

REVIEW ARTICLE

Investigations in cognitive grammar. By RONALD W. LANGACKER. (Cognitive linguistics research 42.) Berlin: Mouton de Gruyter, 2009. Pp. 396. ISBN 9783110214352. \$70.

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1. INTRODUCTION. My assignment is to review, however belatedly, an individual book, but also to comment more broadly on L's recent work. The task would be easier for a full-time cognitive linguist who could guide us through the fine distinctions between L's and related models, such as the more cognitive varieties of construction grammar. Your reviewer is a fieldwork linguist, a millipede burrowing through detritus on the forest floor, occasionally catching a ray of theoretical light breaking through the canopy above. After introductory comments and the review proper in §2, I briefly assess the relationship between L's work and functionalism, typology/universals, and synchrony/diachrony in §3–5.

COGNITIVE GRAMMAR (CG) is a brand name (hence the small capitals) for L's system. It occupies a central niche within cognitive linguistics (uncapitalized), a growing confederation of linguists, many of whom, like L, advocate Saussurean form/meaning pairings not mediated by an intervening syntactic computational system, recognize CONSTRUCTIONS as autonomous schemata that are ENTRENCHED based on frequent USAGE, are sympathetic to models of linguistic change based on gradual grammaticalization, draw no sharp line between criterial semantic features and encyclopedic knowledge or between semantics and pragmatics, deny the existence of semantically empty elements such as place-holding expletives and are skeptical of phonologically null morphemes and traces, argue that semantic composition is regularly accompanied by semantic skewings of input elements, reject truth-conditional (correspondence) semantics in favor of conceptual schemata and prototypes, and inject attentional and perspectival considerations along with temporal dynamicity into grammatical analysis wherever possible.

This is obviously a broadside challenge to the assumptions of syntax-centric generative theory. In L's case the divergence is emphasized by his trademark cartoon-like diagrams with their geometrical shapes (circles, ellipses, and angled and rounded rectangles, plus shading and hatching fills of these shapes) and their solid, dashed, and dotted (single or double) lines and arrows.¹ As L explains elsewhere, his diagrams are heuristic rather than definitive, displaying whatever specific aspects of meaning or form are under discussion (2008:10–11).

2. BOOK REVIEW. *Investigations* is a collection of slightly retouched articles published from 2003 onward, plus one original article. It is nearly contemporary with Langacker 2008, a 562-page two-semester graduate textbook that systematically expounds the overall theory, and that substantially replaces L's original monumental two-volume manifesto (1987, 1991). The distilled gist of the earlier pieces in *Investigations* was integrated into the 2008 textbook, but the later ones are more independent. The pieces are called chapters, implying a book-like thematic progression that is partially achieved.

¹ I provide a reader's guide to L's iconography, major abbreviations, and key technical terms as an online supplement, which can be found at <http://muse.jhu.edu/journals/language/v090/90.1.heath01.pdf>.

‘Constructions in cognitive grammar’ (1–39) is a mini-introduction to CG, covering basic concepts like symbolic assemblies (complex meaning-form pairings), the content requirement (no elements with neither phonological nor semantic content), constructional schema, LANDMARK and TRAJECTOR (primary and secondary foci), elaboration (fleshing out a schema) versus extension (modifying or transforming a schema), PROFILE DETERMINANT (essentially an upwardly projected syntactic head), and DOMINION (an extended mental space centered on a conceptual element).

‘A constructional approach to grammaticization’ (60–80) begins with the observation that constructions rather than words are the units that undergo grammaticalization. CG assigns meanings to the components as well as a meaning (not always straightforwardly compositional) to the overall construction. Since component meanings can be fluid (e.g. due to metonymic shifts), and since even constituency (bracketing) is emergent rather than fixed, close synchronic analysis allows historical linguists to track the progress of ongoing grammaticalizations. The example here is quantificational *a lot of* and related forms; for discussion see §5 below.

