketched in Figure 15.

I analyze *do* as profiling a fully schematic process.[8] As with *-er*, then, the elaboration site exhausts its content. But since *do* profiles the same relationship as its complement, its semantic contribution is effectively invisible – the content and profiling of the composite expression are effectively equivalent to those of the content verb. For this reason *do* is often considered meaningless (e.g. inserted by a rule of "*do*-support"), but it is not. This is simply a case

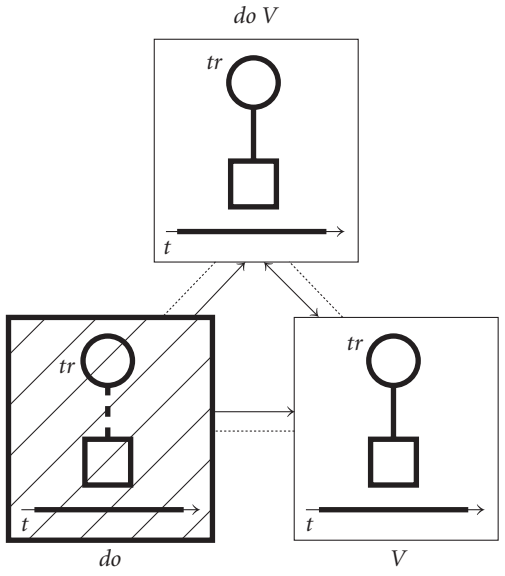

Figure 15. *Do* as an auxiliary verb

of a highly schematic meaning, and one that fully overlaps with that of a co-occurring element. Some degree of conceptual overlap is characteristic of every construction; the case of full overlap is merely the limiting case. At the extreme, the conceptual integration is so tight that the meaning of one element is wholly non-distinct from that of the more contentful element it combines with.

Of course, *do* can also occur alone, as a clausal pro form, as in (10d). Here its semantic value may be more evident, but owing to its schematicity, such expressions are not very useful unless they can be interpreted anaphorically.

My last example concerns quotative clitics in Luiseño. The data in (11) comes from Davis (1973).[9] Note that the quotative marker shows up as a clitic, *=kun(u)*, attached to the first word or constituent of a finite clause.

(11) a. *Chaam=kunu=sh 'aachich-um.*
we=QUOT=1p crazy-PL
'We are crazy, they say.'

b. *Wunal=kun moya-q.*
that:one=QUOT be:tired-TNS
'She says she is tired.'

c. *Wunal=up ṣungaal ya-qaa wunal=kun ngee-lowut.*
that:one=3s woman say-TNS that:one=QUOT leave-gonna
'That woman says he's gonna leave.'

In (11a), *=kunu* functions straightforwardly as a quotative or evidential clitic roughly glossed as 'they say/people say'. Things are not so straightforward in (11b), where the subject is specifically identified as the source of the information, nor in (11c), where the same marker appears to serve as a complementizer. With respect to this data, I am going to consider two likely stages of grammaticization. The first is the grammaticization of a quotative marker from a verb with a meaning like 'say'. Presumably this is a typical origin for a standard quotative construction like (11a). The second stage of grammaticization is the evolution of a quotative marker, primarily appearing in main clauses, into a kind of complementizer appearing in subordinate clauses. Sentences like (11c) suggest that this process is underway in Luiseño. I must emphasize, however, that this account is only speculative, as I do not have actual historical evidence concerning the form in question. I offer it provisionally to make explicit a plausible course of grammaticization suggested by the basic ideas presented here.

In this spirit, let us hypothesize an initial historical stage at which the ancestor of *=kunu* functioned as a lexical verb of saying (in the manner of *yaa* in (11c)). If it took a finite clause as complement, at this stage it would occur in sentences roughly analogous to (12a). As a special case of this type of sentence, the subject might be generalized or unspecified, as in (12b), so that the saying refers to what is said in general, rather than any specific speech event. Sentences with this generalized interpretation might further undergo some phenomenon analogous to 'parenthetical insertion', as in (12c). In such a construction, the process of saying is backgrounded both semantically and phonologically. Semantically, it loses its status as the main clause (profiled) event; in (12c) it is now the process of being unstable that is profiled by the sentence as a whole. Phonologically, the verb of saying is unaccented and positioned where it is susceptible to cliticization. From a configuration like (12c), further evolution into a cliticized quotative marker is readily envisaged.

(12) a. She said that this bridge is unstable.
b. They say that this bridge is unstable.
c. This bridge, they say, is unstable.

A sentence like (12a), which profiles an act of saying, has the structure sketched in Figure 16. I have represented the process of saying with a dashed arrow and characterized its landmark as a proposition (the semantic content of a finite clause). This schematic proposition functions as an e-site, which the subordinate clause specifies in finer detail. The specific process designated by

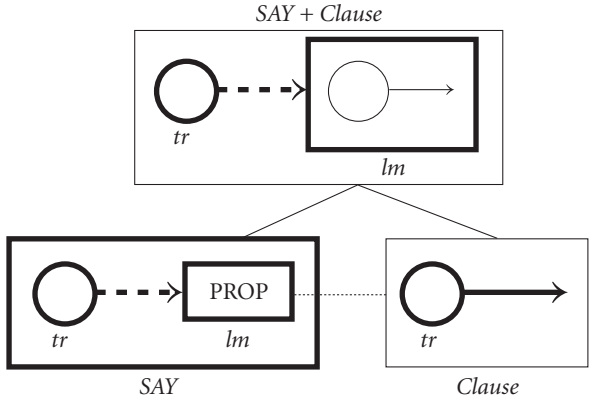

Figure 16. SAY and its complements

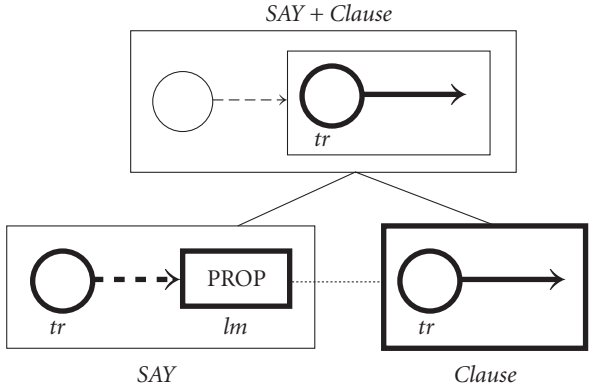

Figure 17. Inversion of profiling

the subordinate clause is shown as an arrow. In this construction SAY is the profile determinant, so the composite expression profiles the act of saying.

Next consider a sentence like (12c), where the saying is downgraded into a parenthetical qualification. At the semantic pole, the primary difference is an inversion of profiling: rather than SAY, it is the clause expressing the proposition which functions as profile determinant. This is sketched in Figure 17. The semantic contrast between expressions like (12a) and (12c) resides in constructional meaning, specifically in profiling and profile determinance. Note that the component elements in Figures 16 and 17 have the same semantic value.

Coming back to Luiseño, the clitic *=kunu* is fully grammaticized, no longer functioning as a main verb at all (if, indeed, it ever did). In the absence of verbal

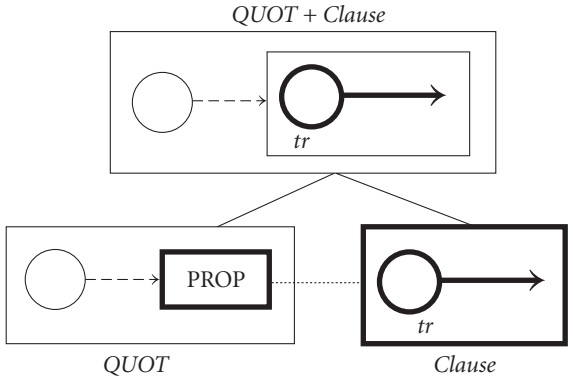

Figure 18. Quotative construction

use, we lack any further basis for positing a semantic value in which it profiles a process of saying. It is now a grammatical marker, quotative or evidential, so it probably shares a feature of such markers that is common if not characteristic: that of being schematic for the composite expression it derives. Just as *-er* is a schematic version of derived nouns like *complainer*, *printer*, etc. (Figure 9), *=kunu* might best be analyzed as schematic vis-à-vis the structure it derives, namely a finite clause bearing quotative/evidential qualification. If so, it has the value shown in Figure 18. Its profile is now limited to an abstract representation of the proposition it qualifies, i.e. it designates a schematic process elaborated by the finite clause containing it. The ascription of this proposition to a source other than the speaker is still retained, but as an unprofiled facet of the base.[10]

Next consider sentence (11b). The translation offered by Davis suggests that *=kunu* might indeed still function as a main verb. However, I am virtually certain that the translation fails to accurately reflect the grammatical structure involved. This type of gloss appears to be limited to cases where the two clauses (in the English translation) have the same subject. It is definitely a single-clause structure in Luiseño. What is going on, I suggest, is simply that the basic quotative construction is construed as involving an additional correspondence, namely the one labeled (b) in Figure 19. That is, the source of authority for the proposition expressed by the finite clause comes to be identified with the subject of that clause. This variant represents a special case of the quotative construction, with a higher degree of conceptual integration owing to the additional correspondence.[11]

Finally, we come to the use of *=kunu* in a complement clause, as in (11c), where it appears to be a kind of complementizer. Indeed, further grammati-

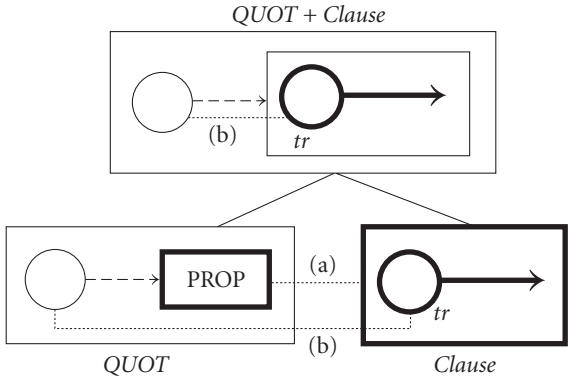

Figure 19. Quotative with subject as source

cization into a true complementizer might well be expected were the language to continue being spoken. Still, at this stage *=kunu* itself is unchanged in value. What differs is simply that it is used in a larger construction, which itself is interesting for the kind of conceptual integration it displays. We might speculate that this type of construction commonly figures as an intermediate stage in the grammaticization process.

Note that (11c) is indeed a complex sentence, the main clause verb being *yaa* 'say'. The quotative clitic *=kunu* appears in the complement clause, which profiles the process 'leave' (or 'gonna leave'). Importantly, however, the quotative force does not apply to the leaving: the translation given by Davis is not 'That woman says he's reportedly gonna leave'. The content of the proposition the woman conveys is simply 'he's gonna leave'. It thus seems evident that the reporting indicated by the quotative *=kunu* is conflated with the reporting overtly expressed and profiled by the main clause. In Figure 20, this conflation is represented by correspondences (c) and (d). Note that Figure 20 is quite similar to the basic SAY construction of Figure 16 – the only difference is the additional specification that the complement clause proposition is reported by some authority. However, because this additional specification fully overlaps with the content of the main clause, it is not separately shown at the composite structure level.

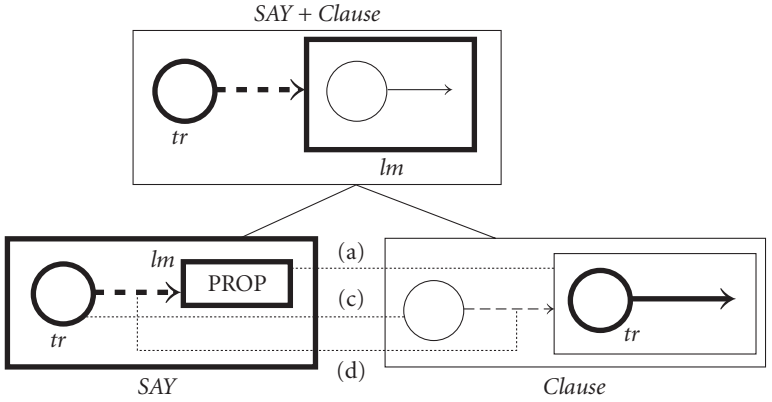

Figure 20. SAY with quotative complement

6. Conclusion

I have focused on a fundamental descriptive and theoretical issue: the nature and extent of conceptual integration among the components of a complex expression. Despite its basic importance to semantics and grammar, both synchronic and diachronic, the linguistics literature hardly abounds with explicit discussions of the matter. In part this reflects the legacy of autonomous syntax and objectivist semantics. One product of this legacy is a prevalent notion that words are 'semantic atoms', their meanings supposedly being indivisible and inaccessible for grammatical purposes. In this respect, however, the meanings of lexical and grammatical elements are not like the atoms of the ancient Greeks, but like those of modern physics, with elaborate internal structures susceptible to discovery and explicit characterization. Nothing is more essential to grammatical description than ascertaining the fine detail of these conceptual structures and the specifics of how they overlap. Conversely, grammatical description of the sort exemplified here is a crucial source of insight for semantic analysis. While correspondences are an aspect of constructional meaning, the attempt to describe them explicitly – to specify precisely which elements correspond – leads to hypotheses about the component conceptions and the particular substructures that need to be posited. Semantic and grammatical analyses are best pursued in parallel, each informing and constraining the other.

