

Lotte Sommerer & Elena Smirnova, eds. *Nodes and Networks in Diachronic Construction Grammar*. Amsterdam/Philadelphia: John Benjamins, 2020. Pp. vi + 355.

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Considering that cognitive-constructionist theories of grammar (e.g., Croft 2001, Goldberg 1995, Langacker 1987) have widely gained in popularity over the last three to four decades, their application to the study of language change has been a surprisingly recent development. Researchers working within the novel framework of “Diachronic Construction Grammar” (e.g., Barðdal et al. 2015, Hilpert 2013, Traugott & Trousdale 2013) promise to link up the description of diachronic phenomena with psychologically informed models of the cognitive processes underlying language use. The present volume extends this research program by illustrating how historical analyses can be informed by a core notion from cognitive linguistics, namely that speakers’ knowledge of language consists of a mental network of form-meaning units related to each other via various associative links. Based on a wide range of corpus evidence, the contributors highlight novel insights that a network perspective can add to the investigation of both classic diachronic case studies, such as the emergence of the English *going to* future or the *way*-construction, and less well-known phenomena, like the Dutch intensifying fake reflexive resultative construction. The contributions stem from a workshop entitled “Advances in Diachronic Construction Grammar” held at the 50th Annual Meeting of the Societas Linguistica Europea (SLE), 10-13 September 2017, at the University of Zurich.

The volume consists of an introduction by the editors and nine research articles, grouped into three parts. Part I of the collection, entitled “The nodes: Creation, change and loss”, focuses on the emergence of new nodes, viz. constructions, in the network and the modification and loss of existing nodes. “Constructions” are here defined in the wide sense typical of Construction Grammar approaches, encompassing linguistic units at different levels of complexity (from morphemes to clausal patterns) and schematicity (from fully specified to abstract underspecified units). Part II, “The links: Vertical and horizontal relations”, shifts the focus to the “node-external” links between different constructions, and how changes in those relations can account for diachronic developments. The network is assumed to be organized by two main types of links: “vertical” taxonomic relations between a more schematic construction

and its less abstract subtypes, and “horizontal” relations between constructions at the same level of abstraction. The final Part III, “Beyond existing models”, comprises further attempts to incorporate missing aspects in the network model, such as the traditional notion of grammatical “paradigms”, and the Saussurean distinction between syntagmatic and paradigmatic links.

In the first paper of Part I, “Constructionalization and the Sorites Paradox: The emergence of the *into*-causative”, Susanne Flach discusses potential problems of Traugott and Trousdale’s (2013) widely used concept of “constructionalization” in accounting for the creation of new constructions in the network. Most crucially, she argues, the concept is ambiguous between a “point” and a “process” reading, referring both to the gradual changes leading up to the creation of a new construction, and the instantaneous moment of node creation itself. Flach suggests resolving this ambiguity by restricting constructionalization to its “point” reading and subsuming any preceding or subsequent changes under the umbrella term “constructional emergence”. She illustrates her proposal with a corpus study of the English *into*-causative, illustrated in (1), during the Early Modern English period (1500-1700).

(1) *You hectorred me into telling the truth.* (p. 52)

Flach’s data indicate that the construction developed from the earlier caused-motion construction (e.g., *He moved the army into France*) via a stepwise extension of its oblique phrase to nominal *-ing* (*into mourning*) and later to sentential *-ing* (*into telling the truth*). While the author regards the emergence of the sentential reading towards the end of the 17th century as the point of constructionalization, she concedes that the actual moment of change may have taken place earlier, since many examples of *-ing* phrases during the 17th century were already ambiguous between a nominal and a sentential reading. This suggests that a “point” reading of constructionalization is an attractive theoretical concept but remains challenging in its practical applications.

In “Constructionalization, constructional competition and constructional death”, Lotte Sommerer argues that even though the emergence and disappearance of constructions are often intricately connected, constructional “death” has so far gained little attention in Diachronic Construction Grammar. She explores the decline of the family of DEM POSS/POSS DEM co-occurrence constructions during Old English, i.e., noun phrase structures which contained both a demonstrative determinative and a possessive, as in (2).

