REVIEW ARTICLE

Syntactic Categories and Grammatical Relations: The Cognitive Organization of Information, by William Croft, The University of Chicago Press, Chicago, 1991, xiii + 331 pp.

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0. Introduction

In theoretical linguistics, the representation of how entities participate in experiential processes—that is, the structure of events—is one of the central problems regardless of one's favored model (cf. Dowty (1991), Hopper and Thompson (1980), Jackendoff (1983, 1990), Langacker (1987, 1991), Levin and Pinker (1991), Parsons (1990), Talmy (1985, 1988), Voorst (1988), and papers in *BLS* 17, especially those by DeLancey, Partee, and Talmy). William Croft's *Syntactic Categories and Grammatical Relations* (henceforth *SCGR*) is a crucial contribution to truly viable theorization of event structure which presents lots of revealing analyses and, better yet, important questions for future research.

SCGR has seven chapters: Chapter 1, "Syntactic methodology and universal grammar" (pp. 1-35); Chapter 2, "The cross-linguistic basis for syntactic categories" (pp. 36-98); Chapter 3, "Toward an external definition of syntactic categories" (pp. 99-148); Chapter 4, "Thematic roles, verbal semantics, and causal structure" (pp. 149-182); Chapter 5, "Case marking and the causal order of participants" (pp. 183-239); Chapter 6, "Verb forms and the conceptualization of events" (pp. 240-271); Chapter 7, "Conclusion" (pp. 271-274). After this come footnotes, references, and index (divided into author, language, and subject).¹

The present paper consists of three sections. First, I will briefly outline the background and major aims of *SCGR* (section 1). Then I will

¹ Language index lacks genealogical information, so the reader must refer to the place where each language is mentioned first in order to know which language family it belongs to.

examine some of its leading ideas, focusing on the consequences of the "causal chain" model that Croft proposes (section 2). Finally, I will turn to the overall assessment of the book (section 3).

1. Background and Aims

One rationale for studying language, repeated time and again, is that it is a distinctly human ability. More precisely, language is a rich system of mental representation which constitutes an important part of our cognition. A crucial question that arises here is: if language is to be investigated as a system of mental representation, what is indeed represented—and how? It is in this context that Croft develops his theory of grammatical categories and relations in *SCGR*. According to him, language is a coding system of experiential information, and it is vital to study properties of a mentally constructed segment of the world as a primary source of constraints on linguistic structure.

Croft begins *SCGR* by contrasting two conceptions of universal grammar, namely functionalism and formalism, and opts for the former.² This issue is by no means simple, so in the following I will be concerned with only limited aspects of functionalist approaches (for more detailed discussions, cf. Newmeyer (1983: Ch. 4), Givón (1983: Chs. 1-2), Foley and Van Valin (1984: Ch. 1), Wierzbicka (1988: "Introduction"); for a survey of various conceptions of "functionalism", cf. Nichols (1984a)). This decision can be justified because, first, rigorous metatheoretical considerations are beyond the scope of this paper, and, second, the discussion in Chapter 1 is a sort of "ideal type" analysis (in the sense of Max Weber) and is not directed to any particular model.

The primary concern of *SCGR* is *grounding*, i.e. empirical basis, of

² When discussing the opposition between formalists and functionalists, one common problem is what is "formal" about the former and what is "functional" about the latter. Especially problematic is the fact that the word "formal" can refer to either mathematical explicitness or discommitment to semantic/pragmatic motivation. Croft notes this ambiguity on p. 275, and says that he intends the latter sense when using the word "formal". At the same time, the word "functional" is often used vaguely. I would take it in a mathematical sense, i.e. the systematic correspondence between two independently defined sets. One such set consists of linguistic forms and the other of extra-linguistic properties (including both conceptual-semantic and discourse-pragmatic ones). This construal seems to fit most functionalist approaches, including *SCGR*'s.

the fundamental notions of grammar. Whenever one makes a universal statement about language, it includes reference to some theoretical construct. It may be "subject", "verb", "argument", etc., but in any event it is mandatory to define these notions in an empirically adequate way. Put differently, the validity of a universal statement is guaranteed only if the essential elements of the theory are given adequate characterization. However, this requirement does not seem to have been fulfilled by most theories (especially formal ones). One way to deal with the problem is to treat notions like "noun" and "subject" as either primitive categories or primitive features (consider Relational Grammar, where grammatical relations such as "subject" and "object" are undefined primitives). But this decision leaves out the question of grounding entirely, and as such leaves the theory unconstrained (of course, simply asserting that these notions are innate does not bring us anywhere). Recall a commonly made criticism of Relational Grammar that there is no constraint on possible types of "subjects" (p. 28). Ultimately, this kind of approach seems detrimental from the viewpoint of learnability, although this issue is deliberately put aside in this paper.