‘Metonymy in grammar’ (40–59) presents L’s alternative to compositional semantics. His diagrams can accommodate mechanical compositionality, as when a schematic entity such as the trajector (subject) of a verb is ELABORATED (filled in) by a nominal with no skewing. But phrases frequently do coerce tweaking of the prototypical meaning of one or more inputs. The issue is widely known in cases of scale resetting (*big mosquito* versus *big elephant*), but it turns out to be rampant, for example, in prepositional semantics (*the fish in the water* versus *the swan in the water*) and in shifts between UNITIZED (e.g. calibration point) and nonsingular construals, which affect agreement categories of overtly nonsingular numeral phrases (*two cups of flour is/are enough*). L argues persuasively that these shifts are METONYMIC, since the meaning shift is typically just a refocusing on an otherwise peripheral or contingent aspect of the ACTIVE ZONE of the same element. In this light, metonymy (not metaphor) becomes the master trope of cognitive semantics. An interesting mental exercise is to imagine a parallel-universe version of Lakoff & Johnson 1980 called *Metonyms we live by*, whereby the ‘experiential basis’ of metaphor is reinterpreted as metonymy abstracted from prototypical cooccurrences.

The basic idea of ‘Possession, location, and existence’ (81–108) is that the possessed item (TARGET) can be almost any entity in an encyclopedic conceptual dominion controlled by the possessor (as REFERENCE INDIVIDUAL), from the perspective of an external conceptualizer. This makes sense for English, given the flexible semantics of possession. L proceeds to analyze possessive predicates in a number of languages. True to his principles, he argues for subtly distinct conceptual representations for the crosslinguistic predicative types; see §4 below for discussion.

Unfortunately, L (like many formalists) is tricked by quirks of English into treating possessors as definite determiners, or in his terms as GROUNDING elements. Definite *the* picks out the specific entity that is already uniquely salient and accessible, through proximity or knowledge shared by speaker and hearer, and L claims that the same is true for possessors: ‘A specific instance [of a type] can be singled out and characterized as the one controlled by a particular reference individual’ (87). But the absence of *the* with a preposed possessor, as in **the John’s house* or **the [the man’s] house* is an idiosyncrasy of English, where *the* and the possessor compete for prenominal position. In semantically similar possessives (English *of*-possession and analogues in other languages), especially where possessors and definite markers flank the noun, the presence/absence of the definite marker follows the same rules as for unpossessed NPs (for

example, only when discourse-definite). Possessors do restrict reference, narrowing down the set of eligible individuals from the larger set in the same way as intersective adjectives, but they only accidentally identify a unique referent in the fashion of definite markers. If, like Senator McCain, the individual owns seven houses, *his house* is unambiguous in a given speech event only if additional context is present.

'On the subject of impersonals' (109–47) argues that impersonal subject *it* in *it's hard to wash a cat*, *it's surprising that ...*, and *it rained last night* has a meaning. *It* thereby satisfies the CONTENT REQUIREMENT, which is characterized elsewhere as a 'strong working hypothesis' of CG (Langacker 2008:25). L identifies this meaning as an encompassing and maximally schematic 'immediate scope of awareness'. In the first two italicized examples just above, this is arguably correct; it is only subtly different from a movement (extraposition) analysis leaving behind a resumptive impersonal pronoun. But we should not be misled by the superficial similarity of these examples to the *it rained* type with supposedly 'ambient' *it* as also in *it's late*. Crosslinguistically, meteorological expressions frequently have (semi)referential subjects as in 'rain rained/fell' or 'sky/weather rained', and even in English we can readily say *it's trying to rain* but not **it's trying to be surprising that ...* or **it's trying to be late*. L concludes by recognizing that more work is needed, for example on direct object *it* (*she resents it that ...*) and focalizing clefts (*it's in April that ...*).

