Adele E. Goldberg, *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press, 2006. vii + 280 pages, ISBN 978-0-19-926851-1, £ 70 (hardback), ISBN 978-0-19-926852-8,£ 17.99 (paperback).

Reviewed by n. j. enfield, Max Planck Institute for Psycholinguistics

The 'construction' has long been a key weapon in the grammarian's almost Quixotic struggle to describe linguistic systems, a project undertaken today with conceptual tools developed a century ago by pioneers like Boas, Saussure, Sapir, and Bloomfield. Our workaday practices have evolved with technology, but the modus operandi remains unchanged: collect and transcribe a representative corpus, then exhaustively account for everything that occurs in it. This account will comprise (i) a list or inventory of structures that each have to be learned, and (ii) a set of rules or generalizations by which items in (i) may be combined to yield the token structures observed in the corpus (and in principle to yield further grammatical sentences ad infinitum).

The core theoretical contention of construction grammar is that this list-rule model is wrong, because the contents of so-called lists and rules are instances of the same thing: form-meaning mappings at the type level. Langacker (1987) put it this way when he proposed that rules may be re-cast as symbolic form-meaning pairings called "constructions". In this sense of construction, form is not specified in phonological terms but more abstractly as arrangements of types of linguistic item, where these types are defined by relatively schematic semantic specifications inherent in open constructional slots, called "elaboration sites". Such a site may be instantiated by any linguistic element whose meaning is compatible with more general semantics of the slot. In other words, these slots are offices for which lexical and similar items may qualify

to serve as incumbents (Fillmore 1988: 41). The resulting process of semantic unification is wholly productive (cf. Chafe 1970, Wierzbicka 1988).

Goldberg's new book *Constructions at work* builds on the insights of Langacker and Fillmore, adding many more insights of her own, along with those of fellow travelers (see Goldberg's Chapter 10 and Croft & Cruse 2004: Chapter 10 for surveys of the construction grammar family of approaches). She pays particular attention to the problem of language learning and brings findings of experimental psychology and its methods to bear on a list of questions which linguists have been unable to settle empirically. The book marks a milestone in Goldberg's brilliant career and makes a timely contribution to the ongoing visibility of construction-based approaches to grammar.

Goldberg defines the construction as a form-meaning pairing, grouping together two kinds of structure which linguists traditionally keep distinct: words and grammatical constructions. Yet the term "construction" is used in the book with two senses: (i) more broadly, any "form meaning-pairing", including both words/morphemes and grammatical constructions, and (ii), more narrowly, any grammatical construction as opposed to the words/morphemes that appear in it. In the classical form-meaning pairing that Saussure described, form is specified in phonological terms. Recognizing word/morpheme forms is a process of taking phonetic tokens to stand for phonological types. By contrast, the form of a grammatical construction is further from the surface. In mapping constructional tokens to constructional types, a listener must identify phonologically defined words/morphemes before he can identify the construction. Two tokens of a construction may have little or no phonological form in common, and so the sense in which they have "identical form" needs to be clarified. Can we treat words and grammatical constructions as literally the same type of entity? Or are the differences significant enough to warrant keeping them distinct, as traditional linguistics would suggest we do? The strong proposal to treat words/morphemes (formally defined by phonology and distribution) and grammatical constructions (formally defined by class and configuration) as a single type raises interesting questions for research. To be concretely instantiated, a grammatical construction depends on the phonologically-defined morphemes it incorporates. What, then, are the relations of dependency between form-meaning pairings of the two types? Grammar is said to be "constructions all the way down" (p. 18). How far down is down? Are there no constraints on the number of levels? Fleshing out these questions will help to convince many who are well-disposed to a construction grammar approach yet still wonder whether it is more than a useful re-description of the basic list-rules model.

Goldberg contextualizes her work within the core concerns of linguistic science since the 1950s. She begins by setting out the same desiderata that legitimized generative linguistics' contribution to founding the cognitive sciences: We need to understand language as a cognitive system, we need to understand

it as a generative system, and we need a non-trivial account of how language is learnt by children. Goldberg asks the biggest questions going: What is language? What is it like and why is it like that? How is language psychologically represented? How is it learnt? In the tradition of her home discipline of Cognitive Linguistics, she proposes that the answers are in cognitive capacities not specific to language.