Another way to deal with the definitional problem is to establish some methodology to determine category membership of examples under study. The difficulty here is that it is inconceivable that a single criterion (i.e. a syntactic test) is enough to define a syntactic category universally. Croft rejects this *universalist ideal* as unrealistic on two grounds (pp. 8-10). First, a set of syntactic tests that are used to define some category in a language do not always yield the same domain of application (=set of grammatical structures). For example, in an attempt to define "object" in English, one faces the difficulty that the NP governed by the verb and the NP that can be passivized do not have the same extension (p. 8). Second, a seemingly equivalent test (say case marking) is not able to characterize the same grammatical relation such as "subject" across languages (p. 9). Hence any linguistic theory, whether formal or functional, must provide some remedy for the failure of the simple universalist ideal.

The functionalist method for establishing the fundamental categories which Croft advocates is to take seriously the variability in the correspondence between syntactic rules (or constructions) and their domains of application, and to try to account for the conditions on the variability cross-linguistically. These conditions are in turn considered to be

motivated by the features of the experiential world (or its conceptualization). This point can be illustrated with the following diagram:

Diagram 1

Suppose these tests are employed to define the notion “subject”. Test 1 (say case marking) defines its own domain of application, and so do Test 2 (say agreement) and Test 3 (say structural position). Instead of selecting one test as criterial and abandoning the rest, Croft proposes that all tests are meaningful to varying degrees, and an analyst’s task is to reveal how and why variability occurs in the domains of application. This decision has two important consequences that differentiate the two methodologies (pp. 13-17).

First, the criterial definition of linguistic notions is abandoned, so it is not normally the case that Test 1 alone is used to define “subject” categorically while the other two tests are considered insignificant. Thus the functional-typological method adopted in *SCGR* builds on the notion of *prototype*, and all the three tests described above are able to characterize various aspects of “subjecthood”. Of course, it is possible that some tests may be more useful (i.e. cross-linguistically applicable) than others, in which case they come closer to the universal prototype.

Second, the adoption of prototype prohibits arbitrary choice of syntactic tests across languages. Significantly, this feature is not shared by the formalist method. Given the failure of the universalist ideal, formally oriented linguists freely use different tests for different languages when they define syntactic categories. Hence a formalist is able to use Test 1 for Language A (say Japanese), Test 2 for Language B (say Spanish), Test 3 for Language C (say Chinese), etc.³ In some varieties

³ One may recall a variety of tests used to establish the category VP in Japanese and other languages which were once deemed “non-configurational” by Chomsky (1981).

of formalist models, the problem of variability is handled by parametrization in universal grammar. But then this decision is not without difficulty since one needs to offer explicit constraints on the repertoire of parameters. In contrast, the functional-typological analysis is based on the assumption that "there are important linguistic generalizations to be found in the relation between a construction and its (cross-linguistic) domain of application" (p. 18). Functionalists may earn credit if they succeed in showing that variations are indeed non-random and there are cross-linguistically valid tendencies. Universal statements are given in terms of constraints on cross-linguistic variations (classical cases include Silverstein (1976) on case marking, Keenan and Comrie (1977) on relativization, DeLancey (1981) on split ergativity).

In sum, the major goal of *SCGR* is to provide an empirically adequate characterization of the categories which any variety of universal grammar may make crucial reference to. Croft considers that the starting point of grammatical analysis is the clause (pp. 32-33), and in this sense *SCGR* is a devoted study of how basic units and relations that make up the clause are motivated by their counterparts in our world of experience. Let us look at some of the key concepts elaborated in *SCGR* below.

2. Some Leading Ideas

In *SCGR*, Chapters 2-3 concern the grounding of syntactic categories such as nouns and verbs. Chapters 4-6 concern grammatical relations such as subjects and objects as well as their realization patterns. In this section too, I will proceed selectively.

2.1. Of Nouns and Verbs

Traditionally, major syntactic categories have been defined in such a way that nouns denote things, verbs denote actions, adjectives denote qualities, etc. The usual, and widely accepted, criticism of traditional theories of parts of speech is that there are lots of exceptions and hence the above generalization simply fails. But even so, there are linguistic units that can be securely identified as nouns or verbs in most (if not all) languages, and this fact needs explanation anyway. Recent advent of cognitive linguistics has shed new light on this problem (especially Langacker (1987), but cf. Lyons (1977) as an early attempt). *SCGR* is a latest contribution to this new tradition.