In 'Enunciating the parallelism of nominal and clausal grounding' (148–84), L returns to a favorite theme, but with a philosophically denser argument than elsewhere. GROUNDING is the process of integrating conceptual representations (of entities and eventualities) into the current speech event (converting them into referents and propositions). Since the key communicative issue for nominals is identifiability (for the addressee), while that for clauses is epistemic status, L acknowledges that the content of grounding must differ correspondingly in the two contexts. He nonetheless discerns structural parallels, based on a somewhat abstract theory of CONTROL (CYCLE) adapted from Eve Sweetser and Leonard Talmy. For clauses, L invokes a speaker's striving to achieve full EPISTEMIC control (knowledge of events) and also some degree (perforce more limited) of EFFECTIVE control in the form of hoped-for uptake by and/or behavior modification of the addressee. The key overt grounding elements for clauses are therefore epistemic and deontic modals (e.g. *may*, imperatives) and tense, while the absence of overt modals indexes full epistemic control (realis). For nominals, effective control is object identifiability, that is, guiding the addressee to pick out a privileged, already accessible entity, for example by combining a definite or demonstrative determiner with a set-denoting common noun, or by using a name or anaphor. Epistemic control, which is as shaky for nominals as for clauses, involves introducing an indefinite, especially a virtual, referent that is then hopefully accepted by the addressee as part of an embedded conceptual scenario (*Jill needs a car; it would ...*). The nominal/clausal parallels in CG are vaguely similar to those in arboreal syntactic models (NP under a determiner, VP under tense and mood). The CG account is based squarely on speech-event structure, however, and teases apart speaker and addressee perspectives.

Next is 'The English present: Temporal coincidence vs. epistemic immediacy' (185–218). For clauses without modal auxiliaries, L argues that the simple (nonprogressive) present really does function as a tense marker. Apparent time-shifted counterexamples (historical present, planned future events) are reconciled with present tense by invoking virtual intermediate structures (vividly replayed memories, mental schedules) that are conceptually active during the act of speaking. However, modal pairs like *will/would* are (arguably) still morphologically present/past, and these pairs differ epis-

temically more often than temporally. Arguing that epistemic distance is also IMMAMENT in nonmodal past/present oppositions, L concludes that epistemic distance is the general meaning (SCHEMA) of the opposition, while temporal coincidence is its most salient implementation (PROTOTYPE). Whether we agree depends on the extent to which we accept the synchronic morphological equation of *will/would* with *kill/killed*.

‘A functional account of the English auxiliary’ (219–58), the only chapter written specifically for this volume, is a full CG revision of Chomsky’s original analysis (affix-hopping, *do*-support). Modals are treated as indicated above. The auxiliary functions of *be* (passive, progressive) and *have* (perfect) are derived from their basic existential senses, in conjunction with semantic readings of progressive *-ing*, perfect *-ed/-en*, and passive *-ed/-en* (the latter two being analyzed as ‘semantic variants’ of a single morpheme). *Do*, always the trickiest, gets a multifunctional reading: it is (i) a maximally schematic verb that takes another verb as its complement, (ii) existential, occurring only in contexts where a truth value is put in play, that is, questions, negation, and inconsistent affirmation, and (iii) an unmarked modal, being incompatible with overt modal auxiliaries that specify incomplete epistemic control.

‘Aspects of the grammar of finite clauses’ (259–89) and ‘Finite complements in English’ (290–326) are again based on the control cycle, which is now elevated to be the primordial drive of *homo carpens*:

In suitably abstracted form, we can see the control cycle as being utterly ubiquitous in our own experience. ... For instance, getting hungry and seeing an apple creates a state of tension, resolved by taking and eating it; the result is a full belly and the cessation of hunger. ... I might buy a new shirt, hang it in the closet, and wear it on appropriate occasions. Socially, we encounter new individuals and achieve a kind of control by establishing a stable relationship entailing definite expectations and obligations ... At the cognitive level, we entertain new ideas, assess them for their possible validity, and resolve the matter by either accepting them in our conception of reality or else excluding them. It is not an exaggeration to say that being *alive* is to function as actor in control cycles ... (260)

A variant on this is the TENSION CYCLE, whose manifestations include ‘the explosion of a volcano’, an outburst of anger, and ‘the release of sexual tension through intercourse’ (306). This is the only reference to f...cation that I recall reading in respectable linguistic literature not analyzing bisyllabic adjectival infixes. It is followed by a graphic description of the alternate contraction and relaxation of abdominal muscles in breathing, and by a heart-warming parable of a cat who catches a mouse and then ‘decides to let it go’ (308).