Notes

1. Solid arrows represent instantiation, and thickness of boxes corresponds to degree of entrenchment, or prototypicality.

2. An adjective profiles an atemporal relationship whose trajector is a thing and which has no focused landmark.

3. Also, to keep things simple, I am ignoring the definite article.

4. Ultimately I think this distinction is more a matter of notation than an actual difference.

5. Note that it does the work for which a special deep structure and deletion transformation had to be posited in a classical transformational account.

6. For further illustration, see Langacker (1982, 1992a, 1992b, 1999d, 2002).

7. That must be investigated in its own terms, on the basis of historical evidence.

8. Semantically it is thus equivalent to the schema defining the class of verbs.

9. Exactly analogous data from Cora, another Uto-Aztecan language, can be found in Casad (1981). A preliminary version of the present analysis appeared in Langacker (1981).

10. It is not a problem that the essential content is unprofiled – this type of situation is actually quite common. Recall that profiling represents the directing of attention, and many expressions (e.g. the English modals) direct attention to something other than the specific content they themselves supply.

11. In this respect it is not unlike the special case of the French direct object construction illustrated in (4) and Figure 10.

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Chapter 8

Constructions and variability

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1. Introduction and aim

This study[1] makes a number of concrete suggestions for the direction in which we think Construction Grammar (CxG) needs to move in order to be able to account not only for regularities as such, but also for tendencies of grammatical organization. In particular, we apply the constructional approach to language variation and make specific proposals for developing the representational apparatus of CxG to accommodate issues of language change.

In arguing for a restructuring of some of the fundamental notions within CxG, we note that such proposals will both have an effect on the existing CxG formalism and ultimately affect both theoretical and methodological CxG concerns. Above all, the restructuring is seen as necessary in order for CxG to be able to adequately account for aspects of variation and variability, and thus in order to enhance the model's generative capacity and explanatory power. In the long run, we see the suggested direction of research as making it possible to address many of the questions that continue to baffle grammarians, questions relating to the extent to which collocations can be dealt with in CxG, and how constructions can be seen as resources in terms of which grammaticization takes place.

Through a usage-based consideration of three types of variability in Finnish, we suggest a number of addenda, modifications, and emendations to traditional solutions and analyses within CxG. The three types of variability to be dealt with are those of (a) free variation; (b) variation across paradigms; and (c) variability through analogy.

In an attempt to adequately account for these types of variability, we find reason to stress the importance of the concept 'discourse pattern' as well as

to introduce two new concepts into CxG, those of 'value pool' and 'metaconstruction'.

The study continues in the tradition of CxG as practiced at UC Berkeley in the 1980s and early 1990s (and made known through updated versions of Fillmore & Kay 1993); an overview of the most central notions in this approach to CxG is to be found in Fillmore (1989) and Fried & Östman (2004).

2. Variation, variability, and language change

Language is a dynamic activity, so much so that if there is *one* thing that is 'constant' and definitional of language, it is constant change. And in order for change to take place, there has to be (at least a potential for) variation, which we consider to be a linguistic manifestation of variability (as a general human resource).

Issues of variation and variability have been only indirectly addressed within CxG. Since there has been no suggestion that the number of attributes used in AVMs is infinite, and since values need to be assigned to attributes from a pre-specified system of alternative, competing values, more often than not, constructions tend to be conceived of as very rigid and static; the CxG box-notation further underscores this general perception. Suggestions have even been made to tie down 'context' as an attribute that takes on different values. Since the requirements on what values or specifications such a context-attribute may take tend to be impressionistic rather than systematic, it is not far-fetched to think that CxG as presently conceived of attempts to explain away variability rather than account for it. Our view is that variability is just as central to the understanding of how linguistic units behave in a grammar, as is stringency in terms of constructions.

If we want to take seriously the aim of CxG to deal with *all* constructs of a language, be they 'core' members or 'peripheral' constructs, we cannot brush variation aside. Even modern dictionaries (like the Fourth edition of the *American Heritage Dictionary*) and grammars (cf. Biber et al. 1999) provide users with frequency statements of acceptability and grammaticality rather than with once-and-for-all, authoritative statements of correctness.

Language change, variation, language acquisition and language learning involve adaptability. If we seriously want to capture the dynamic aspect of language, our model of grammar needs to have devices available which *generally* allow for the possibility to stretch the borders of constructions.

3. Variability in Construction Grammar

Our view that variability is central to the understanding of how linguistic units behave is not in conformity with the established CxG view. But although variation and variability have not been at the top of the list of concerns for construction grammarians, such issues might indirectly have been the cause for a certain divergence among the proponents of constructional approaches to grammar. There are basically two approaches within CxG which indirectly tackle variation: (i) one is to systematically develop and formalize the notion of inheritance (cf. Fillmore 1999), (ii) the other is to take the CxG program more clearly in the direction of cognition and conceptual structure, and stress the importance of prototypes (cf. Goldberg 1995). Both of these directions of research are necessary, but neither one can, by itself, be sufficient.

i. Establishing 'vertical' inheritance relations between constructions (and thus among their instantiations) is necessary in order to understand the differences and similarities between structures within a network. But constructions also need to be related to each other 'horizontally', irrespective of whether they have the same 'genetic root'. That is, accepting that we have 'families of constructions' should not invariably suggest that we have to do with 'genetic family trees': adopted kids and in-laws are also family-related, as are adopted parents. (Cf. further our discussion in Section 7.) This is where the importance of cognition, of patterns and 'gestalts' becomes relevant. For instance, similarity in form has impact on the similarity in meaning and on the understanding of two constructs, irrespective of their inheritance relationships; thus, divergence in form in some direction – that is, variation – has the opposite effect. (Cf. also Leinonen & Östman 1983.)
ii. Taking the conceptual structure of constructions as basic and seeing variability in terms of divergence from a prototype gives us a convenient way of allowing for flexibility in constructions. However, prototypes need to be constrained (or rather, 'restrained'),[2] in order for the system which contains them to have explanatory power. These restraints need – at least in principle – to be formalizable, in order to allow for predictions. Typically, the extent to which divergence from the prototype is allowed is conditioned by discourse factors or even extralinguistic factors. Such factors need to be specified in terms of relevant parameters, in relation to which constructions – and, indeed, constructs – can vary.

Assigning default values to attributes in constructions and establishing principles of how these values can be overridden (cf. Lakoff 1987; Goldberg 1995)

may not by itself be the ultimate solution, but the strategy of using unspecified values (cf. Fillmore 1999:115) also needs to be restrained (or, in that framework, indeed, constrained), unless we want to find ourselves in the embarrassing situation of having an abundance of unspecified values in order to be able to account for variability in language. If variation is handled in this manner, our grammar will overgeneralize vastly: not only will it allow for existing variation, but it will also license constructs which happen to fit the underspecified values but which are clearly ungrammatical in all variants of the language in question.

Our solution in this study is to combine these two approaches and to have value-specifications, but have them (un)specified with respect to parameters as discourse patterns (Östman 1999, 2005).

In light of these preliminary remarks, the next three sections will discuss the three types of variation in Finnish that constitute the empirical data for this study.

4. Free variation: Constructions and conceptualizations

This section considers cases of what we will call free variation, as in the variant case marking of the content argument[3] of Finnish perception verbs such as *haista* 'smell like (something)' and *kuulostaa* 'sound like'. Cf. examples (1) and (2).

(1) a. *Tuo haisee pahalta.*
that smell.3SG bad.ABL
'That smells bad.'

b. *Tuo haisee pahalle.*
that smell.3SG bad.ALL
'That smells bad.'

(2) a. *Tuo kuulostaa hauskalta.*
that sound.3SG fun.ABL
'That sounds fun.'

b. *Tuo kuulostaa hauskalle.*
that sound.3SG fun.ALL
'That sounds fun.'

Finnish has two alternative realizations of the content arguments for such verbs, one in the allative case, and the other in the ablative case. As support for our view that speakers waver even within one and the same speech situa-

tion, and that the alternative case marking of the content argument of some perception verbs is really a case of free variation, consider (3).[4]

(3) *Itkunsekasella äänelä Filppa jatko: "Nuo julkeat Stalinin käsikassarat toivat mukanaan useita veteliä,*
sipulilta löyhkääviä ryssämiehiä.
onion.ABL stink.PCP.PL.PAR russian.man.PL.PAR
Keräsivät kaikki meidät kylän neitoset raitille ja jakoivat itse kullekin oman
viinalle ja pinttyneelle lialle haisevan
booze.ALL and persistent.ALL dirt.ALL smell.PCP.ACC
ukon."
old.man.ACC
'In a weeping voice Filppa continued: "Those arrogant Stalin's men of dirty work [lit. 'hand axes'] brought along several sloppy Russian men who stank of onion. They collected all of us maidens of the village into the street and distributed to each of us an old man of our own who smelled of booze and deep-rooted dirt."'

Example (3) is an attested example from a recent novel. It has both the allative and the ablative case marking in the same quote by the character Filppa. True, the verb is not the same in the two instances, but the verbs *löyhkätä* 'to stink' and *haista* 'to smell' are no different with regard to the case marking of the content argument. Native speakers of Finnish attest that they would consider example (3) totally acceptable even if the verb were the same in both instances.

At first glance, the grammar, i.e. the inventory of constructions, gives no indication of when either one of these alternatives, allative vs. ablative, is selected, and there might seem to be no *a priori* need to relate the two in order to give an appropriate account of them.

If a strict one-to-one mapping between form and meaning is the criterion on the basis of which we establish whether we need one or two constructions, then clearly we need to say that the *a* and *b* variants in (1) and (2) are licensed by two separate constructions, which in turn license other V+ABL and V+ALL constructs, respectively. One construction would have the case specification ablative (4a) and the other would have the case specification allative (4b).

(4) a.
$$\begin{bmatrix} \text{cat} & \text{n} \\ \text{max} & + \\ \theta & \text{content} \\ \text{case} & \text{abl} \end{bmatrix}$$

b.
$$\begin{bmatrix} \text{cat} & \text{n} \\ \text{max} & + \\ \theta & \text{content} \\ \text{case} & \text{all} \end{bmatrix}$$

This approach has a number of advantages: first of all, it is the most obvious solution; secondly, the specifications are clear and succinct; and thirdly, it allows for the possibility to associate different semantic and pragmatic features with the two case forms and it also allows us to associate different verbs with arguments in any of the two cases.

However, this approach also has clear disadvantages. According to Kay (1995: 175), CxG "is devoted to the extraction of all the generalizations potentially available to the speaker of a language". In contrast, the suggestion in (4) clearly misses the generalization that both allative and ablative can be used with perception verbs. (4) also goes against general requirements of simplicity and economy: if at all possible, we should avoid creating two different constructions for realizations that are clearly semantically related. Except for the allative/ablative alternation, there is no other obvious difference between the constructions (cf. (4)) which would license the sentences in (1)–(2).

Since forms are typically more discrete than meanings, and since the allative and the ablative cases are generally very different in meaning (in fact, spatially they are each other's opposites, allative denoting 'onto' and ablative 'off from'), it is not immediately and intuitively obvious what feature information will cover the allative and ablative cases but will exclude all other cases, for example the adessive 'at' case.

But this possibility should naturally be considered. Thus, in order to avoid *ad hoc* solutions, we can – as a second, alternative approach – attempt to formulate the feature matrix so that we could have (1) and (2) licensed by the same construction. The way to do this is to deal with the allative/ablative alternation as underspecification of the case attribute: we specify variation as taking place within given limits. In the spirit of Siro (1964: 29), we could give the varying allative/ablative case marking the feature specification in (5), which is based on the organization of the Finnish local cases in the manner displayed in Table 1.