Croft begins his discussion by reviewing traditional grammars and more recent attempts to provide functionally motivated definitions of syntactic categories such as Dixon (1977) and Hopper and Thompson (1984) (pp. 36-50). Then he proposes an elaborate framework for defining categories employing both internal (or structural) and external (or semantic/pragmatic) criteria. His strategy is to define central members of each syntactic category on semantic and pragmatic grounds, and then to account for deviations from them systematically.

The framework developed in Chapter 2 is summarized in the following table, based on tables 2.1 (p. 53), 2.2 (p. 55), and 2.6 (p. 67):

Lexical semantics	Discourse pragmatics			
		Reference	Modification	Predication
	Objects	unmarked N <i>vehicle</i>	<i>vehicle's</i> <i>vehicular</i>	<i>be a/the vehicle</i>
	Properties	<i>whiteness</i>	unmarked A <i>white</i>	<i>be white</i>
	Actions	<i>destruction,</i> <i>to destroy</i>	<i>destroying,</i> <i>destroyed</i>	unmarked V <i>destroy</i>

Table 1

In essence, there are two parameters that define syntactic categories, lexical semantics and discourse pragmatics. The former is concerned with the conceptual-semantic type of a lexical item, and the latter concerns the function, i.e. purposeful use, of an expression in communication (Croft uses the notion of propositional speech act in Searle (1969)). Reference is defined as the function "to get the hearer to identify an entity as what the speaker is talking *about*" (p. 52), predication as "what the speaker intends to say about what he is talking about" (ibid.), and modification as "an accessory function to reference and predication" (ibid.), divided into restrictive and nonrestrictive modifications (for more wrinkles, see below). These parameters, which are language-external criteria, are given full discussion in Chapter 3. But here, I will concentrate on the theoretical consequences of SCGR's proposal, and be content with the above nutshell definitions.

The thrust of Croft's framework is that prototypical categories are defined in terms of correlations of two external parameters, and that these correlations in turn motivate the variability internal to language,

i.e. morpho-syntactic properties. The key concept here is *markedness*. An unmarked member is defined as an instantiation of semantic and pragmatic prototypes, while deviations from them are characterized by some sort of markedness (structural, distributional, etc.). As shown in Table 1, the unmarked values for nouns are <reference, object>, those for adjectives are <modification, properties>, and those for verbs are <predication, actions>.⁴ When a lexical root deviates from these prototypes, it is realized with some additional morpho-syntactic operation. In the above table, for example, either a genitive morpheme (—'s) or an adjectival morpheme (—ar) is used to mark the object (*vehicle*) as having a modificational function. Likewise, the copular *be* is used to assign a predicational function to the same root. Hence Croft proposes a strong constraint on the structure of language: "All the marked combinations of semantic class and pragmatic functions are characterized by the presence of an additional morpheme (or morphemes) indicating the—marked—pragmatic function" (p. 58; for a summary of marking strategies, cf. Table 2.6 on p. 67).

Against this line of argument, one may cite cases where pragmatically marked examples remain morphologically unmarked. English has examples like *university housing*, *state budget*, etc. In these examples, words denoting objects (*university* and *state*) are used for the purpose of modification, but are not marked as such. The class of words called denominal verbs, such as *hammer*, *book*, *mail*, etc. may also be an exception. Also, there are many languages with poor morphology (save compounding) such as Chinese. In Croft's framework, however, the absence of marking, i.e. zero-morphology for deviant cases, does not count as a counterexample. This is because, as remarked above, the generalization is given as a constraint on variation, and zero-morphology does not constitute negative evidence (pp. 58-59). What is predicted as impossible is a case in which lexical roots with the features <property, reference> are structurally unmarked while those with prototypical feature alignment are marked. Further, the above discussion

⁴ Throughout *SCGR*, hierarchies are given in the form $X < Y$, where X is the "unmarked" member. The unequal sign thus means X is "less marked" than Y with respect to some grammatical process. This notation certainly makes sense, but is somewhat tricky, because the form $X > Y$ is frequently used to mean the same thing in the typological literature, in which case X ranks "higher than" Y , i.e. X participates in some grammatical process more easily and typically than Y .

is concerned with *structural markedness*, and *behavioral markedness* is used as more sophisticated evidence for establishing syntactic categories. Thus for *university housing*, *university* cannot behave exactly like typical adjectives. It cannot be, for example, intensified (hence **very university housing*, cf. *very university-like housing*).

