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BOOK REVIEWS

H. Diessel. *The grammar network: How linguistic structure is shaped by language use.* Cambridge: Cambridge University Press, 2019. xvii + 289 pp. ISBN 9781108671040

Reviewed by Feng Xu (Henan Polytechnic University)

Many cognitive linguists and usage-based linguists (Bybee, 1985; Langacker, 1987, 1988; Goldberg, 1995; Croft, 2001; Beckner et al., 2009; Hilpert, 2014) view grammar as a network, especially in terms of morphology and lexical semantics. However, as this book notes, such a viewpoint “has not yet been developed into an explicit theory or model” (p.2). To address this gap in the literature, Diessel presents a dynamic network model of grammar in this book to provide a unified framework for the analysis of language use and linguistic structure, highlighting how the model functions in syntax analysis and frequency effects on language acquisition and language change.

The book includes a total of twelve chapters, which are arranged in four parts. Chapter 1 (*Introduction*) acquaints the reader with a few general ideas shared by usage-based researchers. Challenging the traditional views of structuralist linguistics and generative linguistics, usage-based linguists (including cognitive linguists) question three general divisions in syntactic theory, namely, “(i) the division between linguistic knowledge and language use, or competence and performance, (ii) the dichotomy of synchronic states and diachronic development, and (iii) the distinction between words and rules” (p.2). The challenge to this three-fold division clearly references three basic tenets in usage-based linguistics: domain-general cognitive processes shape linguistic structure in language use, the focus of analysis is on the dynamics of the linguistic system (Hopper, 1987, pp.141–142), and the notion of constructions (including words and rules) is of immense importance in linguistic research. This introductory chapter concludes by stating the central aim of the book: to offer a detailed and coherent account of domain-general processes and the network architecture by presenting a dynamic network model of grammar.

Part I (*Foundations*) consists of two chapters which inform the reader of some basic assumptions of this study and provide a theoretical basis for later research. Chapter 2 (*Grammar as a Network*) proposes a nested network model of grammar and introduces six relations involved in the network model. Similar to Langacker’s view (1987, pp. 83–87), Diessel makes a distinction between lexeme and construction according to the number of meaningful elements. Inspired by

the mental lexicon and encyclopedic knowledge, Diessel argues that “a language user’s knowledge of linguistic signs includes associative connections to other linguistic signs so that every linguistic sign – lexeme or construction – can be seen as a node of a symbolic network” (p.12). At a higher level of cognitive organization, three relations are adopted to specify associations between various linguistic signs, which include lexical relations, constructional relations, and filler-slot relations. Diessel further defines the linguistic sign itself as a network at a lower level, containing symbolic relations, sequential relations, and taxonomic relations. This network model of grammar demonstrates a perfect combination between vertical and horizontal links, compensating for shortcomings in previous studies because, “not much work has been done on horizontal links” (Smirnova & Sommerer, 2020, p.2).

Chapter 3 (*Cognitive Processes and Language Use*) provides an overview on domain-general cognitive processes involved in language use and explains the relationships between grammar, usage, and cognition. Diessel argues that an unconscious decision-making process involved in language production performs a crucial role in dictating how grammar, usage, and cognition are related, since they are motivated by competing cognitive processes from the domains of social cognition, conceptualization, memory, and processing. The various processes complement and compete with each other in language use and the competition between social cognition and memory-related processes plays a central role in online language use and language development.

Part II is entitled *Signs as Networks* and consists of three chapters. Chapter 4 (*The Taxonomic Network*) surveys the taxonomic organization of grammar and the emergence of constructional schemas. Diessel supports the viewpoint that “the same information on linguistic structure is often stored redundantly at different levels of abstraction (Langacker, 1987, pp.132–137; Croft, 2001, p.56)” (p.44). Constructional schemas are the results of abstraction or schematization of similar forms or meanings of lexical sequences. Meanwhile, constructional schemas are used to categorize (or license) novel linguistic experiences or novel tokens. Diessel adopts two perspectives, a bottom-up (abstraction) and a top-down view (categorization), to analyze the taxonomic organization of grammar, of which the former is the focus in this chapter. To some extent, abstraction and categorization have demonstrated an inverse interaction between language use and cognition. In other words, the effect of language use on cognition is generally created by abstraction, while the influence of cognition on language use is primarily generated by categorization. Empirical evidence on L1 acquisition and language change shows the key roles of abstraction in schema extraction and the emergence of new schemas, respectively. However, Diessel also reminds readers that “language change typically involves the modification and extension of existing

schemas rather than the extraction of entirely new ones” (p.39). This point fully exemplifies Diessel’s argument that adult language use, specifically the cognitive processes involved in adult language use, is the driving force behind language change.