(5)
$$\begin{bmatrix} \text{cat} & \text{n} \\ \text{max} & + \\ \theta & \text{content} \\ \text{case} & \begin{bmatrix} \text{loc} & + \\ \text{ext} & + \\ \text{dir} & + \end{bmatrix} \end{bmatrix}$$

In (5), the *loc* attribute corresponds to a fundamental distinction in the Finnish case system, one between local cases and other cases. The *ext* attribute further specifies external local cases, and the *dir* attribute corresponds to directional local cases, as shown in Table 1.

The suggestion in (5) captures the generalization that (4) could not capture: we can refer to the allative and ablative case markings with one feature matrix. In addition, this suggestion is more economical than (4): we do not need to postulate two different constructions for the assessed alternation. (5) is also a very elegant solution in terms of AVMs. In fact, this would be quite a satisfactory solution if we were dealing with variation that is truly free. However, this approach provides us with no way of differentiating between the two options (allative vs. ablative), if making such a differentiation turns out on closer analysis to be necessary. And there does indeed seem to be subtle mechanisms which underlie this variation, mechanisms which have semantic correlates.

If the variation we have observed could be captured as variation in terms of polysemy, we would need a *sem* specification that could be formulated in terms of particular semantic roles (since the grounds on which we decide whether we have to do with one semantic role or two is precisely whether there are syntactic repercussions of this decision). The pairs of sentences in (1) and (2) do mean 'the same thing', but the two constructions that license them could be related to different conceptualizations. Although we have not found any context in which one could be used and not the other, we need to try out all possibilities before we can confidently say that it does not matter which case marking we use.

The general cognitive statement that can be made here is that perception can be either from the point of view of the perceiver or from the point

Table 1. Finnish local cases

	Non-directional 'Stative'[5]	**Directional ('from') 'Separative'**	**Directional ('to') 'Terminal'**
Internal	INEssive	ELAtive	ILLative
External	ADEssive	ABLative	ALLative
General	ESSive	(ELAtive)	TRAnslative

Table 2. Frequency of the allative and ablative cases with perception verbs

case \ verb	*haista*	*maistua*	*kuulostaa*	*näyttää*
allative	67	12	1	2
ablative	75	75	279	1,203
ABL/ALL	1.12	6.25	279	601.5

of view of the object perceived, the stimulus. If the perception is construed as being perceiver-oriented, the content of the perception receives the allative ('to'); if the perception is object-oriented, the content of the perception is marked with the ablative ('from'). In the tradition of Cognitive Grammar, a similar distinction is sometimes made between, respectively, subjective, and objective conceptualizations of events or states. (Cf. Langacker 1985, 1990; Dabrowska 1997.)

If we take a closer look at some of the particular verbs that belong to the perception frame and their behavior in large corpora, we find that in a four-million-word corpus of 82 recent books published in Finnish (including novels and non-fiction), a number of strong tendencies can be noticed. In this corpus, the Finnish verbs *haista* 'smell', *maistua* 'taste', *kuulostaa* 'sound', and *näyttää* 'look (like)' are used with allative and ablative content arguments as indicated in Table 2; the figures refer to actual instances found (=N).

As Table 2 shows, the allative and ablative cases are practically equally frequent with the verb *haista;* with the verb *maistua,* the ablative is more than 6 times as frequent as the allative; with the verb *kuulostaa,* the ablative is 279 times as frequent as the allative, and with the verb *näyttää*, the ablative is 601 times as frequent as the allative.

The behavior of the content argument of *kuulostaa* and *näyttää* accords quite well with our hypothesis about the cognitive correlates of the direction of perception. We can argue that sounding and seeing are conceived of as motion-related and therefore directional activities: sound and visual perception can be perceived as coming 'from' a particular direction. Thus, *kuulostaa* and *näyttää* – verbs with object orientation – typically occur together with content arguments in the ablative.[6] Conversely, smelling and tasting are more subjective (and less 'directional'), and thus the verbs *haista* and *maistua* more readily occur with the allative.[7] But how far can this explanation be taken?

Although it is true that the suggestion in (5) is on several accounts better than that in (4), (5) cannot account for the type of lexical diffusion present in the data (as displayed in Table 2). As a matter of fact, from this point of view, (4) would be a more adequate solution, despite its inherent problems with

regard to not capturing generalizations. (4a) could be inherited by *kuulostaa* and *näyttää*, whereas *haista* and *maistua* have to refer to both (4a) and (4b).

But do the different case markings require the *a* and *b* versions of (1)–(2) to be licensed by one and the same construction or not? General cognitive support for the claim that they are licensed by different constructions can be found in Bolinger's (1977) one-meaning-one-form dictum, and in J. R. Firth's slogan that meaning implies choice: if there is no choice, there is no meaning (difference).[8] If there is a choice (here, between using the allative and the ablative), we would expect there to be reasons why one case form is chosen rather than the other; and if there are two forms, we would expect there to be some meaning difference – at some level – between the use of either one of the cases.

The frequency data in Table 2 strongly suggest that the allative/ablative variation is not equally 'free' with all verbs. This would indeed speak in favor of a view where the alternation reflects two different conceptualizations of essentially the same situation. Another reason why we need to recognize (in our representation) both the similarity and the difference between the *a* and *b* variants of (1)–(2) is that of emerging variability: an adequate model should have devices that are flexible enough to accommodate attested variation – however insignificant and idiolectal such a variation may at first seem. In the present case, we have seen that there is a clear preference to use the ablative variant as in (2a), and the corresponding conceptualization, for sound sensations – for perceptions that come from the outside. Whether this has to do with the fact that the ablative variant in general is regarded as the normatively 'correct' way of construing perceptions, or whether it has to do with a meaning distinction in terms of (some folk-view of) the direction the sensation takes place, we cannot say. But from the point of view of taking variation – and in particular, emerging variability – seriously, we should not overlook the cognitive basis of CxG when deciding whether an expression is licensed by one construction or another: variant constructions should (ideally) be relatable to different conceptualizations.

The reason this section carries the heading 'free variation' despite the fact that we have offered a possible explanation for the use of the ablative vs. the allative, is twofold. The first reason is one of terminology: the phenomena discussed constitute free variation in the traditional sense of thinking about meaning only in terms of propositional meaning – from that point of view the *a* and *b* sentences of (1)–(2) are equally acceptable and grammatical. The second reason is that although we can see tendencies in the case of *maistua*, not to mention *näyttää* and *kuulostaa*, in the case of *haista*, we have a close to 50–50

distribution of the allative and the ablative. We will return to this case of 'free variation' at the end of Section 5.

In this section we have wanted to stress the importance of the cognitive basis of CxG for distinguishing between constructions, and the importance of consulting corpora in order to get detailed information about the specific characteristics (like case marking) of the realizations of frame elements associated with particular lexemes (in our case, verbs).

5. Variation across paradigms: Value pools

The second type of variation is exemplified by the Finnish grammatical-person marking in the verbal system, including both the pronominal system and the verb inflection. The paradigm for written and more formal Finnish is given in (6); this is the prescriptive paradigm which the President of Finland uses in her official, prepared speeches and which is also taught to foreign-language learners of Finnish.

However, in spoken Finnish other forms are in use, to the extent that a separate paradigm has emerged and has been codified for spoken, informal Finnish – a paradigm which would also be used by the President of Finland when she gives a public interview. This paradigm is given in (7).[9]

(6)

	singular	*plural*	e.g. *potki-* 'kick'; *potkia* 'to kick':	
1st	minä X-n	me X-mme	minä *potkin*	me *potkimme*
2nd	sinä X-t	te X-tte	sinä *potkit*	te *potkitte*
3rd	hän X-V	he X-vAt	hän *potkii*	he *potkivat*

(7)

	singular	*plural*		
1st	mä X-n	me X-TAAn	mä *potkin*	me *potkitaan*
2nd	sä X-t	te X-tte	sä *potkit*	te *potkitte*
3rd	se X-V	ne X-V	se *potkii*	ne *potkii*

Standard CxG can account for this type of variation only to a certain degree. The obvious solution is to postulate different constructions for each paradigm. These general constructions can then be inherited by other constructions or, indeed, be made applicable to whole discourses. The device we use to accomplish this is the notion of *discourse pattern*, as developed in Östman (1999, 2000, 2005). A discourse pattern is the cognitive correlate of the linguistically defined *text type*, and the socioculturally defined *genre*. Understanding of text and discourse takes place primarily in terms of discourse patterns.

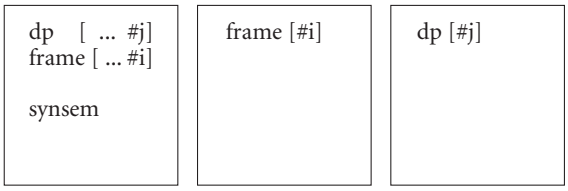

Figure 1. Schematic representation of the relation between syntactic-semantic constructions, semantic frames, and discourse patterns

There is a repertoire of discourse patterns – akin to the lexicon of lexemes (or, phrased differently, to the constructicon of constructions). Discourse patterns, as discourse-level correlates of constructions, are seen in the same way as frames in Frame Semantics are thought to be invoked by constructions. A graphic display is given in Figure 1.

Constructions and constructs will have a *dp* (for 'discourse pattern') attribute, which will be assigned a value, or rather, which will be assigned a specification. For instance, Östman (1999) discusses the *dp* of Recipes and News stories; Östman (2005) invokes the *dp* of Headlines in order to explain the acceptability of constructs like *Mother drowned baby*; Halmari & Östman (2001) and Halmari (2001) invoke the notion of discourse pattern in order to get a deeper understanding of an atypical execution story; and Östman (2000) discusses the intricate make-up of the *dp* for Postcarding. In general, a construction or construct which is unspecified for *dp* will have the status of being a prototype, the AVMs of which will be 'overrun' by *dp* specifications which allow other values than those of the default.

Our suggestion is thus to include a *dp*-specification to indicate that the forms in the paradigms (6) and (7) belong to different 'registers' and that they can, therefore, only be licensed in combination with a specific set of other constructions; they can only be licensed when they inherit, or make reference to, a *dp* with matching formality features.

This suggestion takes us a long way towards coping with variation across paradigms, but it does have the disadvantage of forcing us to treat the two paradigms as clearly separate entities. If the two person paradigms had no overlap between them whatsoever, the solution we have just suggested might not be a very inconvenient one. However, in actual discourse, what happens is that participants will waver between the two paradigms, using sometimes more formal forms and sometimes more informal forms, even in the same discourse. This suggests – especially if we also want to retain the cognitive basis for CxG –

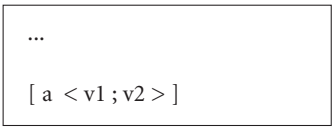

Figure 2. Representation of a value pool

that the representations of the two paradigms should not be totally separated. In this particular case, we might be able to speculate, on the basis of dialectal evidence, about when and how these two paradigms have evolved in Finnish. For instance, and in particular, it was clearly not so that one day speakers of Finnish were confronted with two paradigms; rather, seemingly, the indefinite person (a.k.a. the passive) came to be used as a 1st person plural imperative form (*mennään*, 'let's go' instead of *menkäämme*), and was extended to non-imperative uses ((*me*) *mennään*, 'we('ll) go'). The present-day situation can be described either by saying that this use of the 'passive' is being extended also into the formal paradigm of (6), or, as we would prefer: the field of usage of the formal paradigm of (6) has shrunk markedly, and the informal paradigm of (7) is taking over and becoming the paradigm that speakers most often use.

To cope with this type of situation, we want to introduce the notion of a *value pool*. The basic idea is that *a set of values* can be assigned to an attribute. Such values will be given within pointed brackets in our formalism; cf. Figure 2 (where 'a' stands for 'attribute', and 'v' for 'value').

For instance, in Figure 2, if 'a' is grammatical-person, then 'v1' could be (7), and 'v2' could be (6). When a construction is marked in this manner, the choice between the two values (in this case, the choice between the sets of values) will be determined on the basis of the *dp* specification of the construct or construction that inherits the value pool.

With the help of the notion of a value pool, address terminology, the different politeness forms used according to a T/V distinction in many languages, and the different sets of honorifics in other languages can also be conveniently handled within CxG.