After this, Croft gives a more elaborate definition of lexical semantic types, drawing upon recent literature in cognitive linguistics. Semantic types, defined in such terms as valency, stativity, persistence, and gradability, are inherent properties of concepts, and can be comparable (though not directly) to Langacker's (1987) notion of *base*. Pragmatic functions are perhaps comparable to *profile*, in the sense that reference, modification, and predication are the cognitive operations imposed upon concepts (in fact, the possibility of this comparison is mentioned in Chapter 3, cf. p. 104). From p. 67 to the end of Chapter 2, there are a series of short remarks on the uses of the theory developed in this chapter. The topics include derivational morphology, predicate nominals, nominal modification, especially relative clauses, and nominalization (this last topic, named "deverbalization hierarchy" is particularly interesting; for its more systematic treatments, cf. Foley and Van Valin (1984: Ch. 6) and Lehmann (1988), among others). Any of these topics can be worth studying in depth, and an astute reader would be able to obtain interesting results by pushing further the ideas given in this chapter. Here I will briefly discuss the nature of adjectives as defined in *SCGR* (especially pp. 79-82, 88-93, and 121-123).

Cross-linguistically, adjectives exhibit a wider range of variation in their bulk in the vocabulary than nouns and verbs do. That is, some languages have a very small inventory of adjectives while others, including English, have a great many adjectives. Dixon's (1977) seminal study showed that this variation is not without systematic tendencies, which are summarized as follows:

(1)	←more basic		less basic→
	dimension	human propensity	others
	age	physical property	
	value	speed	
	color		

Lexical roots denoting such properties as given on the left column form an unmarked adjectival category even in those languages in which the number of adjectives is small, while those denoting less prototypical properties may surface as either nouns or verbs in many languages.

Croft's framework may provide a solid semantic ground for interpreting Dixon's generalization. For example, he assigns value "1" to valency of prototypical adjectives (*big, old, good*, etc.) and considers them stative and gradable. This definition is justified because prototypical adjectives denote an endpoint of some simple scale, and are different either from adjectival words denoting individuals (e.g. *male*) or from those denoting events with two or more participants (e.g. *afraid*). Put differently, lexical roots that are deviant as adjectives on semantic and/or pragmatic grounds tend to surface not as adjectives cross-linguistically, and even when they are adjectival, they tend to be morpho-syntactically marked in one way or another (cf. **more male, *twice as afraid as*).

However, when it comes to the discourse features of adjectives, Croft's account seems less persuasive. He gives evidence for the markedness criteria from the textual distribution of lexical classes based on four languages, Quiché, Nguna, Soddo, and Ute (pp. 88-93).⁵ Certainly, the correlation between lexical semantic categories and discourse pragmatic categories is very strong for the <reference, objects> and <predication, actions> pairs, but the correlation is not as strong for the <modification, properties> pair. In fact, this last type of correlation is even weaker in English and Chinese, which are studied by Thompson (1988). According to her study, the majority of adjectives (68%) appear as predicate adjectives. Croft tries to reconcile his theory and the distributional facts twice in Chapter 2 (pp. 91-92), and Chapter 3 (pp. 121-122), but neither of them seems fully justified. For example, lexical roots denoting properties are used in the three pragmatic functions in the four languages as follows (assembled from Tables 2.13-2.16, pp. 90-92):

	Reference	Modification	Predication
Quiché	0	27	10
Nguna	0	17	7
Soddo	1	14	7
Ute	0	13	5

Table 2

⁵ Here, perhaps because of an editorial mistake, number reference of footnotes is hard to follow. Footnotes 41-44 are scattered over the tables on pp. 90-92, but footnote 45 is on the text of p. 90.

He says, "[t]his result fits in with the expected patterns: the least marked roots denoting properties are modifiers by the textual frequency criterion" (p. 91), but asserting so without doing any statistical measurement (e.g. chi-square test) makes his claim rather weak. This problem becomes particularly serious with Nguna and Soddo, because the modifier: non-modifier ratio is barely 1:2 and it is hard to interpret this result on intuitive grounds. Further, the result of the four-language survey differs strikingly from Thompson's study, because in the latter the modifier: non-modifier ratio of adjectives is 2:1. Croft says that it is "possibly due to the fact that the four-language survey used oral narratives, whereas Thompson used oral conversation" (p. 122). This explains nothing, unless he develops a theory of discourse types that systematically explains the difference between the findings of the two studies. Elsewhere, Croft concedes that "in some sense, adjectives are 'nonprototypical' or even 'marked' relative to nouns and verbs" (p. 130), and that adjectives "are also intermediate in grammatical characteristics" (*ibid.*). In a way, the languages chosen for analysis in Chapters 2-3 seem to be better suited for demonstrating the intermediate character of adjectives, but there are languages, e.g. Japanese, in which adjectives look much closer to verbs than in other languages. For instance, Japanese adjectives do not require a copula *-da/-desu* for predication, and bear tense marking directly (in this connection, one may think of the possibility of motivating the difference between adjectives and "adjectival verbs" [= *keeyoo-doosi*] in Japanese by using the prototype features of adjectives).

