Semantics and Cognition: An Introduction

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Langackerians and Chomskyites alike would probably agree that the purpose of linguistic analysis is to explicate the mental representations and processes resulting in linguistic behavior, and so a fundamental issue of current linguistic theory is the cognitive processing of meaning. The intersection of semantics and cognition has developed along at least four lines: (1) Meaning is equivalent to conceptualization, schematically and structurally represented in the human mind; (2) the meanings of clauses or sentences are essentially based on the semantic properties of predicates with reference to their argument roles; (3) phrasal constructions carry independent meanings which interact with the meanings of verbs in non-trivial ways; (4) interpretation of meaning does not rely solely on semantic structure, but is crucially ascribed to pragmatic factors (such as discourse manipulation or talk-in-interaction). The discussion that follows will sketch out these four approaches.

1. Conceptual approach

This approach has been pursued in a number of models, as in Fillmore's (1982) frame semantics, in Fauconnier's (1985) mental space theory, in Lakoff's (1987) idealized cognitive model, in Langacker's (1987, 1990, 1991, 1999) cognitive grammar, and in Talmy's (1985, 2000a, 2000b) cognitive semantics. Conceptualists address how conceptual content is structured in language, and how it is reified through image schemas, including entities like figure, ground, and path. Among the fundamental notions of spatial representations is the alignment of a reference point. The schemas in Figure 1 illustrate the two different reference points of the Mandarin sentences in (1):

(1) 'The dish fell on the floor.'

   a. pan2-zi0   diao4   di4-xia4
       dish   fall   floor-under
   b. pan2-zi0   diao4   di4-shang4
       dish   fall   floor-above

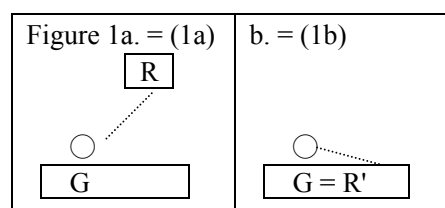Figure 1a. = (1a)   b. = (1b)
R
G
G = R'

Figure 1a illustrates the schematic relation [UNDER], assuming a reference point (R) that is higher than the ground (G)—as high as a table, or the speaker's hands or eyes. In Figure 1b, the reference point (R') is aligned with the ground (the floor), and thus from the perspective of R', the schematic relation of [ABOVE] is indicated.

For Langacker, spatial schemas shape a symbolic version of grammatical construction that operates on the component structures, the composite structure, and the various dimensional interconnections between them. The structural configuration of this genre should not be comprehended as a constituent tree, but merely as an assembly of symbolic units. From a cognitive grammar approach to lexical polysemy, the related values are represented through different profiles. For example, a nominal variant profiles a region out of a scope of predication; a preposition and a verb singly profile an atemporal schematic relation and a temporal process, in addition to the participants (Langacker ibid., Tayler 1995, 1996). As Talmy explains, the conceptual approach seeks to understand linguistic forms in terms of their functions in the representation of conceptual structure.

2. Predicate approach

Van Valin and LaPolla (1997), among others, entertain a theory that the semantic properties of predicates (especially verbs) establish the core semantic representations of a clause or a sentence. The general belief is that the type of state of affairs (dynamic or non-dynamic) is basically coded by verbs and other predicates, while noun phrases and other referring expressions simply indicate the participants involved. For instance, in the English sentence {*Michael is in the lab.*}, the linking verb denotes a non-dynamic situation, while in the sentence {*Michael runs into the lab.*}, the verb denotes a dynamic action. As lexical items often exhibit very subtle differences in meaning, the choice of verb directly affects the speaker's expression of a state of affairs.

(2) a. sut4   'hit with a rope'
    b. but4   'hit with a thin stick'
    c. bok4   'hit with a thick cudgel'
    d. put4   'hit with a knife'

The Southern Min verbs *sut4*, *but4*, *bok4* and *put4* encode the same type of a spontaneous state of affairs; i.e., they all indicate actions. However, the induced states of affairs are different, as assorted tools are connoted in the actions of [HITTING]. Given the fact that a predicate has provision for the basis of the clausal or sentential meaning, semantic representations of its arguments are defined with respect to the representation of the predicate. A concern with how the semantic arguments of predicates are linked to syntax

has consequently attracted some attention. In particular, Tenny (1994), van Voorst (1988), and Chang (in this volume) suggest that argument-linking is determined by an argument's role in delimiting an event, but not by its thematic role.