This device is also an alternative to the various coercion mechanisms suggested within CxG. For instance, in early CxG (Fillmore & Kay 1993) a suggestion was made to have one type of constructions be constructions that changed some or one of the values of other construct(ion)s, for instance in order to allow count nouns to be conceived of as mass nouns, or vice versa. Rather than suggesting that such constructions be reinstated as merely lying around, waiting to be applied in a possibly unpredictable manner, such coercion con-

structions should be made applicable, through inheritance mechanisms, to members of sets of value specifications, and thus licensed directly.[10]

With the notion of value pool introduced, we can now return to the issue of free variation discussed in Section 4. We had two alternative suggestions for how to deal with the allative/ablative alternation in the content argument of perception verbs. Neither of these suggestions was fully satisfactory. The notion of value pool presents us with a third possibility, presented in terms of AVMs in (8).

(8)
$$\left\{ \begin{bmatrix} \text{gf} & \text{subj} \\ \theta & \text{stimulus} \\ \text{cat} & \text{NP} \\ \text{case} & \text{NOM} \end{bmatrix}, \begin{bmatrix} \text{gf} & \text{obl} \\ \theta & \text{content} \\ \text{cat} & \text{NP} \\ \text{case} & < \begin{bmatrix} \text{ALL} \\ \dots \end{bmatrix}, \begin{bmatrix} \text{ABL} \\ \dots \end{bmatrix} > \end{bmatrix} \right\}$$

The formulation in (8) is in the form of a valence description of the verb type in question, i.e. Finnish perception verbs. The three dots under the case specifications stand for any further features associated with that particular case, be they lexical, specifiable in terms of discourse patterns, or whatever. The advantages of this representation include the elegance and economy of (5): we only need one construction. Furthermore, it can deal with the kind of diffusion we encountered in Table 2. The suggestion in terms of a value pool can also handle any kind of differences we might find between the alternatives specified in the value pool. In effect, this approach combines the advantages of (4) and (5) and does away with their disadvantages. In fact, what we have done in (8) is to adhere to the general requirements stipulated for CxG, and generalize as far as possible. Thus, in (8), only the differences between the alternative case markings need to be specified in the value pool, and these case markings may in turn be associated with different conceptualizations, if this is deemed advantageous.

In the next section we will discuss another kind of variation, which at first glance might look very different, but which in reality is very similar in nature. It also involves generalizations in which we only spell out differences. However, these differences are at a higher level of abstraction, since we will argue for the necessity to incorporate also generalizations over constructions in CxG.

6. Variability through analogy: Metaconstructions

Finnish subject case marking involves a kind of variability where certain expressions need to make reference to analogy: several clearly existing constructions are used as models in such a way that none of them by itself licenses the resulting expression. This kind of variation cannot be handled by reference to 'competing constructions'.

Finnish subject and object case marking illustrates the pervasiveness of analogy. Finnish has a construction which is instantiated by the sentences in (9).

(9) a. *Pojat* *söivät* *pizzan.*
boy.PL.NOM eat.PAST.3PL pizza.ACC
'The boys ate the pizza.'
b. *Miehet* *kaatoivat* *puut.*
man.PL.NOM cut.down.PAST.3PL tree.PL.ACC
'The men cut down the trees.'
c. *Sudet* *tappoivat* *poroja.*
wolf.PL.NOM kill.PAST.3PL reindeer.PL.PAR
'The wolves killed reindeer.'

This construction may, in a simplified and rather self-explanatory manner, be characterized as in (10).[11]

(10) $[S_{NOM}\ V\ O_{ACC/PAR}]$

The construction licenses basic transitive sentences with an object that is marked with the accusative or partitive case.

Finnish also has two constructions which license the sentences in (11) and (12), respectively.

(11) a. *Pojat* *juoksevat* *pihalla.*
boy.PL.NOM run.3PL yard.ADE
'The boys run in the yard.'
b. *Puut* *kaatuivat* *myrskyssä.*
tree.PL.NOM fall.down.PAST.3PL storm.INE
'The trees fell down in the storm.'

(12) a. *Pihalla* *juoksee* *poikia.*
yard.ADE run.3SG boy.PL.PAR
'There are boys running in the yard.'
b. *Myrskyssä* *kaatui* *puita.*
storm.INE fall.down.PAST.3SG tree.PL.PAR
'(Some) trees fell down in the storm.'

The difference in meaning between the respective sentences in (11) and (12) has to do with the general difference in meaning between partitive case marking as indicating unboundedness, and the accusative as indicating boundedness.

The construction that licenses the sentences in (11) has the characteristics schematically represented in (13), and the construction that licenses the sentences in (12) has the characteristics of (14). The two are clearly related, with the subjects in (11) being bounded and the subjects in (12) being unbounded.

(13) [S_{NOM} V X]

(14) [X V S_{PAR}]

Normatively speaking, Finnish does not, however, have a construction of the form suggested in (15), which would have the same relationship to (10), as (14) has to (13), and which would license (16a–c).

(15) [$O_{ACC/PAR}$ V S_{PAR}]

(16) a. **Pizzan söi poikia.*[12]
pizza.ACC eat.PAST.3SG boy.PL.PAR
'(Some) boys ate the pizza.' /
'The pizza was eaten by boys.'

b. **Puut kaatoi miehiä.*
tree.PL.ACC cut.down.PAST.3SG man.PL.PAR
'(Some) men cut down the trees.' /
'The trees were cut down by men.'

c. **Poroja tappoi susia.*
reindeer.PL.PAR kill.PAST.3SG wolf.PL.PAR
'(Some) wolves killed the reindeer.' /
'Reindeer were killed by wolves.'

One reason why the construction in (15) does not exist in Finnish is probably that there is no expressive need for it, or that this need is not strong enough to give rise to such a construction.

However, we encounter not only sentences like (17) in spoken Finnish, but also sentences like (18) in writing – (18) is from a newspaper report. Both of these seem to be making use of something like (15).

(17) *jotain unkarilaisia esitti siellä*
some.PAR Hungarian.PL.PAR perform.PAST.3SG there
kansantansseja
folk.dance.PL.PAR
'some Hungarians performed folk-dances there'

(18) *Tuhansia Soneran piensijoittajia jätti*
thousand.PL.PAR Sonera.GEN minor.investor.PL.PAR leave.PAST.3SG
käyttämättä merkintäoikeutensa Soneran
use.INF3.ABE[13] right.to.subscribe.for.shares.ACC.PS3SG/PL Sonera.GEN
annissa.
rights.offering.INE
'Thousands of Sonera's minor investors left their share subscription right unused in the Sonera stock rights offering.'

Sentences like (17) and (18) are becoming more and more common in practically all registers of Finnish, although they are still marginal in both spoken and written Finnish.

How can we explain the occurrence of examples like (17) and (18) without making a general acceptance statement as regards (15)? If we say that (15) is a valid construction for Finnish, we would also have to regard the (clearly unacceptable) examples in (16) as acceptable, since they would be licensed by (15). This would also mean that we would draw a rigid line between 'grammatical' and 'ungrammatical' where the data tell us we have to do with indeterminacy.

In order to account for the examples given above, we need to make reference to various analogy phenomena. To accomplish this, we want to suggest that a grammar should not only be an inventory of constructions as generalizations over expressions, but a grammar must also include generalizations over constructions – what we call *metaconstructions*.

Traditional CxG realizes that a grammatical system (of constructions) is not a system if it is conceived of as merely an unstructured list or inventory of constructions. The way the system as a whole has been made to include relations between the various constructions and organize the constructions into a functional system is through inheritance links (cf. Goldberg 1995: 73–81; Michaelis & Lambrecht 1996: 235–245). However, such abstract links can only capture certain rather simple relations between constructions. The notion of metaconstruction is introduced to capture generalizations that go beyond subsumption and instantiation relations. More precisely, metaconstructions capture analogical relationships, which have been shown to be important for

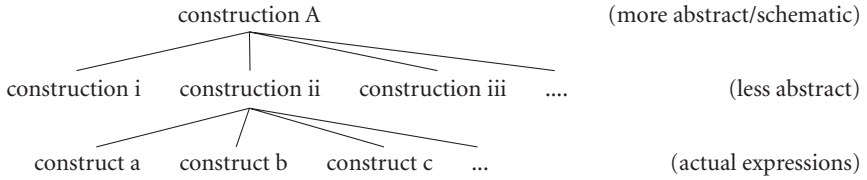

Figure 3. A hierarchy of inheritance links

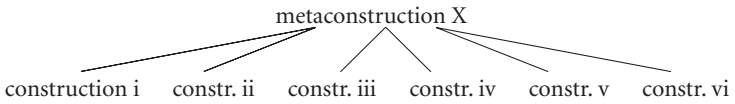

Figure 4. A hierarchy of metaconstructions

the organization and creative use of constructions (Boas 2000: 381–397) and, more generally, syntactic creativity (e.g. Tabor 1994: 202–205).

Although metaconstructions may be thought of as generalizations over constructions (much in the same sense as constructions may be seen as generalizations over actual expressions), they should not be seen as a more abstract, general, or schematic 'level' of constructions. They are not generalizations which only capture the similarities of a given group of constructions. Rather, they capture systematic similarities and differences which occur between several *pairs* of constructions.[14]

The situation in Figure 3 corresponds to what Goldberg (1995) and Michaelis & Lambrecht (1996) would capture by means of inheritance links.

In contrast, metaconstructions capture analogical relationships between several pairs of constructions. Therefore, the relevant picture is not that in Figure 3, but rather that in Figure 4.

What Figure 4 – or, rather, *metaconstruction X* – tells us is that *construction i* and *construction ii* are in the same kind of relationship to each other as are *construction iii* and *construction iv,* and the same holds for *construction v* and *construction vi* as well. This relationship will include systematic similarities and differences of form, as well as a systematic semantic relatedness. Therefore, *metaconstruction X* partakes in organizing grammar (here, the grammar of Finnish) to the extent that it spells out a relationship which is recurring within the grammar, and therefore is very probably relevant to its internal organization.

Metaconstructions can, however, do more than just organize the system. According to Goldberg (1995: 75), inheritance links are "objects in our system",

i.e. an essential part of the language and the grammar. And so are metaconstructions: they are, just as constructions, templates for using language, analogy models for storing knowledge and for creating new linguistic material.

By this we mean that metaconstructions may be thought of as not only static descriptions of relations which hold between constructions, but also as dynamic instructions for how to form new constructions. But this requires that they be described and represented in a manner that allows them to be used in a creative way.

Consider now the sets of examples from Finnish. The relationship between the *a–b* pairs in (11) and (12), that is, the relationship between the constructions (13) and (14) can be displayed as the metaconstruction given in (19).[15]

(19) $[[S_{NOM}\ V\ X] - [X\ V\ S_{PAR}]]$

We further note that normative Finnish does not have a constructional instantiation of the metaconstruction in (19) which would have the form given in (15) and which would as such license the examples in (16a–c).

We said earlier that one reason why the construction in (15) might not exist in Finnish is that there is no expressive need for it. However, if such a need were to arise, the construction that could license the sentences in (16a–c) would certainly be a very natural tool for satisfying that need. And since the language already has, so to speak, all the 'ingredients' for such a construction – i.e. the language has the construction exemplified by the sentences in (11) and (12), as well as the metaconstruction in (19), and the construction given in (10) – it would not be difficult for a native speaker to coin a construction like (15) and start using it. And, as we already saw in examples (17) and (18), this is precisely what is happening in Finnish at the moment.

The kind of variation we are experiencing is that a new kind of expression, a new construction, is being taken into use, but it does not actually exist in the language yet. The sporadic instances of this construction are best seen as creative uses of the language, *syntactic innovations* in Tabor's (1994) terms: it does not appear to be the case that such a construction exists in some variants of the language and is spreading to other variants as well. Rather, it is being coined, by different language users independently, by 'putting together' the existing constructions and the metaconstruction in (18), which is thus used as an analogy model. The variation we see involves extending the language through analogy.

Our conclusion is thus that such metaconstructions have to be taken into account in a full-fledged CxG that sees fit to address issues of variation and language change.