Overall, the theory presented in Chapters 2-3 of *SCGR* is a significant achievement toward a well-grounded treatment of syntactic categories, especially nouns and verbs. Problems seem to arise when accounting for the cross-linguistic distribution of adjectives, but they can be amended if the theory of discourse function is given due elaboration and language-specific facts are properly handled. Croft (1990) is a condensed version of the material covered in Chapters 2 and 3, but the discussions of minor syntactic categories, especially adpositions and deictic morphemes, are more detailed, which can be recommended to interested readers.

2.2. The Causal Chain Model of Clause Structure

Like syntactic categories, the notions that characterize the structure of the clause—grammatical relations such as "subject" and "object",

as well as lexical relations such as “agent” and “patient”—have not been given empirically reliable definitions. When Fillmore (1968) came up with his vintage model of Case Grammar, he was severely attacked because there was no way of knowing how many deep cases would be permitted universally and how one would systematically assign deep cases to a predicate. But today, many theories of syntax take thematic roles as already given, to be used to account for something else, and do not make much effort to define them (p. 156). In *SCGR*, Croft attempts to establish a model of event structure, namely *causal chain* model, to define thematic roles, which in turn will explain the organization of information in the clause, especially case marking (Chapter 5) and voice alternation (Chapter 6). I will begin by reviewing his analysis of thematic roles.

Croft criticizes previous approaches to thematic roles, again in an “ideal type” analysis, as reductionist because they “all share the problem of vagueness and overgenerality in attempting to account for the richness of typological data” (p. 157). First, classical theories assume that thematic roles are semantically primitive, and hence “have to subsume a number of semantically distinct though related participant roles into a single unanalyzed thematic role” (ibid.). In the following examples, NPs marked by *to* or *for* would be labeled Goal in classical theories, but the semantic relations expressed are recipient, allative, and benefactive, respectively:

- (2) I gave my ticket *to the girl*.
- (3) I walked *to the church*.
- (4) Carol sewed up the pocket *for me*.

Second, classical theories assumed that there is a small finite number of thematic roles. The difficulty with this assumption is that there are a great number of instances that do not readily fit into an available set of thematic roles (p. 158). Examples are easy to list:

- (5) I used *the stick* as a club. (Function?)
- (6) We talked *about the war*. (Reference?)
- (7) He ran (*for*) *two miles*. (Extent?)

To solve these problems, Croft takes the position that the number of possible thematic roles is much bigger than it is assumed in other theories, and that “the definitions of the thematic roles must mesh in some natural way with the lexical semantics of the verbs that govern them” (p. 158). Thus, ideally, thematic roles are abstractions from the semantics of verb roots, which imposes structures on human experi-

ence.

The idea that the meaning of verbs can be used to define thematic roles is not unique to *SCGR* (cf. Foley and Van Valin (1984), among others), but it differs from other theories in its analysis of verbal semantics. For example, Role and Reference Grammar (RRG; Foley and Van Valin (1984), Van Valin (1993a)) uses lexical decomposition as a way to represent (part of) the meaning of a verb, as in the following:⁶

(8) The kid broke the glass.

[**do'** (the kid)] CAUSE [**BECOME broken'** (the glass)]

Based on this semantic representation, which says that *break* is an accomplishment verb in Dowty's (1979) sense, RRG derives the role agent for *the kid* and patient for *the glass*. It does so by defining thematic roles in terms of their structural positions in semantic representation. In the present case, agent is assigned to the argument of an activity predicate (of which *do'* (*the kid*) is an instance) if it has volitional control, and patient is assigned to that of an achievement predicate (of which *BECOME broken'* (*the glass*) is an instance) if it is non-locational and is a one-place predicate. As Van Valin (1993a: 41) notes, one great advantage of RRG is that the assignment of thematic roles to verbs is non-arbitrary when achieved in this way, because lexical structure of verbs as exemplified in (8) can be defined independently by examining their Aktionsart (cf. *ibid.* (pp. 34-36)).

Then, how is this issue treated in *SCGR*, and what advantages does it have? The starting point of Croft's causal chain model is that our commonsense construal of events is achieved by viewing them as a sequence of cause-effect pairs, i.e. "individuals acting on individuals, with some notion of transmission of force" (p. 162). The meaning of the sentence given in (8) can thus be represented as follows:

Diagram 2

⁶ In the text (p. 162), Foley and Van Valin (1984) is wrongly referred to as Foley and Van Valin (1989).