The book's sustained orientation to Chomskyan linguistics, concerned both with defining what is shared with Goldberg's approach and what is not, is familiar from functional and cognitive linguistics generally. But readers of Bloomfield 1933, for example, may view construction grammar less as a radical alternative to Chomskyan linguistics, and more as a theoretically progressive, empirically grounded development of good old structuralism. Bloomfield's work shows striking similarities to construction grammar. He argued, for instance, that grammatical arrangements have meanings, for which he proposed a term: the episememe. Despite being widely cited for semantic pessimism, Bloomfield treated grammatical structures in terms of their meanings (e.g., "actor-action", "goal-action", "instrument-action", "place-action"; Bloomfield 1933: 173–174). Further, his ideas on language learning and productivity are consistent with arguments laid out by Goldberg in Part II of her book (and in more detail in related work such as Tomasello 2003). Bloomfield (1933: 276) proposed that grammatical patterns allow analogies by which we may create novel utterances, remarkably prescient given what we now know about the importance of analogical thinking in general cognition (Gentner et al. (eds.) 2001; cf. Langacker 1987: 446–447 on the effective equivalence of analogy and schema-based constructional unification). Finally, the importance of frequency – critical to Goldberg's compelling account of learning in Part II – was not lost on Bloomfield either. Anticipating an entire movement in corpus-based linguistics, he wrote, "fluctuations in the frequency of glossemes play an important part in the changes that occur in every language" (1933: 277).

Of course, Goldberg's version of grammar differs from pre-war structuralism in important ways. Most obvious is a modern foregrounding of cognition in a scientific account of language. Bloomfield himself was ambivalent about the role of psychology in linguistics, but then contemporaries like Sapir could not have been more explicit that psychology mattered for language (cf. also Peirce, Vygotsky, and Mead, among others). Once we see the passing Chomskyan phase as a phase and not as the origin of our discipline's most important pursuits, we will situate modern insights such as those of construction grammar within a genuinely cumulative science.

It is no doubt Chomsky's dominance in linguistics that motivates Goldberg's sustained efforts in Part III to answer, or pre-empt, challenges for constructionist approaches to handle some of the more recalcitrant phenomena dear to generativist hearts. When a functionalist proposes that language can

be learnt without domain-specific knowledge, a voice in the audience will ask "What about subjacency?", "What about subject-auxiliary inversion?", "What domain-general cognition could possibly account for these?". Goldberg delivers a sustained head-on attack on these lingering doubts, a valuable laying-out of the kinds of answers a functionalist should have up his sleeve. But the arguments need upgrading to knock-down status: my feeling is that skeptics will remain skeptical. Still, Goldberg provides ammunition, usefully bringing current arguments together in one place, and breaking ground in the ongoing wrestle with nativism. The questions raised should drive many research projects to come.

Linguistic typological diversity receives relatively little attention in the book, although Chapter 9 concentrates on proposed universals and possible explanations in terms of general cognitive principles. Croft's version of construction grammar (Croft 2001) is a sustained treatment of just this theme, and Goldberg's Chapter 9 is limited in scope by comparison. She nevertheless provides assurances that construction grammar can straightforwardly handle great structural diversity. Goldberg implies that her approach is closer to Croft's than it is to other versions of construction grammar, but this is so only up to a point. While Croft's path leads him to conclude – radically – that there are no crosslinguistically stable grammatical or other structural categories (cf. also Haspelmath 2007), Goldberg wants to maintain a "more traditional" position as to the comparability of languages (p. 226). How this is to be done remains to be seen. Comparability will ultimately have to be anchored in semantic structure (Haspelmath 2007: 127–128), but Goldberg is surprisingly non-committal as to how meaning should formally be represented, and thus how it might be directly comparable across languages (see Goddard & Wierzbicka (eds.) 2002 for proposals). This is in line with Goldberg's general backing away from formalizing her version of construction grammar, in contrast to kindred approaches which are busy trying to narrow in further on making the nature of constructional unification as explicit as possible.

Correspondence address: Language and Cognition Group, Max Planck Institute for Psycholinguistics, PB 310, 6500 AH Nijmegen, The Netherlands; e-mail: nick.enfield@mpi.nl

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