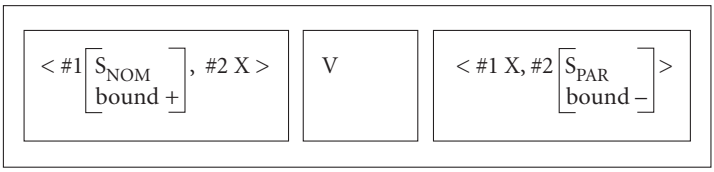

Figure 5. Metaconstructions as value pools

We introduced the notion of metaconstruction by indicating that the kinds of generalizations it covers are on a par with the kinds of generalizations that the notion of value pool covers. Although we do not want to pursue this suggestion any further in this study, it is indeed possible to formulate the information in metaconstruction (19) in terms of value pools, along the lines suggested in Figure 5.

The AVM in Figure 5 essentially presents a construction with two alternative forms, indicated by the unification variables #1 and #2. In option #1, the form will be [S_{NOM} V X], and the referent of the subject NP will be bounded. In option #2, the form will be [X V S_{PAR}], and the referent of the subject NP will be unbounded. As discussed above, option #1 is the default in Finnish, whereas option #2 only occurs sporadically. But a full-fledged grammatical description of a language should be able to capture not only 'core' phenomena, but also sporadic, 'peripheral' phenomena.

7. Conclusion

Variation is not equivalent to incorrect usage or rule-breaking. Studies in child language acquisition (not to mention foreign-language learning) show acceptable 'deviations' from whatever norms we postulate. A certain amount of idiolectal variation is also quite acceptable in a language community. Such variation is not solely linked to politeness, or etiquette behavior, but pertains also to grammar. Any model of language or grammar thus needs to address issues of variability, and, as a consequence, needs to have some device for how to represent variation.

It is particularly crucial for CxG to have some such device, or, indeed, to incorporate the demands set by variation in its basic make up, since other grammatical models tend to develop constructional 'components' akin to CxG in order to deal with at least some of the types of constructs that research in CxG has shown to be systematic rather than belong in a list of exceptions to

rules. In this sense, CxG has clear advantages in relation to most other models of grammar. But CxG's commitment not to shun 'the periphery' poses an extra burden on the work that is expected of those of us who work within this model.

In this study we have addressed only three types of variation, but there are clearly many more types that need to be looked into. The broad field of variation raises questions which may eventually have a radical effect on the general architecture of CxG. One of the main questions in this respect is no doubt how 'different' variants of the 'same' construction should be conceived of. A language as described in a grammar is a generalization over (usually) a very large number of idiolects; yet, specific constructions are necessarily idiolect-level phenomena, since constructions are not seen as innate, but rather as generalizations which language users make on the basis of the linguistic input they receive. And since speakers receive different inputs, the constructions in their 'internal grammar' may – and will – be somewhat different.

There are, in principle, two ways to accommodate the kind of variation that arises as a result of the usage-based nature of constructions. The first, which we have not wanted to support, is to idealize the speaker and make our grammar for his/her idealized idiolect in a homogenous speech community.[16] As we have argued, that approach encounters problems when faced with divergences from the idealization since any such divergence will require that an extra apparatus, a new set of tools, be set up.

The second approach, which we have endorsed here, is to formalize constructions in such a way as to allow for flexibility and variability. We thus suggest as a viable alternative that constructions be formalized so that they can account for variation in the data 'from the very start'. We propose that in this manner not only will the analysis be more cognitively and interactionally usage-based, but the model itself will also encounter fewer obstacles in the future as the representation faces new and unforeseen challenges.

Notes

1. We would like to thank the participants at the First International Conference on Construction Grammar (ICCG-1) in Berkeley, especially Hans C. Boas, Mirjam Fried, Florian Jaeger, Paul Kay, Josef Ruppenhofer, and Arnold Zwicky for valuable comments on our presentation at the conference, and on earlier versions of this study. Remaining inadequacies are naturally our responsibility.

2. For the difference between constraints and restraints, see Bazell (1964).

3. For our purposes in this study, we have only distinguished between three semantic roles / frame elements: PERCEIVER, STIMULUS, and CONTENT; for instance, Bill [=STIM] sounds tired [=CONT] to me [=PERC]. A more detailed account of perception verbs and their frame elements can be found in Johnson et al. (2001).

4. PCP stands for present participial, 'stinking', 'smelling'; *sipulilta löyhkääviä miehiä* is thus literally 'of onion stinking men'.

5. The terms Stative, Separative, and Terminal are used by Leino & Onikki (1992: 36). The general separative case ELA is placed within parentheses by Siro, who argues (1964: 30) that this position in the table was historically occupied by the partitive, which is historically a separative case parallel to the general local cases ESS and TRA.

6. If we did not know better, we might even want to declare that the use of the allative case is 'ungrammatical' for these verbs; this is also the implication communicated in dictionaries.

7. Cf. also English: *light* and *sound* normally *travel* or *come* from a direction, *smell* does so less frequently, and *taste* hardly ever does.

8. For an overview of Firthian linguistics, see Östman & Simon-Vandenbergen (1995).

9. In (6) and (7), X stands for the verb stem, V for the final vowel of the stem, and A for either *a* or *ä*, according to vowel harmony. T stands for the archephoneme *T,* which can be variously realized depending on consonant gradation; typically as *-t-* or *-d-*, but it can also be realized as an assimilated *-l-, -r-,* or *-n-*. Cf. Karlsson (1999: 29).

10. This will involve a number of specific decisions with respect to the formalism, decisions that will have to grow out of the needs of future empirical analyses. For instance, one technicality might be to have the value given first, 'v1' in Figure 2, be the 'normal' or 'default' value (say, the specification of *chair* as 'count'), and the use of *chair* as a mass noun (as in *Termite Tim had too much chair for dinner*) would be specified under 'v2' in Figure 2.

11. In the oversimplified constructions in this section, S = subject, V = finite verb, O = object, X = a potential other argument, NOM = nominative case, PAR = partitive case, ACC = accusative case.

12. Notice that word order does not affect acceptability. Corresponding to (9a), we can have the acceptable and grammatical *Pizzan söivät pojat.* And corresponding to (16a), a sentence like **Poikia söi pizzan* is also ungrammatical. Thus, word order does not enter in as a variable in the oversimplified construction specifications in this section: the order in which elements are given in the text is mnemonic at best.

13. INF3 in the glosses stands for the Finnish *-mA-* infinitive (known as the "third infinitive" in traditional grammars), ABE stands for the abessive case, and PS for the possessive suffix.

14. In theory, there may be cases where such systematic similarities and differences can be established among triplets or quadruples of constructions.

15. As we see, (19) is simply a concatenation of (13) and (14). But at this level of abstraction, the concatenation of what might at first have seemed to be abstractions verging on oversimplification of constructions now take on a role of their own, in the specific form of (19), which – we propose – *is* the metaconstruction needed to account for the data at hand.

16. We are of course here alluding to Chomsky's (1965: 3) famous statement that "Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogenous

speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance."

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Chapter 9

Construction Grammar as a conceptual framework for linguistic typology

A case from reference tracking

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1. Introduction

1.1 Aim of study

This chapter focuses on the connection between Construction Grammar (CxG) and linguistic typology and argues (i) that CxG is in principle compatible with the desiderata of linguistic typology, and (ii) that typological studies, in turn, will enrich CxG in significant ways. The case comes from the typology of reference tracking systems, with emphasis on the treatment of switch reference (SR).

The organization of this chapter is as follows. First, in the remainder of Section 1, I will outline what I take to be the leading ideas of CxG and basic assumptions of typological study. In Section 2, the formal-configurational account of SR is critically examined, drawing upon several unrelated languages. In Section 3, attempts will be made to offer a construction-based account of SR. I will be particularly interested in how to capture the rich diversity of reference tracking systems and underlying functional motivations in terms of constructional templates.

1.2 Construction Grammar

Since its inception in the mid-1980s, CxG has had multiple orientations (e.g. Lakoff 1987; Fillmore et al. 1988; Goldberg 1995; Michaelis & Lambrecht 1996;

Kay & Fillmore 1999). Apart from their finer mechanics, however, I may formulate the basic philosophy of CxG common to most works in the following way.[1]

(1) a. The mental representation of grammatical knowledge consists of a system of form-meaning pairs termed constructions (cf. "symbolic units" in cognitivist terms, cf. Langacker 1987: Ch. 2).
b. Instantiation and schematization constitute fundamental organizing principles of grammatical knowledge, including its acquisition. Highly schematic constructions are also endowed with schematic meanings.
c. Form and meaning constrain each other, while allowing for possibilities of overriding/coercion ("framing" in cognitivist terms).

These are the common denominators of CxG to which I wish to give supportive arguments throughout this chapter. At the same time, however, most works in CxG focus on constructions in individual languages, so how to capture cross-linguistic generalizations in CxG remains to be an open question. I will return to this point in the last section.

1.3 Linguistic typology

The basic assumptions of linguistic typology as I understand it are formulated below (for a methodological survey, cf. Croft 2001, 2003).

(2) a. Descriptive details and empirical generalizations are equally important. Rather than positing a theory-driven overarching universal, generalizations are made from the bottom up.
b. Variations are taken as they are, not as trivial post-effects from the working of 'principles' and 'parameters'. Indeed, systematicity in variation, both synchronically and diachronically, is the principal basis for the identification of universals (often expressed in terms of implicational universals).
c. Explanation for universals primarily comes from conceptual and/or discourse factors. Co-variance in form-meaning relation is important in this respect.

The approach to linguistic typology characterized above is sometimes labeled 'functional' but here I consider (2) to be the unmarked kind of typology, and those approaches that deviate from it should be given specific labels when necessary.

In addition, I might draw a distinction between two ways of using the term 'typology'. One is what may be called hard-core typology, i.e. the pursuit of cross-linguistic generalizations based on a systematic sampling of data from many languages. The other is the application of the results of hard-core typology to the study of individual phenomena in particular languages. The present study stands somewhere in between, as it examines reference tracking phenomena in different languages in a coherent typological perspective, while no systematic sampling of languages is attempted.

Having reviewed the basic assumptions underlying CxG and linguistic typology, I now turn to the analysis of switch-reference as a case study.

2. Switch-reference as a reference tracking device

2.1 Overview

One of the reasons I take up reference tracking systems in this chapter is that it exists basically in any language, and hence is a topic worth investigating from a typological perspective. Another reason is that the research within CxG so far has not discussed this important area of grammar, let alone overall typology of complex sentence constructions.

Here I define reference tracking as a grammatical device for keeping track of a salient participant in discourse, especially across clauses. The strategy of linguistic coding varies from language to language. No language, however, seems to code reference tracking with absolute transparency, i.e. morpho-syntactic information is very often not enough to uniquely identify the referent, and hence the intrusion of semantic and pragmatic factors is inevitable.

A full-scale typology of reference systems was first proposed by Foley & Van Valin (1984). Here, we will start with Comrie (1998a), who introduces two important distinctions. The first is the *local* vs. *global* distinction, i.e. clause-internal coreference at one end and paragraph-sized topic chains at the other. The second important distinction is that between *inherent* and *assigned*. Gender-based pronouns represent a typical example of the former, and topicality assignment in obviation is a typical example of the latter.

Based on these distinctions, some common reference tracking systems can be characterized in the following way (cf. Foley & Van Valin 1984: Ch. 7).

(3) a. *Gender system*: pronominal reference and cross-referencing, based on the property of a referent, hence inherent and potentially global;

b. *Switch-reference system*: coding of participant identity based on the comparison of independently specified target NPs across clauses, hence assigned and local;
c. *Switch-function system*: coding of participant identity by means of syntactically changing the relation of a target into some privileged and hence trackable NP.

Also, attention should be paid to such factors as discourse structure, cultural knowledge, and general cognitive factors such as perspective-taking, as we shall see below. Of these reference-tracking devices, I will concentrate on SR in this study (for an early collection of descriptive studies, cf. Haiman & Munro 1983). This means that I will be mainly concerned with the local domain of reference tracking, i.e. tracking of participants across adjacent clauses.

2.2 Switch-reference and its treatment

There are several theoretical models of SR (Finer 1985; Broadwell 1997 within post-GB theories; Tsujimura 1987 within Categorial Grammar; Farrell et al. 1991 within Relational Grammar; and Foley & Van Valin 1984 within Role and Reference Grammar). In this paper, I will only take up post-GB models of SR for critical examination, because they make the strongest claim about language universals, and their crucial dependence on the notion of configurational structure is the largest distorting factor for true empirical generalization. I will demonstrate that the configurational treatment of SR is not tenable when faced with a wider range of data.