Croft defines causal chain as "a series of causally related events such that the endpoint or affected entity or the causally preceding atomic events is the initiator of the next atomic causal event" (p. 169). Potentially, causal chains may "extend indefinitely into the past and the future" and "can be circular" as well (p. 172).⁷ Individual verbs are thus considered as representing certain segments of causal chains, i.e. verbal segments. The discussion of causation types and atomic events on pp. 165-173 provides a succinct framework for the discussion of event structure, which can be recommended to everyone interested in this issue.

Based on the above diagram, the thematic roles of agent and patient are assigned to *the kid* and *the glass* respectively. In general, agent is defined as "the initiator of an act of volitional causation" and patient as "the endpoint of an act of physical causation" (p. 176). Other thematic roles such as instrument and benefactive are defined relative to their positions on the causal chain.

This model is similar to the analysis illustrated in (8) in that thematic roles of verbs are defined by their position in the representation of verbal semantics. However, this is where the similarity ends and both strengths and weaknesses of the causal chain model start to emerge. Aside from its explicitly cognitive commitment, one of its advantages is that it succeeds in capturing the asymmetry between arguments. As the causal chain is basically unidirectional, its initiator and endpoint cannot stand in a symmetrical relation. Mere listing of thematic roles cannot afford this generalization. The internal-external distinction of arguments may be fine, but it is syntactically, not semantically, motivated. Another advantage is that so-called peripheral roles are defined relative to the more salient points on the causal chain, rather than by arbitrarily subdividing semantic relations. For example, instrument is defined as "an entity that is intermediate in a causal chain between the subject (initiator) and the direct object (final affected entity)" (p.

⁷ To solve these problems, Croft introduces two notions, "granularity" and "idealized cognitive model" (pp. 163-172). The former is based on the idea that "there are different levels of precision in conceptualization, so that some concepts are conceptualized as irreducible at one level even if they are reducible at another, more 'fine-grained' level" (pp. 163-164). The notion of granularity is fairly close to that of *basic-level category* in Lakoff (1987), and it can be profitably exploited to understand what is a linguistically possible conceptualization of events.

At the center of the causal chain model is “The Causal Order Hypothesis” (pp. 184-192), which is given as follows (p. 186):

- This is the unmarked case, and other cases are given separate accounts. An important consequence of this hypothesis is that it divides oblique NPs into two classes, “antecedent” NPs and “subsequent” NPs. This division is relative to the place of the object, i.e. the endpoint of the causal chain denoted by the verb. The following diagram may help:

The first type of evidence that Croft provides for the relevance of antecedent-subsequent distinction is case syncretism. Here, “case” is taken in a wider sense, including both nominal inflections and adpositions. Based on the 40-language sample, it is reported that syncretism among antecedent thematic roles (e.g. instrumental and comitative) was found in 39 languages, and syncretism among subsequent thematic roles (e.g. benefactive and recipient) was found in 30 languages (p. 188). Exceptions were found, but the number was quite small.⁸

⁸ In this connection, an interesting claim Croft makes is that case syncretism and semantic transparency are related to the diachronic layering of grammatical structure (p. 189). In Japanese, for example, *ni* is perhaps the most polysemous and is

The second argument in favor of the bipartition of causal chain is the coding of instruments. In English, instruments are marked by the preposition *with*, but for some verbs it is possible to “promote” the instrument as in the following examples:

(10) He hit the tree with a stick.

(11) He hit a stick against the tree.

Of course, it must not be ignored that the event is construed differently in these examples. Clearly, (11) is marked relative to (10) in that the domain of application is limited (not all verbs can participate in this construction). But in Chechen-Ingush (p. 190), which takes an ergative-absolutive marking pattern, an example analogous to (11) is the normal pattern to express a clause with a transitive verb of physical contact (examples are from Nichols (1984b)):

(12) da:s wo?a: ʔam j-iett
 father.Erg son.Dat stick.Nom beats
 ‘(The) father beats (his) son with a stick.’

What is problematic about this example is that it is not “derived” from any other basic construction, despite its superficial similarity to (11). Other uses of case markers in this language are illustrated below:

(13) cuo cunna a:xča delira
 he.Erg him.Dat money.Nom gave
 ‘He gave him money.’

(14) husam da:s ürsaca kuotam ji:ra
 house father.Erg knife.Inst chicken.Nom killed
 ‘The host [lit. “house father”] killed the chicken with a knife.’

The problems can be summarized as follows: dative is used to code patient in (12) and recipient in (13), while nominative is used to code instrument in (12), theme in (13), and patient in (14). Also notice that there is a case marker that is specifically used to mark instruments in other situations as in (14).