Chapter 5 (*Sequential Relations*) focuses on sequential relations in words and syntax and the emergence of lexical prefabs. Linguistic knowledge includes numerous lexical prefabs activated by single choices, which “facilitate utterance planning and sequence processing” (p.88), but sequential links also play a crucial role in syntax. The author illustrates sequential relations connecting linguistic elements in sequence with several examples. Bybee (2002) conducts a corpus study on the strength of sequential links. Her results found that the strength of sequential relations between nouns and postposed attributes is much lower than that of sequential relations between nouns and preposed determiners and adjectives. Similar studies suggest that the contraction rate between subject and auxiliary correlates positively with their joint frequencies (Krug, 1998, 2003; Barth & Kapatsinski, 2017). Therefore, Diessel concludes that “the strength of sequential links between lexical items is contingent on frequency” (p.85) and the rise of the units of speech is influenced by both conceptual factors and frequency effects.

Chapter 6 (*Symbolic Relations*) concentrates on different cognitive processes involved in the semantic interpretation of two kinds of symbols: lexemes and constructions. According to Diessel’s understanding, a lexeme functions as a node in a network to activate an open encyclopedia of knowledge, while a construction provides a general explanation for semantic content activated by lexical strings. This chapter also concludes that symbolic relations are created by domain-general processes, such as conceptualization, pragmatic reasoning, and automation.

Part III is entitled *Filler-Slot Relations* and contains three chapters. This part concerns the interactions between lexemes (fillers) and structures (or slots) within the framework of a dynamic network model. It seems that Diessel has been greatly influenced by Langacker, who argues that a usage-based approach “emphasizes the importance of low-level schemas” (1987, p.494) and “low-level schemas are preferentially invoked (other things being equal) for the categorization of novel expressions” (1999, p.145). Consequently, Diessel focuses his analysis on schemas with slots (low-level schemas) and filler-slot relations between lexemes and low-level schemas in the following three chapters.

Chapter 7 (*Argument Structure and Linguistic Productivity*) outlines a network model of argument structure and considers factors affecting linguistic productivity. Drawing on research from three types of constructions, Diessel argues that the filler-slot relations between verbs and verb-argument schemas are shaped by the semantic compatibility between verbs and schemas and language users’ experience.

Chapter 8 (*A Dynamic Network Model of Parts of Speech*) examines parts of speech from a dynamic network view. Diessel proposes that the analysis of parts of speech depends on associative connections between lexemes and specific slots of constructional schemas. In other words, correlations between the semantic and formal properties of grammatical word classes stem from the interaction between lexemes (fillers) and constructions (or slots). The author asserts that the morphosyntactic properties of parts of speech can be regarded as both properties of lexemes and properties of specific slots of constructional schemas.

Chapter 9 (*Phrase Structure*) details a dynamic network approach to the study of phrase structure. In this chapter, Diessel distinguishes between compound phrases and grammatical phrases based on whether a grammatical function word exists in the phrase. Research has shown that the distinction between compound phrases and grammatical phrases “is of central importance to the usage-based analysis of constituency” (p.174), and that they are shaped by different cognitive processes. For instance, the order of verb and object (compound phrase) relates closely to that of noun and relative clause because of analogy. Owing to grammaticalization, the order of adposition and noun (grammatical phrase) correlates both with that of noun and verb and with that of genitive and noun. Therefore, the Greenbergian word order correlations have been redefined as “a network of locally related constructions” (p.186), which are commonly analyzed in terms of analogy and grammaticalization.

Part IV is entitled *Constructional Relations* and consists of three chapters. Inspired by the concept of “ecological location” offered by Lakoff (1987, pp.462–494), Diessel argues that each construction has a definite position in a grammatical system and the definition of the construction depends on its relations with other constructions in the system. To a great extent, constructional relations broaden the overall system of constructional network and give detailed consideration to horizontal relations between constructions, which relate to each other in terms of similarity and contrast.

Chapter 10 (*Construction Families*) analyzes the relations between constructions with similar forms or meanings at the same level of abstraction and studies the effect of similarity on the development of grammatical structure. In this chapter, constructional relations are described from word order phenomena in English, which come from sentence processing, language acquisition, and language change. Wells et al. (2009) claim that the difference in processing between subject and object relatives depends, in part, on the relationship between relative clauses and main clauses. Diessel and Tomasello (2005) propose that the similarity between subject relatives and main clauses expedites children’s ease with using subject relatives. Research on subject-auxiliary inversion in Early Modern English further demonstrates that “the development of both SAI families was

influenced by the increasing dominance of the S-V-(O) family of declarative sentences” (p.216).

Chapter 11 (*Encoding Asymmetries of Grammatical Categories*) studies pairs or groups of (semantically) contrastive constructions. In this chapter, Diessel regards case marking as the focus of analysis and examines its encoding asymmetries. This chapter studies encoding asymmetries of grammatical categories by comparing the system of optional object marking with the system of differential object marking. The results indicate that the encoding asymmetries in the two systems stem, respectively, from speakers’ assessment of listeners’ needs and linguistic conventions. Diessel thus concludes that encoding asymmetries correlate with both frequency and “an intricate interplay between other-oriented processes of social cognition and self-oriented processes of memory, analogy and activation spreading” (p.248).