Let us first review Finer's (1985) analysis, which laid a basis for later studies. He argues that SR, as exemplified by the Mohave data below, is essentially a matter of anaphoric binding.

Mohave (Hokan, North America; Langdon & Munro 1979: 322–323)[2]

(4) *nya-isvar-**k*** *i:ma-k*
when-sing-SS dance-TNS
'When he_i sang, he_i danced.'

(5) *nya-isvar-**m*** *i:ma-k*
when-sing-DS dance-TNS
'When he_i sang, he_j danced.'

Here, the morphemes *-k* and *-m* mark sameness and difference of the subject. Specifically, Finer proposes that SR marking as in (4)–(5) can be treated in an

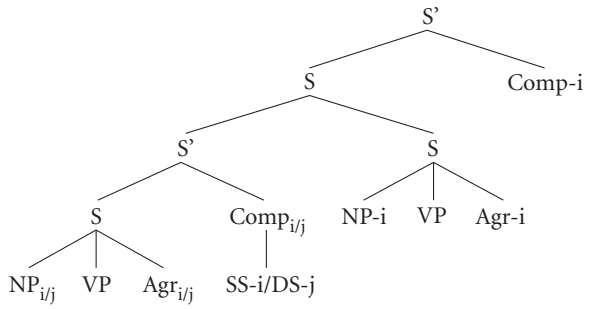

Figure 1. Configurational account of switch-reference

essentially parallel fashion to the reflexive-pronominal pair in English after due parametric adjustment:

(6) *John$_i$ believes himself$_i$ to be Napoleon.*

(7) *John$_i$ believes him$_j$ to be Napoleon.*

In passing, I wish to mention that it is a legitimate question whether a theory that builds on examples like those in (6)–(7) (where the interpretation of reflexive is clause-bound and the subordinate clause, being infinitive, obligatorily involves argument sharing) is extendable to SR at all, but here for lack of sufficient space, I will concentrate on the problems of the configurational account within the GB framework. According to Finer (1985), the uniqueness of SR lies in the fact that it operates in terms of A'-binding and this observation gives rise to the tree structure shown in Figure 1 (Finer 1985: 44, slightly modified).

SR markers (SS/DS in Figure 1), according to Finer, occur in the Comp position which is c-commanded by the higher Comp.[3] The Comp shares an index with the Agr feature of the S(entence). The same subject (=SS) marker is like an anaphor, co-indexed with the higher Comp, whereas the different subject (=DS) marker is like a pronominal, obligatorily non-co-referential with the higher Comp. Since this proposal, post-GB theories have changed in many respects (e.g. Chomsky 1986, 1995), but the notion of structural dominance still seems to be a crucial theoretical ingredient (for a well-reasoned criticism of this analysis, cf. Roberts 1988).

Finer's analysis, which I shall call the configurational approach, has serious problems. To illustrate them, I examine two cases from unrelated languages. The first case comes from non-local SR marking in Kiowa. Consider the examples in (8); the gloss [1SG/AGT:SG/OBJ] reads 'first person agent acts on singular object'.

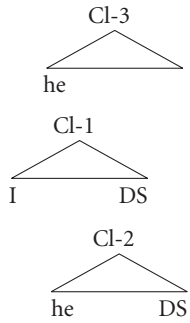

Figure 2. Switch-reference structure in example (8)

Kiowa (Tanoan, North America; Watkins 1984: 239)

(8) *gyà-cáy-tɔ̀·-**nɔ́*** *hɔ́n* *ø-bá·-mɔ̂·-t'ɔ̀·*
[1SG/AGT:SG/OBJ]-ask-FUT-and.DS NEG [3SG]-go-NEG-FUT
nègɔ́ *ø-t'ɔ́·-t'ɔ̀·*
and.then.DS [3SG]-stay-FUT
'If I ask him not to go, he'll stay.'

(9) *gyà-bô· +tǫ̀·-tɔ̀· -**nɔ́***
[1SG/AGT:SG/OBJ]-long.time-talk.to-AUX-and.DS
ɛ́-álɔ́mgyà ***nègɔ́*** *ø-ą́·*
[(2,3SG/AGT):1SG/PAT:ø/OBJ]-agree.PERF and.then.DS [3SG]-come.PERF
'I talked to him a long time and he agreed with me and came [i.e. I persuaded him to come].'

Note that in both examples reference tracking is not strictly operating on two adjacent clauses. The tracking is ['I' – DS – 'he' – DS – 'he'], so the presence of second DS marker *nègɔ́* in (8) and (9) has to be explained. Watkins (1984: ibid.) proposes for (8) the structure in Figure 2, which in itself makes sense, but sharply contradicts the configurational account of SR as depicted in Figure 1.

These examples seem to suggest that in some cases SR markers work non-locally, i.e. the first DS marker *-nɔ̀* is strictly local, while *nègɔ́* is not. The latter morpheme seems to monitor a participant that is comparatively salient in the preceding two clauses. This fact is understandable in view of the fact that *nègɔ́* is a reduced form of the combination of *-nɔ̀*, a genuine SR suffix, and *hègɔ́*, a conjunctive particle meaning 'and then'. The choice of NP for reference tracking is made on a semantic basis. Note that in Kiowa agency is a crucial factor in determining the clause structure, rather than the notion of syntactic subject:[4]

> Sameness, then, is judged according to the highest ranking participant in the clause; if both an agent and patient are present, the agent is the basis for a same/different subject. (Watkins 1984: 236)

Hence our alternative account posits that in (8)–(9) the DS marker in the first two clauses, with first and third person subjects, works locally, but then the participant higher in the agency hierarchy (in both examples 'I') becomes the pivot of reference tracking in relation to the third clause, triggering the DS marker *nègɔ́*. Note, crucially, that first clauses in (8)–(9) are jussive, so the first person has some sort of control over the third person participant. From this viewpoint, the analysis of SR does not have to involve embedding, an important point to which we shall return later.

The next problematic case with Finer's configurational account comes from a particular kind of agreement found in some Papuan languages. The following examples are drawn from Hua.

Hua (East Central Highlands, PNG; Haiman 1980: 496)

(10) *. . . hu-ro-**na** a'ina a'-mo bade-'a-mo havaBo gnu-mo*
say-PERF-3.SG this woman-PT son-her-PT small person-PT
*bro-ro-**na** ri-bai-e.*
put-PERF-3.SG take-PROG.3-FIN.A
'(the wife) . . . said and she took her small son.'

(11) *De-'a-mu' hau-re-**ga**-**na**-hi-mo bira vapa'*
man-her-ERG(!) go.up-PERF.3-MED.A-3.SG.ANT-BEN-PT there bare
*ma vapa' hu-**na** rgi' hau-bai-e . . .*
here bare do-3.SG.ANT really go.up-PROG.3-FIN.A
'Her husband went up and she shadowed him leaping from behind one tree to another, and kept going up. . .' (*bira vapa' ma vapa'*, supported by the verb meaning 'do' seems to be a fairly idiomatic expression)

In (10), which is an instance of subject retention, the reference tracking consists of ['she' – SS – 'she' – SS – 'she']. The marking of SS is by using a zero morpheme. Example (11) involves switching of the subject, marked by *-ga* (glossed 'MED.A'), and the tracking is ['he' – DS – 'she' – SS – 'she']. What concerns us now is the treatment of *-na*, glossed '3.SG' in (10) and '3.SG.ANT' in (11). There is a bit of inconsistency in the original glossing cited here, but in both examples, *-na* agrees with the subject of the *following* clause. The fact that this kind of agreement is really anticipatory is exemplified by the example in (12)

(Haiman 1980: 381). Segmentation is slightly modified and a simplified gloss is supplied by the present author.

(12) *fumo dmi-**ga-ta'a** do'e*
pork gave.me-DS-1.DL.ANT ate.DL
'He gave me pork and the two of us [someone else and I] ate.'

Here, reference tracking is ['he' – DS – 'we (dual)']. The DS marker is *-ga* (superficially identical to, but underlyingly different from, *-ga* in (11)). The subjects in the conjoined clauses not only have separate referents, but also differ in grammatical person, hence the use of *-ta'a*, anticipating first person dual subject.

The question, then, is whether this kind of anticipatory agreement can be adequately handled by a configurational approach. Before discussing this issue, let us pay closer attention to the phenomenon of anticipatory agreement. As is sometimes the case in local agreement, anticipatory agreement in the Hua SR construction may involve complex semantic computation. Compare the following example with (12) (Haiman 1980: 381; again segmentation is slightly modified and simplified gloss is supplied by the present author).

(13) *fumo dmi-**ga-da** do'e*
pork gave.me-DS-1.SG.ANT ate.DL
'He gave me pork and the two of us [he and I] ate.'

Here instead of 1st person dual *-ta'a*, singular *-da* is suffixed to the SR-marked medial verb *dmi-ga*. Haiman explains the difference in such a way that anticipatory agreement markers agree "neither with SUM [=subject of the medial clause] nor with SUF [=subject of the following clause], but rather with the set (SUF-SUM)" (Haiman 1980: 381). Put simply, it is the newly added participant that becomes the controller of agreement. That is, in (12) 'two of us' in the second clause does not include 'he' in the preceding clause, so the newly added subject-participant is 'I' plus someone else who is different from the referent of 'he', hence the 1st person dual anticipatory agreement. In contrast, in (13), 'two of us' includes 'he' in the first clause, so the newly added subject-participant is 'I' only, hence the 1st person singular anticipatory agreement.

The problematic nature of this phenomenon is obvious. For example, does it obey the general rule of Spec-Head agreement? The answer is either negative or obscure, as long as we assume that Figure 1 is the universal template for a configurational analysis of SR and try to apply it to examples (12)–(13). At least two problems arise: (a) Comp in the lower S must allow two distinct entities to occur in one position, namely SR and anticipatory Agr; and (b) it will be even

harder to come up with an analysis wherein one S is analyzed as Spec of another S, thus enabling non-local subject agreement, let alone the computation exemplified in (12)–(13). As long as one wishes to handle both SR and agreement in configurational terms, the explanation of this cross-clausal agreement would require a rather problematic machinery.

2.3 Further cases of interest

The foregoing discussion has shown that any theory that aims to handle SR and concomitant properties in configurational terms faces a serious challenge. In this section, I will take up some related cases of interest from a broader viewpoint. They do not directly speak against configurational accounts, but they demonstrate an intriguing diversity involving semantic and pragmatic factors, which would render construction-based accounts favorable.

I have already shown in the previous section that some sort of semantic computation is necessary to capture anticipatory agreement in Hua. More generally, semantics comes in when overlapping reference across clauses is taken into consideration. In the following examples from another Papuan language, the choice of SS/DS markers is directly sensitive to whether a referent is newly introduced or not.

Haruai (East Highlands, PNG; Comrie 1998b: 425–426)

(14) *ydöm an pödök^{w}ö-bö dw-**ön** n nagö pal-m-a*
yesterday we Fidako-below go-SS I you hit-PST.1.SG-DEC
'Yesterday we went to Fitako, and I hit you.'

(15) *ydöm nagö n pal-**mön** an pödök^{w}ö-bö dw-öl-a*
yesterday you I hit-DS we Fidako-below go-PRS.1.PL-DEC
'Yesterday you hit me, and we went to Fitako.'

In these examples, the reference tracking is neither strictly SS nor strictly DS. The tracking in (14) is ['we' – SS – 'I'] and that in (15) is ['you' – DS – 'we']. While the SS/DS choice in overlapping circumstances is variable across languages and the choice is often up to discourse pragmatics such as topicality, there are certain tendencies worth mentioning (for a survey of Papuan languages, cf. Roberts 1997). In Haruai, "if the referent of the final clause subject is properly included in the referent of the medial clause subject, the medial clause verb takes the same subject marker" as in (14) (Comrie 1998b: 425). Otherwise, the SS/DS choice is determined whether there is a change in grammatical person, as in (15) where 'we' means 'you and I (and someone else, as the

desinence is not dual)'. As these examples show, SR may not operate strictly on the basis of grammatical features but makes reference to the semantic notion of inclusion as well.

Next, the notion of coreference is a matter of construal in some cases. This fact is probably related to the general characteristic of SR as being based on assigned, rather than inherent, properties of a referent. Let us examine the following examples from Mparntwe Arrernte.