An answer Croft offers is quite sensible. In all of the above examples, NPs marked Nom are endpoints of actions (i.e. “objects”), and

among the oldest case particles, whereas semi-grammaticalized forms such as *nituite* ‘about’ and *mukatte* ‘toward’ are obviously later innovations and semantically more specified as well (and hence may fit the causal order hypothesis straightforwardly).

those marked Dat are subsequent oblique participants. In causal chain, examples (12)–(14) can be described as follows:

Diagram 4

In this sense, the semantics of the predicate verb in (12) is more accurately paraphrasable as “cause something to move to the point of making some physical contact with something else”. This is a language-specific fact, but its apparent anomaly can be made sense of by using the causal chain representation.

A related point worth mentioning here is that the causal order hypothesis fits the typological data about instrumentals better than the classical thematic role hierarchy (as in Fillmore (1968), which has been recurrent in the literature ever since). Consider the following familiar examples:

- (15) John opened the door with the key.
- (16) The key opened the door.
- (17) The door opened.

These examples can be accounted for nicely by positing a hierarchy like Agent > Instrument > Patient for subject selection. But the problem is that constructions like (16) are strongly marked cross-linguistically. The equivalent of (16) is almost unacceptable even in genetically close languages such as German:

- (18)??Der Schlüssel hat die Tür geöffnet.
 the key Aux the door open.Past.Prt

Japanese is no exception:

- (19)??Kagi-ga doa-o aketa.
 key-Nom door-Acc open.Past

Putting aside language-specific wrinkles, typological data are in favor of

the causal order hierarchy in *SCGR*, rather than the ordinarily assumed thematic role hierarchy. That is, the English construction as in (16) is typologically deviant, and it is required to add some stipulated statement to the grammar of English, rather than to use the English-specific data to distort a typological generalization. Indeed, the fact that instrumentals belong to the antecedent class can be supported by the data from languages where word order is fixed and iconically motivated. Consider the following example from Chinese:

- (20) Tā yòng yàoshi kāi-de mén.
 s/he use key open-Result door
 'S/he opened the door with the key.'

Here, the sentence involves something like VP coordination, and the event structure is represented as follows:

Diagram 5

The first arc of the chain can be omitted, as in the following example:

- (21) Tā kāi-le mén.
 s/he open-Aspect door
 'S/he opened the door.'

The antecedent-subsequent distinction is relevant to the coding of voice alternation as well. For example, in applicative constructions, where a new NP is introduced as object, one possibility of coding the original object is by using an instrumental case. Croft cites examples from Hausa (p. 241, from Kraft and Kirk-Greene (1973)):⁹

- (22) Sun shayar manà dà shānū.
 they drink.Caus/Appl us with cattle
 'They watered the cattle for us.'

In this example, *shānū* 'cattle' is the original object in (22), but the ap-

⁹ The gloss Caus/Appl means that the verb form is "a causative but may also simultaneously be an applicative" (p. 241). I am not exactly certain what this means, but my interpretation is this: it is a naturally occurring event for cattle to drink water, and therefore when someone ('they') intentionally causes them to, it is especially for the benefit of someone else ('us').

plicative construction “demotes” it, so to speak. A detailed semantic analysis of applicative constructions is yet to be done, but Croft’s generalization that “an applicative suffix can add only the coerced endpoints of noncausal stative relations, the initiator of which is the endpoint of the root verb, or the endpoint of an event of affective causation, possibly with no mental-level entities intervening” (p. 241) seems to point to the right direction. The case marking pattern used here may appear unmotivated at a first glance, but in fact it is not, if we look at its semantic structure closely. Schematically, the semantic structure of (22) can be represented as follows:

Diagram 6

The expanded arc with *manà* ‘us’, which is semantically benefactive, is assigned an object status and the original object is marked instrumental, precisely because it is an antecedent NP in this newly conceptualized causal chain.

From the above discussions the following generalization can be drawn. The distribution of case marking across languages is not random, and is semantically motivated, especially by the antecedent-subsequent distinction. Surface case markers (including both nominal inflections and adpositions) can be understood as clusters of senses that uniquely denote certain parts of the causal chain.

There are lots of other intriguing discussions in Chapters 5–6, some of which will produce interesting results when applied to the Japanese data (for example, the case marking pattern of mental predicates discussed on pp. 213–225 will help our understanding of the so-called “dative subject” construction). Toward the end of the book is an insightful discussion of the idealized cognitive model (in the sense of Lakoff (1987)) of event structure on pp. 260–271 under the heading “What is a possible verb?”. In the remaining portion of this paper, however, I will turn to some of the (potential) shortcomings of the theory outlined so far.