L’s analysis of finite main clauses (*they will finish the project on time*) invokes both a virtual (or generalized) inner conceptualizer C and a specific external conceptualizer C₀, usually the speaker. C and C₀ may be STRONGLY IDENTIFIED (i.e. conflated and therefore fused diagrammatically), weakly identified, or disjoint. When a finite clause is subordinated (C₁ *suspects that ...*), the proposition containing the core process p is embedded in a higher clause whose subject is another conceptualizer C₁. The structure is then [C₀-C-[C₁-C-p]], with two virtual conceptualizers C in addition to C₀ and C₁. The possibility of conflation or weak identification among these four conceptualizers generates a range of epistemic options, including performatives and factives, and has implications for the linguistic expression of components of p (compare the familiar *de re* versus *de dicto* issue). Among the choices for complementizer—*that*, zero with tensed verb, *whether*, zero with untensed verb (*we saw the bomb [explode]*), *-ing*, and *to*—only *that* explicitly indicates that the proposition containing p is an OBJECT OF CONCEPTION by a conceptualizer. *That* is absent in finite main clauses, because in this case the conceptualizer is OFFSTAGE. Its presence/absence in other grammatical contexts, as

in *the fact that ...* and *I think (that) ...*, correlates with the extent to which a relevant conceptualizer is independent of the speaker.

In 'Subordination in cognitive grammar' (327–40), L reconsiders his older view that a main clause obligatorily determines the profile of the composite structure that it jointly constitutes with an adverbial, relative, or complement clause. Profile determination (cf. head projection) is well defined at lower levels (nominals, simple finite clauses). However, extending the notion to the higher reaches of multiclausal assemblages can be difficult. In terms of attentional asymmetries, the main clause ranges from the primary focus (*X has conclusively demonstrated [that ...]*) to a perfunctory, AUX-like epistemic frame (*I think [he likes her]*), through a blurry range of intermediates. The main/subordinated relationship can therefore be inverted or indeterminate. These 'exploratory' reflections bring out L's strategy of subordinating grammatical form to discourse and attentional processes.

Finally, 'The conceptual basis of coordination' (341–74) gives a CG account of several familiar issues, including collective versus plural construals (*a flock of geese is/are ...*), which also applies to conjoined nominals. Cognitive processing of a disjunctive *X or Y* constituent involves, at one level, an unstable temporal alternation between rival candidates where 'we flip back and forth between the alternate interpretations rather than entertaining them simultaneously' (355), but a more stable SUMMARY VIEW at another level (356). The discussion of disjunction, which has further nuances that I omit here, is a particularly good example of the difference between truth-conditional and cognitive semantics.

In the final section, gapped *X-X'-Y* as in *Alice came with, and Bill without, a date* is analyzed phonologically as an undivided *X-Y* clause plus an interpolated DIFFERENTIAL (*X'*) in clausally incomplete form. Conceptually, however, it is the fusion of *X-Y* and *X'-Y*, whose two *Ys* (*a date*) merge into one, even though the two occurrences are not coindexed. This is a good example of an EMERGENT noncanonical constituent, in this case discontinuous (e.g. *Alice ... with ...*), consisting of the residue after GLOBAL COMPARISON of two underlying propositions leads to the fusion of one or more shared constituents (367).

3. CG AND FUNCTIONALISM. Like some other cognitive linguists, L considers his work to be broadly functionalist in nature, though he acknowledges that its focus to date has been descriptive (language-specific). His long-term vision is of a PYRAMID, with a descriptive toolkit at the bottom level, a typologically informed cluster analysis above it, and functional explanation at the top (2008:8–9).

To sharpen the comparison between CG and functionalism, let me define the latter as a focus on language as code, that is, a system for efficiently transmitting hierarchically organized information content from speaker to addressee through a more or less flattened linear medium. In this sense, the functionalist enterprise is concerned less with fine points of the underlying conceptual and pragmatic structure than with transmission efficiency and functional trade-offs. It considers how grammars balance economy with clarity/redundancy, expressing a well-chosen but limited set of semantic features and relying on the addressee's ability to connect them and to infer unexpressed features (to use Whorf's example, inferring past time from a combination of realis mood and perfective aspect). Dynamically, functionalism interprets fixed linearization patterns as strategies, shaped by usage, that are optimized to facilitate real-time processing by the addressee.