Mparntwe Arrernte (Pama-Nyungan, Australia; Wilkins 1988: 147; 1989: 482)

(16) *me-l-atye-le* *atyenge* *ile-ke,* *ayenge* *kweke*
mother-ERG-1.KIN.POSS-ERG 1.SG.DAT tell-PC 1.SG.NOM small
*ne-**rlenge***
be-DS
'My mother told (this story) to me when I was young.'

(17) *artwe* *are-lhe-ke* *ne-rle.ne-**rlenge***
man see-REFL-PC sit-CONT-DS
'The man saw himself [as he was] sitting down.'

Example (16) is a straightforward case of SR if we ignore, for argument's sake, the fact that the SR-marked clause is post-posed. The monitored NPs are 'my mother' and 'I' so the DS marker naturally occurs. Example (17), however, is problematic, as there is a manifestation of "split personality". Referentially, and objectively, the two subject NPs in 'the man saw. . .' and '(he was) sitting down' are identical, hence SS would be required. But in this example, 'the man' in the main clause is construed as a separate personality from the referent of the subject in the SR-marked clause. Clearly, we need more sophisticated cognitive considerations in order to license the occurrence of DS *-rlenge*. I would propose, tentatively, that reference tracking in the above examples involves some kind of partitioned representation of the universe of discourse. What is monitored is not a referent in reality, but two separate personalities, the viewer and the viewee, in discourse spaces. This twist in fact reminds us of the well-known case of English reflexives as in the following example.

(18) *I dreamed that I was Brigitte Bardot, and that I kissed me.*

Here, the predicate *dreamed* creates a new discourse space, wherein the expression *I kissed me* is licensed. Mparntwe Arrernte provides yet another interesting case. In the following example, what determines the choice of SS/DS is culture-specific knowledge.

Mparntwe Arrernte (Wilkins 1989: 480–481)

(19) *Pmere nhakwe kurn-irre-**me-le** pmere nhenhe kurn-irre ke.*
place that(DIST) bad-INCH-NPP-SS place this bad-INCH-PC
'When that place became defiled, this (related) place (also) became defiled.'

(20) *Pmere nhakwe kurn-irre-**rlenge** pmere nhenhe kurn-irre ke.*
place that(DIST) bad-INCH-NPP.DS place this bad-INCH-PC
'When that place became defiled, this (other) place (also) became defiled.'

Regarding these examples, Wilkins (1989: 480) remarks: "A special case of two separate entities which may be viewed either as parts of the one whole or as separate entities involves places which have the same totemic affiliation". If the SS marker is used, the two places "may be treated as 'parts' of the same 'whole' and same-subject marking may be used to indicate the nature they are perceived to have" (ibid.). That is, the emphasis is on the commonality of totemic affiliation. On the other hand, the use of a DS marker would "emphasize the fact that they are different places which are physically distant from one another" (ibid.). This is clearly a matter of construal relative to the frame semantics the speaker assumes (cf. Fillmore 1975; Lakoff 1987). Recent proliferation of labels for phrase structure notwithstanding, one may not quite wish to add "TotemP" node to the tree projection to deal with examples (19)–(20).

Finally, I wish to turn to more strongly discourse-oriented SR phenomena (e.g. Mithun 1993 for an in-depth study). The example is taken from Koasati. Ordinarily, SS and DS are marked by *-k* and *-n* respectively (in each example, the first line is a phonemic representation and the second line is an underlying morphemic representation; '∼' is a nasal autosegment).

Koasati (Muskogean, North America; Rising 1992: 4)

(21) *Joekak roomkã itcokhalihkok Edkã hihcok cokko:lit*
Joe-k room-∼ itcokhali:ka-**k** Ed-∼ hi:ca-**k** cokko:lit
Joe-K room-∼ enter-K Ed-∼ see-K sat.down
'Joe came into the room, saw Ed, and sat down.'

(22) *Joekak roomkã itcokhali:kon Edkak hihcan cokko:lit*
Joe-k room-∼ itcokhali:ka-**n** Ed-K hi:ca-**n** cokko:lit
Joe-K room-∼ enter-N Ed-K see-N sat.down
'Joe came into the room, Ed saw him, and Joe sat down.'

In (21), the tracking is ['Joe' – SS – 'he' – SS – 'he'], and non-final predicates, i.e. those meaning 'enter' and 'see', are marked by the morpheme *-k* (we will

not discuss the occurrence of the same form on subject NP *Joe-* here). In (22), there is switching of subject, i.e. ['Joe' – DS – 'Ed' – DS – 'he' (='Joe')]. Instead of *-k* in the previous example, the morpheme *-n* is used to mark DS here.

The problem arises, however, when we are faced with the following example, where *-k* occurs in a DS context (Rising 1992: 53; the asterisk indicates a locus for infixation).

(23)

miita	*mok*	*ilma:kat*	*itcokkahkak*
miita	ma-o-k	ilma:ka-t	it-cokkahka-k
other	3.PRO-O-K	come.PL-CONN	ILL-enter.PL-K

fayahkok	*alotkaahosit*	*ano:kak*
fayahli-õ-ko-**k**	alotka-aahosi-t	ano:ka-k
quit.PL-NEG-3.NEG-[+CONT]	be.full-very-CONN	be.done-K

roomkasik	*coki:boshcooliskan*
room-si-k	co*:ba-ki-si-hci-ooli-skan
room-DIM-K	be.big-3.NEG-DIM-ASP-ASP-CAUS

'Other people did not stop coming and entering until the room was completely full since it was quite small.'

In this example, the relevant part is *fayahkok*, glossed 'quit.PL-NEG-3.NEG-[+CONT]'. The subject of this clause is 'other people', and that of the following clause is 'the room'. According to Rising (1992: 53ff.), the apparent SS marking in this context should be understood as reflecting continuity and proximity of action and time at the discourse level, hence the gloss '[+CONT]'.

An opposite case is found in the following example, where *-n* occurs in a SS context (Rising 1992: 55).

(24)

Noahk	*piła*	*talibo:lit*	*stał:yatoolimpahco*	*maamoosin*
Noah-k	piła	talibo:li-t	st-ał:ya-toolimpa-hci-o	maamoosi-**n**
Noah-K	boat	make-CONN	INST-GO-ASP-ASP-O	CONJ-[-CONT]

(*piła*	*talibo:lit*	*stał:ya:fookok*	*ommi:k*)
piła	talibo:li-t	st-ał:ya-:fooka-k	ommi-k
boat	make-CONN	INST-GO-OFFLIN-2OM	AUX-K

Noahk	*aatimayba:cit*
Noah-k	aatim-ayba:ci-t
Noah-K	HUM.IO-warn-CONN

'Noah went about making the boat and meantime (while he was making the boat) he warned the people.'

Here the subject is 'Noah' all the way through the linked clauses. But "the activity of constructing the boat and of preaching are unrelated temporally or

causally" (ibid.), and hence the DS marker, glossed '[–CONT]', is used despite the retention of the subject. Thus in Koasati, SR marking is conditioned by discourse continuity in crucial respects.

At this point, an interim summary may be given in the following way: SR phenomena, given their diversity across languages, cannot be fully understood in genuinely syntactic, let alone configurational, terms. Rather, appeals must be made to semantic and pragmatic factors operative in individual languages and to meaningful regularities in the form-meaning interaction across languages.

3. Towards a construction-based account

3.1 Proposals

A very important feature of CxG is that it has the built-in capacity to handle variations in form-meaning pairing. At the center is the notion of schematic constructions and their different instantiations (=elaborations).[5] However, in order to capture typological generalizations, some conceptual extension is crucially in need, namely to allow for highly abstract schemas that can be applied cross-linguistically. In the present context, we shall first introduce the abstract schema for clause chaining, which looks as follows (partially following the formalism of Kay & Fillmore 1999).

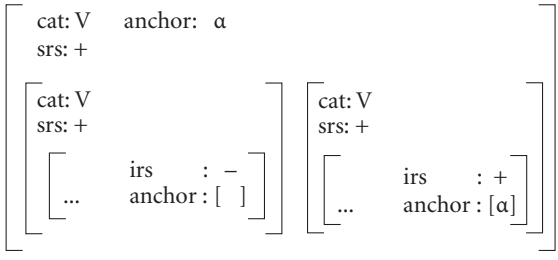

Figure 3. High-level schema

This is a considerably under-specified representation and applies to other non-SR constructions as well. It says, above all, that the whole construct is a combination of two clausal units (i.e. verbal categories with subject requirement satisfied). The fact that each unit has a subject means that "clause" here really

means clause, i.e. *not* verb serialization, action nominals, etc. In addition, it differs from coordination, which is indicated by the minus value for inflection requirement, i.e. the first unit lacks the marking of inflectional categories such as tense and modality. Consequently, the value for anchor (temporal or mental grounding of an event, e.g. past-present, realis-irrealis, witnessed-hearsay, etc.) is left unspecified in the first unit. Its value is supplied from the second unit when the two clauses get unified. The linkage type represented by Figure 3 is called *cosubordination* in RRG (which is also called *transordination* by the present author at various places, cf. Foley & Van Valin 1984; Van Valin 1993; Van Valin & LaPolla 1997; Ohori 2000). That is, the linkage does not involve embedding in the argument/complement position, but there is usually dependency of some grammatical property. Clause-linkage markers differ from language to language, but most typical are non-final verb forms and conjunctive suffixes/clitics.

This abstract schematic construction can be instantiated in individual languages as specific SR constructions by integrating the information supplied by various SR markers. If we put the schematic construction of Figure 3 and the SR morpheme together, the resulting construction can be represented as in Figure 4 (also cf. Stirling 1993 for a semi-formal treatment based on DRT and McKercher 2000 for a HPSG treatment[6]). When it is instantiated as is, we find a prototypical SR system.

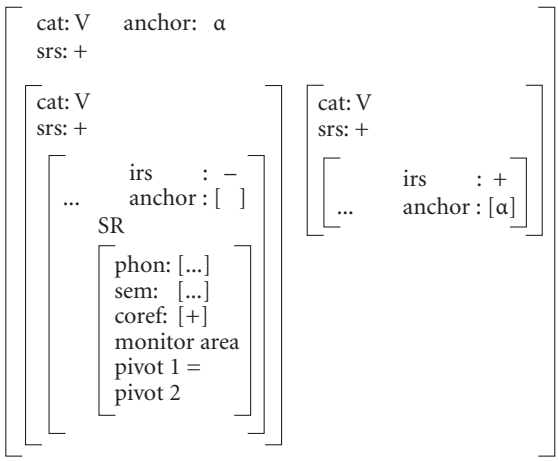

Figure 4. Elaboration on the high-level schema

While Figure 3 covers all sorts of clause chaining, Figure 4 represents its subset by the specification of "SR" which is a switch-reference morpheme consisting of a cluster of features. The feature "phon" refers to its phonological shape. The feature "sem" refers to the semantics of clause linkage. Very often it is simply sequential or simultaneous, but it can also be other semantic relations such as adversative, causal, or conditional. The feature "coref" indicates coreference. Its value is determined by referring to the "monitor area", a temporary storage of information where the pivot NP (i.e. the NP whose co-referentiality is tracked and matched across clauses) is identified.[7] The default case is that pivot selection is agency-based, i.e. semantic information is the primary input to the monitor area, interacting with the semantic role hierarchy. When the equation pivot 1 = pivot 2 holds, the value for "coref" is [+] (which is the case of SS [=same subject]), and when not, it is [–] (which is the case of DS [=different subject]). Thus in the Mohave examples (4)–(5), the SR morphemes have the phonological shapes *-k* and *-m* respectively, and the former has the [+] value for the "coref" feature, while the latter has the [–] value for this feature (the semantic relation is fairly open, and temporal overlapping would be the least problematic description). The pivot selection in the monitor area and the evaluation of coreference are very simple in both of these cases: in (4) the pivot is the same individual (whatever his/her identity may be) and in (5) the pivots are different individuals across clauses.