First, the discussion of grammatical relations in *SCGR* is limited in its scope, as it is concentrated on coding properties as opposed to behavioral properties (in the sense of Keenan (1976)). Croft acknowledges this point himself, and therefore it is not a kind of defect that the

author is not aware of. He also states in his introduction that the aim of *SCGR* is to provide a model for the structure of simple sentences, and it is well known that many behavioral properties belong to the domain of complex sentences (e.g. control, coreference, relativization, etc.). But even so, the fact that the two types of properties sometimes exhibit mismatches requires additional theoretical considerations (Van Valin (1993b) is explicit on this point in his review of *SCGR*). In a way, the causal chain model seems most successful when accounting for the case marking of oblique NPs (including that in alternating voices), as illustrated in this section. This is natural because oblique NPs exhibit less behavioral properties than core NPs. It will be a fruitful direction of research to incorporate behavioral properties of grammatical relations into the kind of model developed in *SCGR*.

Second, from a cognitive viewpoint, it is not exactly certain if the causal chain model really reflects the way of conceptualizing events that is universal to the human mind. Causality is a highly complex concept, and involves a great amount of inferences. To build an arc between the initiator and the endpoint requires a lot of cognitive resources, and in this sense the causal chain may not necessarily be as primitive as is assumed in *SCGR*. Our casual observation of child language shows that sentences like (23) are used earlier than those like (24):

- (23) Kore koware-tyatta.
 this be.broken-Perfect
 'This is broken.'
- (24) Kore kowasi-tyatta.
 this break-Perfect
 '(I) have broken this.'

That is, there is a possibility that a more primitive mode of conceptualization is not to have an initiator in the first place. Perhaps languages may vary as to the strength of the link between the initiator and the main process, as discussed fully by Ikegami (1981). Of course, this point does not trivialize Croft's model in any way. Rather, it opens the possibility of using the causal chain as a typological variable, while the model itself can still be used to obtain interesting generalizations.

3. Concluding Remarks

Since mid-seventies, functional-typological studies have made great

contributions to our understanding of natural language. Theories to capture the wealth of data coherently have been in want ever since, and today we have a sizable arsenal of analytic concepts that seem to work to a certain extent. The first aim of *SCGR*, providing a cognitively viable characterization of syntactic categories, is largely achieved. The second aim, defining grammatical relations from a cognitive standpoint, is not as well-achieved as the first, but the causal chain model provides unmistakable insight. Despite its sometimes hard-to-follow prose, *SCGR* offers new theoretical apparatus for establishing functionally motivated language universals, and can be recommended not only to typologically-minded researchers but to those who want to look at well-studied languages afresh (cf. Hayase (1993) and Taniguchi (1993) for recent studies).¹⁰

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¹⁰ One salient stylistic feature is Croft's frequent use of *first* without *second* (or *third* for that matter) ever occurring on the following lines. This would be troublesome for those who read the book using the conventional method of paragraph reading.

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Editorial Notes

Volume 11 of *English Linguistics*, for the year 1994, contains 9 articles, 4 review articles, and 3 items in the Notes and Discussion section. The total number of submissions is up slightly in 1994. Whereas 32 manuscripts were submitted in 1993, 35 were submitted for this volume: 22 articles, 5 review articles, and 8 items of notes and discussion. The acceptance rate of papers submitted was 46%, which was higher than that for volume 10 (1993), 34%. The following table gives a detailed picture of submissions and acceptances.

Volume 11	Received	Accepted	Rate
Articles	22	9	41%
Syntax	14	5	
Semantics/Cognition	4	3	
Morphology	0	0	
Phonology	1	0	
Historical	3	1	
Notes and Discussion	8	3	38%
Review Articles	5	4	80%
<hr/>			
Total	35	16	46%

In 1994 syntax retains its place as the predominant category of articles submitted. The category of semantics/cognition comes a distant second, followed by historical linguistics. No articles in the area of morphology were submitted, although we received one submission for notes and discussion which dealt with morphology. Phonology is also conspicuous by its almost total absence. We do hope that more submissions in these areas will be forthcoming.

All of the papers that were eventually accepted required revisions to be made during a two-week or four-week period, by no means an unusual situation. Regrettably, not all the revised papers could be accepted.

Many accepted papers required extensive correction and editing; therefore, we encourage potential contributors to *English Linguistics* to consult a qualified native speaker about the language used in the manuscript, and also to refer to the style sheet found in "Information for Contributors," contained in the Directory of Members of the English Linguistic Society of

Japan, published every three years.

We encourage more members to contribute manuscripts to this journal, particularly in the areas of morphology and phonology. We have for some time been entertaining the hope of publishing two issues a year instead of one. In order to realize this hope, we need a substantially increased number of submissions.

We would like to express our heartfelt gratitude to the staff of the English Linguistic Society Secretariat, particularly Yukio Nagahara and Yasuo Ishii, for their invaluable advice and assistance.

Shin Oshima, Chairperson
Editorial Committee