3. Constructional approach

Construction grammar (Fillmore et al. 1988, Goldberg 1995, 1996, Jackendoff 1997, and others) makes two important claims. The first is that constructions (like morphemes) are unpredictable units of meaning. In other words, the semantic representation of one distinct construction is not compositionally derived from another construction included in the grammar. For example, the Mandarin pair of active and passive sentences in (3) contains different semantic connotations:
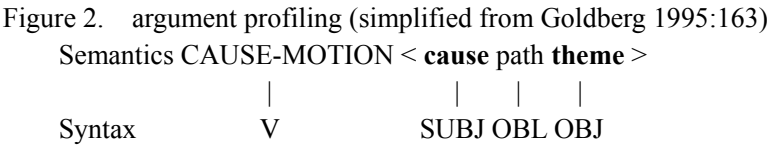
(3) a. wo3 chi1 le0   ping2-guo3
         I   eat   PRF   apple
         'I ate/have eaten the apple.'
     b. ping2-guo3 bei4 wo3 chi1 le0
         apple   PAS me   eat   PRF
         'The apple was/has been eaten by me.'

(3b) connotes that there is no apple left, while (3a) usually has no such connotation. Construction grammar blurs the line of demarcation between lexicon and syntax. Lexical constructions and syntactic constructions are treated as the same descriptive data genre, varying in degrees of intrinsic complexity. The basic tenet is that syntactic constructions, like lexical constructions, bear independent meanings.

The second claim of construction grammar is that phrasal constructions, like lexical items, can be polysemous. To be precise, a construction is typically linked with a set of related senses and should be better characterized as polysemous (like morphemes), since a strict lexical-syntactic partition is rejected. A classic example of such constructional polysemy is found in Goldberg's caused-motion construction, where various senses are selectively reproduced in (4):

(4) caused-motion construction (Goldberg 1995:161-162)
     a. Sam shoved it into the carton.
     b. Sam asked him into the room.
     c. Sam let Bill into the room.
     d. Harry locked Joe into the bathroom.
     e. Sam helped him into the car.

The central sense of the caused-motion construction specifies both causation and actual movement, as in (4a). The second sense is shown in (4b), where the motion is not rigorously entailed. (4c) and (4b) present a pair of antonymous senses: the former involves the removal of a barrier, whereas the latter presents one. The fifth sense, as in (4e), denotes a continuing status of assistance in motion. In these constructions, argument roles are associated with direct syntactic relations. Details omitted, the argument linking of the central sense in (4a) is structurally represented in Figure 2:

Figure 2.   argument profiling (simplified from Goldberg 1995:163)
        Semantics CAUSE-MOTION < **cause** path **theme** >
                                | | | |
        Syntax   V   SUBJ OBL OBJ

Also shown in Figure 2, certain argument roles are profiled (indicated by boldface) as semantic or discourse preponderant elements. Significantly, not only semantic information but also topical and focal information in the discourse is represented in phrasal constructions. In this fashion, construction grammar somehow dissolves the boundary between semantics and pragmatics.

4. Pragmatic approach

A pragmatic approach to linguistic categoriality developed since Hopper and Thompson (1984) purported that prototypicality (Rosch 1973, 1977a, 1977b, 1978) is not strictly defined by semantic representation, but that linguistic function in the discourse plays a crucial role. Specifically, a linguistic element is more saliently marked as a member of a category if it is a "discourse-manipulable participant," i.e., to signal an event or entity for potential discourse manipulation, as *Foxes* and *threw* in (5). A categorial distinction is reduced, when linguistic elements provides a background to information, as *fox-* and *throw* in (6).

(5)   a.   Foxes are cunning.
        b.   After the break, McTavish threw the log.
(6)   a.   We went fox-hunting in the Berkshires.
        b.   To throw a log that size takes a great deal of strength.
        (Hopper and Thompson 1984:708-709)

Hopper and Thompson suggest that most linguistic forms start with acategoriality and end with nounhood or verbhood. In contrast, Li and Wang (in this volume) disclose an

intriguing pattern in Southern Min whereby a member of a category may emerge as the prototype and be grammaticalized to membership in another category.

From among the burgeoning studies on grammar-and-discourse, there stand out the works of Goodwin and Goodwin (1987), Ford (1993), and a number of papers included in Ochs et al. (1996), among others, who have probed the "interactional" nature of grammar. One way of viewing this is to consider grammar as the fundamental organization for "turn constructional units" (Sacks et al. 1974, Schegloff 1996), where linguistic bursts are brought in and shaped. On the one hand, linguistic devices may function to signal completion or non-completion of a turn constructional unit, or the like; in her analysis of English adverbial clauses, Ford discovers that intonation and syntactic units indicate that a turn is incomplete. On the other hand, a change of turn may help to understand certain functions of grammatical constructions; Huang (in this volume) shows that complementation constructions in Mandarin frequently grammaticize into epistemic expressions.