Language-specific variations are handled by either of the following two ways. First, the feature structure can be elaborated or reorganized. For example, the non-local SR in Kiowa can be handled by the introduction of the feature [+/– local] (cf. (8)–(9)). In Koasati, the pragmatic information of [+/– continuity] has primacy, and consequently what is relevant in the monitor area is action continuity, not mere identity, of participants (cf. (23)–(24)). In yet other cases, the monitor area incorporates further information concerning the frame-semantic *construal* of pivot NPs, as in the case of Mparntwe Arrernte (cf. (18)–(19)). Second, a language may have a routine for semantic computation, or "applet" for handling complicated cases, e.g. overlapping reference. For example, in cases like (12)–(13) (Hua) or (14)–(15) (Haruai), when the matching of pivot NPs in the monitor areas does not succeed straightforwardly, an applet is activated to deal with the situation. In (12)–(13), the value for the "coref" feature is determined by rigid identity, but the anticipatory agreement is based on who are the newly introduced individuals, the subtraction of pivot 1 from pivot 2. In (14)–(15), on the other hand, the relation of inclusion is an important determinant of the value for the "coref" feature. Here the basic instruction is: compare pivot 1 and pivot 2, and when the latter is a proper subset of the

former, assign [+] to "coref". Of course, further complications arise if we look at individual cases more closely, but the above discussion may clarify the basic features of the grammar of SR constructions.

This construction-based account is capable of handling the variation of constructions in a systematic way, and as such the perspective of CxG (especially as manifested in Lakoff 1987 and Goldberg 1995), with its emphasis on prototype effects and radial categories, is highly compatible with that of linguistic typology. I have already pointed out the problems with a configuration-based account of SR in Sections 2.2–2.3. Furthermore, given the fact that cross-linguistic uniformity of SR phenomena itself is in serious doubt, there is little reason to reduce all SR constructions to a uniform structure. In this sense too, a construction-based account is more fitting for capturing the diversity of SR phenomena.

3.2 Generalizations over form-meaning pairings

Finally, we will discuss in which way the foregoing account may lead to cross-linguistically meaningful generalizations. To start with, Figures 3–4 can be taken to mean the following things from a typological viewpoint. (a) The extensive use of clause-chaining is a precondition for the existence of SR constructions. Previously, SOV constituent order was considered one of the basic conditions for having SR constructions. This is, however, doubtful when we consider the limited significance of basic constituent order in languages with liberal word order (e.g. Australian languages). Instead, the availability of clause-chaining and co-subordinate linkage, which is common among SOV languages, seems to be more basic. (b) Clause-chaining, however, does not guarantee the existence of SR constructions, as we know from Dravidian languages, which do not seem to have well-defined SR systems. Also, Altaic languages develop SR in some cases, but not always. Japanese and Korean do have clause chaining, but no grammaticized SR (though Old Japanese has something that comes close to it, cf. (28)–(29)). Our model does justice to this reality, in that it allows for the separation of typological precondition and language-specific availability of SR markers. (c) The view of grammar as a network of form-meaning pairings makes it possible to specify what sort of pairing is common and what motivations there are for it. Further, this view offers insight into the ecology of grammar, i.e. interdependence and division of labor among subsystems of grammar. We shall see some selected aspects of this last point in what follows.

One important generalization concerning the ecology of grammar is that many SR languages lack passives. Papuan languages, for example, strongly exhibit this tendency. North American languages are a bit complicated, but even when they seem to have passive constructions, their primary function is intransitivization, not pivot-promotion for a reference-tracking purpose. An important point here is that – at least synchronically – the existence of SR systems preempts pivot-changing passives used in languages like English, and that NP-foregrounding can be achieved by other means, e.g. word order or clitics. These facts have been rather clear to typologists since the 1980s. However, in order to make any meaningful prediction about this division of labor within grammar, it is necessary to resort to the notion of grammatical constructions, with rich annotations of semantic/pragmatic information.

Another generalization about form-meaning pairings is that SR constructions, including both canonical and marginal ones, can be aligned on the scale of *clause integration* (cf. Lehmann 1988; Silverstein 1993; Givón 1995). The term is used here as a cover term for the complex interaction of form and function in clause linkage. Below is one such proposal based on Ohori (1992, 1995, 2000).

(25) Tight/strong <————————————>Loose/weak

Nominals	
Same subject	Different subject
Not realized (e.g. 'Equi-deleted')	Realized
Constrained case marking	Normal case marking
Verbals	
Reduced inflection	Elaborate inflection
Grammaticized	With full lexical content
Voice alternation suspended	Voice alternation at liberty
Operators	
Shared	Not shared
Dependent	Not dependent
Others	
No explicit signal	Explicit signal
Word order fixed	Free word order
Semantics/Pragmatics	
Action continuity	Action discontinuity
Temporal contiguity	Temporal distance
Causality	Non-causality
Dependent clause presupposed	Dependent clause not presupposed

In highly grammaticized and hence canonical SR systems, to be certain, the manifestation of the difference in clause integration may be limited to reference tracking per se. However, in less canonical and in some cases emergent SR systems, reference tracking is understood more sensibly as one of the concomitant features of the construction which jointly reflect the overall degree of clause integration. Let us look at some examples.

On the semantic side, there is a certain tendency to associate SS with closely connected events and DS with disjoint events in languages where the semantics of SR markers are not quite vacuous. One example comes from Austin (1981), who discusses SR systems in Australia. In a number of central aboriginal languages, SR markers derive from case markers, i.e. dependent clauses (in most cases loosely adjoined) are marked as such by morphemes that share certain elements with case markers. One common tendency is that SS markers originate from locative case and DS markers from allative case. Such an association may be understood in the following way: The locative marking on the dependent clause indicates that the main clause event takes place in the same setting. The allative marking, in contrast, indicates that the main clause event occurs at some distance from the dependent clause event. The rise of SR, now considerably grammaticized, is motivated by this difference in the degree of semantic closeness. Also, de Vries (1997), comparing the SR marking in Papuan languages, shows that non-finite clauses code SS while finite clauses are for either SS or DS. When finite, morphemes that are typically associated with the meaning of temporal sequence tend to be employed for SS linkage. This may also be taken to mean that semantic closeness gives rise to SS marking. In this way, the SS-DS distinction reflects relative distance of conjoined events, and where there is a difference in morpheme length, SS is often realized by zero while DS requires overt marking (Haiman 1985: Ch. 2).

The following examples from Newari, an emergent and hence not a well-defined system of SR, illustrate both of the above points.

Newari (Tibeto-Burman, Nepal; Genetti 1994: 146)

(26) *minu-n sita-ta Dā-en khor-a*
Min-ERG Sita-DAT hit-PART cry-3.SG.PST
'Minu hit Sita and (Minu) cried.'

(27) *minu-n sita-ta Dā-en-**i** khor-a*
Min-ERG Sita-DAT hit-PART-L cry-3.SG.PST
'Minu hit Sita and (Sita) cried.'

The zero versus *-i* opposition does not constitute a fully functioning SR system, Genetti observes, because there is considerable dialectal and idiolectal fluctuation. The apparent DS marking by *-i* is a relatively recent innovation, "apparently derived from the temporal postposition and subordinator *li* 'after"' (Genetti 1994: 145). But here too, the two constructions properly fit the scale of clause integration: Zero marking is associated with SS and non-zero with DS (or "open" reference, depending on speakers). Unmarked participial is associated with SS, while explicit signaling of temporal separation invites DS readings.

On the structural side, we find cases of non-canonical SR where reference tracking is indeed the outcome of the difference in the structural level of linkage. A typical example comes from Old Japanese (=OJ). Previous studies have shown that in OJ conjunctive suffixes had SR-like functions (Akiba 1977; Fujii 1993; Ohori 1992, 1994). For instance, *-te* and *-ba* were used for SS and DS respectively (both are morphologized as part of the inflectional system in modern Japanese). I have argued elsewhere that their SR functions are derivative. One support for this position comes from the relative scope of operators. Schematic representations are added for the sake of clarity.

Old Japanese (isolate, Japan; *Taketori Monogatari*, a 9th century text)

(28) *utatearu nusi-no mi-moto-ni tukau-maturi-**te** suzuronaru*
hopeless master-GEN PRE-place-DAT serve-POL-TE unexpected
sini-wo su-beka-meru kana
death-ACC do-must-MOD PRT
'(I) would serve a hopeless master and have to die an unexpected death.'

(28′) WOULD [[I serve . . .]-TE, [I die . . .]]

(29) *saihaini kami-no tasuke ara-**ba** minami-no umi-ni*
fortunately god-GEN help be-BA south-GEN sea-DAT
huka-re-ohasi-nu-besi
blow-PASS-POL-PERF-MOD
'If by good luck there is God's help, then (you) would be blown to the south sea.'

(29′) [there is God's help . . .]-BA, WOULD[you be blown . . .]

In (28), the modal operator *meru* 'would' has both conjuncts within its scope, while in (29), the like operator *besi* 'would' modifies only the second conjunct. More analytic translations of these examples would be: 'It would be the case that (I) serve a hopeless master, and have to die an unexpected death' for (28)

and 'If by luck there is God's help, then it would be the case that (you) be blown to the south sea' for (29). Here, the SS *te*-linkage is best analyzed as a pivot-sharing core juncture (corresponding, loosely, to VP conjoining), while the DS *ba*-linkage is a genuine clausal juncture, with no obligatory sharing of a modal operator. Thus, while OJ does not have zero versus non-zero opposition of linkage markers like some of the Papuan languages de Vries (1997) observed, the apparent SR functions of OJ conjunctive suffixes derive from the overall characteristics of clause linkage constructions in which *-te* and *-ba* participate. In other words, these markers serve reference tracking functions because they indicate different degrees of clause integration.

Thus far we have seen that there is a systematic interaction of form and meaning in the grammar of reference tracking across languages. Non-canonical SR systems do not vary randomly, but conform to the general tendency to associate SS with tightly integrated linkage and DS with weakly integrated linkage.

3.3 Final remarks

In the foregoing discussion, we have seen that SR is not amenable to a uniform configurational analysis. There is a rich diversity of SR phenomena across languages, which necessitates consideration of the semantics and pragmatics of SR marking. I have argued that a construction-based approach, with due conceptual extension, will provide the best solution to deal with this diversity, and that typological generalizations should be sought in terms of regularities in the form-meaning mappings. In this sense, CxG makes a viable conceptual framework for linguistic typology. At the same time, CxG will be enriched by typological studies in significant ways, especially by the latter's explorations of the functional domains and their coding that differ from the English language.

Notes

1. For the discussion of how to define constructions in terms of non-compositionality, cf. Goldberg (1995: 1–6), for example.

2. Interlinears are modestly regularized. When one morpheme codes multiple grammatical features, dots are used instead of spaces in the gloss. Abbreviations for glossing are as follows: 1, 2, 3 (person); 2OM (link to *ommi*); A (type A=1sg, 2/3pl, 3sg); ACC (accusative); AGT (agent); ANT (anticipatory); ASP (aspect); AUX (auxiliary); BEN (benefactive); CAUS (causative); CONJ (conjunction); CONN (connective); CONT (continuative, Mparntwe Arrernte); CONT (continuity, Koasati); DAT (dative); DEC (declarative); DIM (diminutive); DIST (distal); DL (dual); DS (different subject); ERG (ergative); FIN (final); FUT (future); GEN

(genitive); HUM (human); ILL (illative); INCH (inchoative); INST (instrumental); IO (indirect object); L (linker); MED (medial); MOD (modality); NEG (negative); NOM (nominative); NPP (non-past progressive); OBJ (object); OFFLIN (offline); PART (participle); PASS (passive); PAT (patient); PC (past completive); PERF (perfective); PL (plural); POL (politeness); POSS (possesive); PRE (prefix); PRO (pronoun); PROG (progressive); PRS (present); PRT (particle); PST (past); PT (potential topic); REFL (reflexive); SG (singular); SS (same subject); TNS (tense).

3. Finer's analysis is based on the so-called Government-Binding theory of Chomsky (1981), but is equally compatible with later models where the notion of functional categories is more ramified, as in Chomsky (1986).

4. Here I take "agency" in relatively broad terms as the willful instigator of an activity (cf. Fillmore 1968).

5. See for example Lakoff (1987), Langacker (1987: Ch. 2), Goldberg (1995: Ch. 3), Croft (2001: Ch. 1).

6. Admittedly, this representation is rather provisional and owes much to the analysis of McKercher (2000). The analysis proposed here, however, has the advantage of being able to handle a wider range of constructions.

7. Note that in the comparable constructions in English, namely coordinate clauses and participial clauses, there is no need for having the "monitor area". This is because the pivot in these constructions is always the syntactic subject and no extra considerations (e.g. discourse continuity) are needed for identifying the pivot NP. This situation does not hold for other languages where the syntactic subject is not as firmly grammaticized as in English.

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Index

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