Chapter 12 (*Conclusion*) summarizes the key ideas in the book and indicates how the dynamic network model of grammar can be applied in the future.

To conclude this review, I would like to highlight two major strengths of this book. The first strength is that this book has proposed a successful dynamic network model of grammar. Diessel’s dynamic network model exhibits a brilliant performance in its overall internal coherence, its heuristic value, and in comparison, with other competing models, which are three criteria for evaluating a model (Bates & MacWhinney, 1989). This network model demonstrates the combination of a dynamic network model of grammar with domain-general processes, which contributes to its internal coherence. Some new ideas in the model, including linguistic signs as networks and the distinction between “compound phrases” and “grammatical phrases”, reflect the model’s heuristic value, in part because new ideas have been regarded as essential criteria for evaluating the success and effectiveness of a model (Bates & MacWhinney, 1989). Previous models primarily concentrate on either lexical relations or partial constructional relations. For example, Bybee (1985) focuses on lexical connections, but neglects syntactic relations in her network model of morphology. Langacker’s usage-based model (1988) does not chart global relations between constructions because of its over-reliance on “categorizing relationships” to link constructions. And Goldberg (1995, pp.72–81) overemphasizes inheritance links in her network model, where vertical relations are the focus, while horizontal relations lack sufficient attention. By contrast, this dynamic network model of grammar provides a comprehensive study of constructional relations. In other words, it addresses morphological and syntactic relations, stresses the links in meaning and form, and considers vertical and horizontal relations equally.

The second strength is that this book successfully avoids common pitfalls of cognitive linguistics, while also looking toward possible future developments in

cognitive linguistics. Dąbrowska (2016, p. 479), in her research, identifies seven serious problems plaguing cognitive linguistics. Among them, we find the following: an excessive reliance on introspective evidence, a lack of serious treatment of the Cognitive Commitment, a disproportionate focus on the hypothesis formulation, and neglect of the social aspects of language. In notable contrast, this book combines corpus data and experimental data with introspective evidence to test its hypotheses. It draws on general research from cognitive psychology and treats the Cognitive Commitment seriously. Furthermore, it integrates cognitive processes of social cognition into the network model and justifies its assertion that “there is no doubt that social factors influence language use and language change” (p. 25). In this book, synchrony and diachrony have an equal position in language description, which is reflected in most linguistic studies based on synchronic and diachronic evidence. Meanwhile, the linguistic object of inquiry and linguistic evidence in the book cover a wide range of languages, pursuing a remarkable combination of typology and cognitive linguistics. This book has expanded its object of inquiry across time (from synchronic to diachronic) and space (from one language to many), which suggests future directions for research in cognitive linguistics (Divjak et al., 2016, pp. 455–457).

While much of Diessel’s argumentation is very persuasive, two weaknesses still exist that need to be addressed. Firstly, the dynamic model, at least in this book, does not attempt to use all six relations to describe a specific linguistic phenomenon. If a specific linguistic phenomenon were described by all the six relations in the model, the hypothesis that “all aspects of linguistic structure, [...], are analyzed in terms of associative connections between lexemes, categories and constructions” (p. 2) would garner further support. Another potential weakness of the model proposed by Diessel is that it does not probe into the distance between constructions or the strength of constructional links. The author devotes considerable attention to the strength of sequential links calculated by “conditional probability” (p. 81), noting that “there is a negative correlation between the strength of sequential links and the strength of lexical associations” (pp. 75–76). Both sequential links and lexical associations only involve the links between lexical items. But what about the distance between constructions or the strength of constructional links? What parameters or methods can be used to measure the strength of constructional links? These questions merit further investigation in this dynamic network model because “how to assess ‘distance’ among members of a network is central to arguments about the role of analogy and ‘best fit’ in change” (Traugott & Trousdale, 2013, p. 11). In fact, the “distance” in the previous quotation mainly refers to the strength of constructional links.

This book is undoubtedly of excellent quality and rigor. It has purposeful prose, clear structure, novel ideas, a solid theoretical foundation, and convincing

arguments. Based on a usage-based approach, it has presented a systematic and dynamic network model of grammar, which aims to give a comprehensive and unified account of various grammatical elements and demonstrate a combination of a network model of grammar with domain-general processes. It approaches the study of grammar from an interdisciplinary perspective, including usage-based linguistics, cognitive linguistics, construction grammar, cognitive psychology, etc. Considering the aforementioned characteristics, this book can appeal to a broad readership and boasts remarkable potential practical application and notable value for linguistic studies.

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Address for correspondence

Feng Xu
 School of Foreign Studies
 Henan Polytechnic University
 2001 Shiji Road
 Jiaozuo Henan 454003
 P.R. China
 15839182309@126.com

Biographical notes

Feng Xu is a doctor and an Associate Professor in Henan Polytechnic University (China). His research interest includes cognitive linguistics with special focus on cognitive grammar, and diachronic construction grammar with special focus on constructionalization and constructional changes, and corpus linguistics. He has published some articles on these topics.

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