Defined in this coldly utilitarian manner, L's work is not particularly functionalist. His main focus is on modeling completed conceptual representations rather than on

how they are encoded and transmitted, and on the individual speaker rather than on the inherited grammar. Unexpressed categories are generally absent from CG representations, so there is little covert content for the addressee to infer.

L's 'functionalism' is what I prefer to call **NATURALISM**. What L means by functionalism is the grounding of linguistic constructions in mental processes and discourse context. A good example involving mental processes is the way L breaks up multiclausal constructions into more manageable chunks, each corresponding to a **WINDOW OF ATTENTION** that respects short-term attention/memory limitations for addressee and speaker. Discourse contextualization is prominent, for example in his analysis of grounding elements, such as *the* in nominals, as devices to connect referents and propositions to the immediate speech event, where speaker's and addressee's perspectives come together. That naturalism is the best characterization of CG is consistent with L's own words elsewhere:

The principle of **naturalness** maintains that language—when properly analyzed—is by and large reasonable and understandable in view of its semiological and interactive functions, as well as its biological, cognitive, and social grounding. (2008:14, emphasis original)

4. **CG AND TYPOLOGY/UNIVERSALS**. As mentioned, the middle level in the CG pyramid-to-be is an empirical tabulation of which categories and constructions, out of those that are descriptively (i.e. cognitively) possible, are in fact common, occasional, or unattested in languages.

What shape this middle level eventually takes will tell us much about the CG project. A concern I have is the danger of over-universalizing in a theory that derives linguistic forms from universal ingredients: conceptual universals (e.g. perceptual and Gestalt features, force dynamics, perfectivity, the ontological opposition of 'thing' and 'relationship', the control cycle), cognitive mechanics (e.g. selective focus, sequential scanning, patterns of conceptual integration), and the structure of speech events. Elsewhere L comments cryptically that 'CG is thus considered by some functionalists to be a formal model' (2008:8, n. 5), and I wonder whether this refers to (the appearance of) cognitive determinism.

Consider again the chapter on 'The English present ...' and L's other writings on the subject, where both the English opposition of progressive to simple present and the folding back of time-displaced (historical present, scheduled future) events onto the simple present are motivated in a way that makes them seem inevitable (i.e. natural). Yet the English tense/aspect system is rather isolated even among European languages. The challenge for CG is to refine its ontology so that it can capture the nuances that close cross-linguistic comparison brings out.

The chapter on 'Possession, location, and existence' has a revealing section on the typology of possessive predicates, the main types being 'X have Y' and 'Y be [at X]'. L's strategy is to represent both constructions with the same conceptual elements, notably with Y being located in both cases by a **SEARCH PATH** (symbol: dashed arrow) radiating from X, but with trajector/landmark relationships switched: 'X-tr \rightarrow Y-lm' for 'X have Y' versus 'X-lm \rightarrow Y-tr' for 'Y be [at X]'. This derives from L's analysis of (static) locative adpositional phrases, where the trajector is located by means of a path emanating from the landmark (reference object). One wonders how a dative or allative version, that is, 'Y be [for/to X]', would be handled. L briefly analyzes some other typological variations: '[X's Y] exist/be', 'X Y-have' with Y incorporated as an undetermined stem into a verb, and 'P have Y' where P is a place. (More on possessive predicates in §5 below.)

L has elsewhere commented in a general way on the interplay of conceptual universals, culture, and language-specificity. He and his first cohort of students at the University of California, San Diego, worked intensively for a time on nearby Uto-Aztecan languages such as Luiseño. This language is mentioned several times in this book, which also has passages on other non-European languages. However, L's recent work has focused rather heavily on English. The typological middle level of the pyramid is still largely a promissory note, and no detailed evaluation can be handed down now.

5. CG AND SYNCHRONY/DIACHRONY. Like many cognitive linguists and typologists, L's favored diachronic model is grammaticalization theory. Indeed, he was the first North American exponent of this theory, long before it went viral.