5. Notes on this special volume

Leonard Talmy, a key contributor to cognitive semantics, engages in a heuristic comparison of space-structuring representations in two language systems, spoken language and signed language. He starts with a focus on the closed-class subsystem of spoken language and the classifier system of signed language. Both subsystems represent spatial situations with structural schematizations, though the basic elements of these two subsystems do not have a one-to-one correspondence. The manual-visual modality of signed language and the vocal-auditory modality of spoken language differ in three ways: conditions of iconicity, degree of parallelism, and types of representations. Nevertheless, with respect to spatial representation, these two modalities are connected by a "core" language system in the brain, a new neural model that embraces all properties of the spoken-signed linguistic systems, in contradiction to the Fodor-Chomsky model.

Ronald W. Langacker, the founder of cognitive grammar, elegantly corroborates the notion of "conceptual integration", which is an essential part of constructional meaning. In cognitive grammar, component structures of a construct are conceptually overlapping fragments which are later integrated into a composite structure. Langacker contends that the conceptual integration is a basic factor in grammaticization, a claim which is illustrated through various types of constructions in English, French, Mandarin, Thai, and other languages. The discussions eventually highlight the related values of [GIVE] in serial verb constructions: in particular, *gei3* in Mandarin may mark a recipient (similar to a preposition) and designate the same event as the main verb, or it may be grammaticalized into a benefactive and designate an event identical to one in

the recipient's experiential dominion (schematically similar to *do* in English). The cognitive grammar approach is essential to my discussions (in this volume) of the Mandarin polysemy GUO within a single category and across categories. The polysemous senses of GUO are related on the basis of the substructure profiled from an overlapping conceptual structure, and by way of mapping one cognitive domain to another (i.e., metaphor).

James H-Y. Tai and Jung-hsing Chang cast a revealing light on resultative verb constructions in Mandarin. In an attempt to elaborate the tenet of cognitive relativism, Tai presents a comparison of the action-result schemas in Mandarin and English, a comparison which leads to the psychological observation that Mandarin builds up on the phase of result while English builds up on the phase of action. In reaction to Talmy's (2000b) model, he considers the V2 of the resultative verb compound as the head which indicates the semantic zenith, and contends that Mandarin could be barely viewed as primarily "verb-framed" and secondarily "satellite-framed." Chang explores the diverse ways of argument linking in resultative verb constructions, and puts forward the proposition that argument linking is determined by the relevant event roles (or event participants) instead of thematic roles. At this point, three types of constructions serve to mark the displaced NP arguments, which is to say the constructions of BA, BEI, and Verb-Copying.

In their perceptive papers, Huei-ling Lai and Chinfa Lien take a constructional approach to grammatical categories in two Chinese dialects, Hakka and Southern Min. Lai portrays the LAU construction in Hakka as a constructional polysemy, the various semantic functions of which are closely related to the intrinsic features of the predicate, the semantic constraints of the participants, and the complement. Hakka expressions which are semantically ambiguous or underspecified (idiomatic) provide further evidence in support of the contention that a grammatical construction is a meaning-bearing unit. Lien looks into a group of covert categories in Southern Min which are underspecified semantically but obtain their meanings by integrating components of the relevant constructions. Among the interesting observations in his article is a distinction between the two related senses of *chhi*, that is, the individual-level predicate *chhi* 'raise', which indicates a permanent state, and the stage-level predicate *chhi* 'feed', which signals a transient situation.

Cherry Ing Li and Leslie Fu-mei Wang as well as Shuanfan Huang convincingly propound cognitive-pragmatic grounds to explicate grammatical categoriality and structure in Southern Min and Mandarin. Li and Wang argue for a categorial continuum between *cit-e5* the noun classifier and *cit-e7* the verb classifier in Southern Min on a pragmatic approach to prototypicality, where the noun classifier is grammaticalized to a verb classifier. The multifarious constructional uses of *cit-e* are motivated by the

speaker's communicative intent in the discourse, where the division between the noun classifier and the verb classifier is reduced or eliminated. Based on conversational data, Huang analyzes the complementation construction of Mandarin as an interactional product in talk-in-interaction. Some interesting patterns are observed: the expression *wo juede* in the matrix clause has grammaticized as a prototypical epistemic formula, whereas the complement clause is reinterpreted as the main clause; expressions like *wo xiang*, *(wo) kan* and the like have polysemous senses as being epistemic and non-epistemic; no complementizer in the traditional sense is found, as the presence or absence of the linker *shuo* reveals a distinction between *de dicto* and *de re* complements.

In brief, this special volume of *Language and Linguistics* consists of articles which enter the realm of semantics and cognition from four perspectives: spatial conceptualization, verb semantics, constructional meanings, and pragmatic functions. This volume is intended to be the first publication in Taiwan that encompasses all four approaches to the intersection of semantics and cognition. It is also the first contribution that draws on evidence from the three major Chinese dialects spoken in Taiwan (Mandarin, Southern Min, and Hakka), as well as English and signed language.

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