'A constructional approach to grammaticization' is the fullest exposition of this topic in the volume under review. Its key observation is that *a lot of* ~ *alotta* hovers synchronically between phrasal and fused (monomorphemic) status, on its way to becoming an unsegmentable quantifier similar to, and competing with, *much/many*. L drills deeply into the meanings of *of* and *a*, displaying his considerable skill in the interpretation of semantically light function morphemes. *Of* is ambiguous between RESTRICTED SUBPART (i.e. partitive) and COEXTENSION readings, as in *a flock [of [those sheep]]* versus the most common reading of *a flock [of sheep]* (67). In the coextension reading, the semantic contribution of *of* is redundant; for example, in *a flock/a lot of sheep*, the head noun *flock/lot* merges with *sheep* anyway. Indefinite *a* elsewhere normally denotes a single individual, new to the discourse, that is picked out of a larger set, but in *a lot of* (as in *a few* and *a little*) it simply denotes a POSITIVE INCREMENT, that is, a rough masslike nonempty scalar value (76), which is already expressed by *lot*. The more or less redundant status of both *of* and *a* favors rebracketing of [*a lot*] [*of sheep*] as [*a lot of*] *sheep*, and ultimately the compression of *a lot of* into an unsegmentable quantifier *alotta*. What I miss in this otherwise excellent discussion is recognition that *a lot of* is just the latest in a line of constructions expressing the sense 'many Xs' and/or 'much X'. The point is that languages need such a construction, so there is an external pull factor (especially when an incumbent construction is fading) as well as a construction-internal push factor. In addition, outgoing incumbent constructions provide schematic templates that incoming constructions can follow. In one passage L briefly catches this:

... the independent existence of nominals of the form QNT+N ... offers a model for an alternative analysis [i.e. *alotta X* as opposed to *a lot of X—JH*], whether it facilitates the changes or merely provides a way to assimilate the resulting structure in the grammatical system. (74)

That pull is at least as important as push is shown by the improbable semantic connection between above-norm quantity and the original lexical sense(s) of *lot* as 'allotment, share'.

A similar point can be made about the chapter 'Possession, location, and existence', which ends with a discussion of cases where originally locational 'Y be [at X]' is STRENGTHENED over time into a possessive predicate in which X has the same kind of ACTIVE CONTROL as in 'X have Y' counterparts. This diachronic progression of 'Y be [at X]' is the mirror image of the ATTENUATION of original 'X seize/hold Y', through 'X have Y' denoting active control, to schematic locational sense (*We have a lot of earthquakes in California*). This two-way diachronic street violates a major premise of grammaticalization theory as frequently expounded, viz., that grammaticalization can only take the form of bleaching out (schematization, pragmaticization) of concrete semantic content, traveling down a well-trodden path of change. My hard-core functionalist take on the two-way street identified by L is that languages have a continuous need for an

active-control possessive predication, and if an original construction with this sense loses productivity, another construction (from either the ‘seize/hold’ or locational domains) is seized on to fill the functional gap, whether this entails strengthening or weakening. ‘Y be [at X]’ becomes an active-control possessive not just because of its own built-in momentum or manifest destiny (push), but also and mainly because the language has a compelling need (pull).

6. CONCLUSION. L has doggedly built out CG, from its humble origins as SPACE GRAMMAR (Langacker 1982), into an impressive theoretical edifice that cannot be ignored. But given the philosophical and representational differences between CG and syntax-centric generative linguistics, how does one compare them, choose between them, or synthesize them? Alas, there is no fiscal cliff to compel bipartisan compromise, and no particle accelerator to settle high-stakes empirical issues. This is a great dilemma for linguistic theory.

Because so much of CG is L’s own single-handed effort rather than a mass movement, and in view of its idiosyncratic notation and terminology that leave some readers cold, it may be that its long-term significance will be in its influence on other approaches, including ‘descriptive’ practice. Having begun this line of work as a heretic, joining other refugees from the oppressive High Formalism of the East Coast in the balmy refuge of California, he observes more recently, with some justification, that ‘the discipline has evolved in its [CG’s] direction’ (2008:vii). I will occasionally look up from the detritus to see if this trend continues.

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