- (2) *Se heora cyning ongang þa singan & giddian*
That their king began then to sing and to recite
'then their king began to sing and to recite' (p. 71)

Based on her corpus data, Sommerer first rectifies previous claims in the literature, showing that the co-occurrence patterns were much less frequent than assumed, and did not necessarily originate as Latin calques. She then argues that the disappearance of these constructions was caused by the emergence of a new abstract schema that specified a single obligatory slot for definiteness marking. This constructional schema, the author proposes, subsumed all the previously existing NP structures, including the co-occurrence constructions as well as bare nouns without definiteness marking, via analogical reasoning on the speakers' part. This can be modelled as a reconfiguration of links in the network, in which horizontal links between the different NP constructions emerged as they became vertically related to an overarching schema. While Sommerer suggests the term "constructionalization *novo loco*" for such cases in which a construction emerges in "a new, previously unoccupied space" (p. 96) in the network, this leaves open the question of how "unoccupied" spaces in the network can be identified and how similar a new construction has to be to an existing one for it to "substitute" the other ("constructionalization *in situ*"), rather than count as a new node.

Starting off Part II on vertical and horizontal relations, Emmeline Gyselinck's paper "(Re)shaping the constructional network" zooms in on more recent changes in the Dutch intensifying fake reflexive resultative construction illustrated in (3), which combines a reflexive pronoun and an intensifier to express that "the verbal activity is boosted or performed with a heightened intensity" (p. 109).

- (3) *Als cliënt van deze firma betaal ik me elke maand blauw.*
as client of this firm pay I myself every month blue
'As a client of this firm, I pay a lot of money every month.' (p. 108)

After demonstrating an overall increase in the productivity of the construction between 1800 and 1999, the author examines differences in the development of selected subconstructions that combine specific intensifiers with variable verbs. The increasing productivity of the intensifier *suf* 'drowsy', which initially occurred only in two lexically fixed micro-constructions but developed into an increasingly abstract schema, is thus contrasted with the opposite development of the intensifier *wild* 'wild', which started out as a productive

subschema but later became restricted to a few lexically fixed combinations. Gyselinck concludes her article with interesting implications for network theory, among them the notion that speakers may sanction instances of the construction simultaneously via both intensifier-specific and verb-specific subschemas – a discussion that might have benefited from incorporating the concept of “multiple inheritance” addressed in previous constructionist research (e.g., Croft 2001, Goldberg 1995).

In “Productivity and schematicity in constructional change”, Florent Perek explores the relationship between two key concepts that are frequently invoked to characterize (changes in) the status of constructions within the network: schematicity, or “the level of abstraction at which a construction is represented”, and productivity, “the ability/property of a construction to recruit a wide range of lexical items as slot fillers” (pp. 141-42). The core claim is that the schematicity of the lexical slots inside a construction should be distinguished from the schematicity of the constructional meaning itself, and that productivity is directly related to the former but not necessarily to the latter. To illustrate this, Perek examines the recent history of the English *way*-construction since 1830, and its increasing extension towards abstract metaphorical motion senses as in (4).

(4) *He has forced his way into good society.* (p. 157)

Using an innovative methodology, the author classifies the types of abstract motion encoded by the corpus instances according to their underlying conceptual metaphors, e.g., ‘A Group of People is a Container for its Members’ for the example in (4). The data indicate that the set of metaphors used in the construction has grown over time, which can be interpreted as a rise in schematicity of the constructional meaning. Meanwhile, the author also discusses previous evidence (e.g., Israel 1996) that many new verbs came to be used with the *way*-construction during the same period, suggesting that the schematicity of the construction and the productivity of its verb slot may not be entirely independent. Perek points out that such a relationship remains “speculative” since schematicity and productivity “are manifested differently in the data” (p. 163). The underlying argument seems to be that the rise of metaphorical senses in his study (as a proxy for abstract constructional meaning) is assessed independently from the verb types used in the construction. While this may be the case, many of the metaphorical motion senses seem to be posited based on the nature of the oblique argument (see example (4) above, where *into good society* forms the basis for the conceptual metaphor). If the oblique phrase is also regarded as an open slot in the constructional schema,

this calls into question whether the schematicity of the construction can really be evaluated in isolation from the productivity of its slot fillers.

In “Constructional networks and the development of benefactive ditransitives in English”, Eva Zehentner and Elizabeth Closs Traugott discuss the emergence of the “benefactive alternation” during the Early Modern English period (1470-1700) as a case of complex link reconfiguration in the constructional network. The benefactive alternation, illustrated in (5), describes the ability of a particular class of verbs to occur in both a double-object construction (DOC) and a prepositional object construction (POC) with the preposition *for*.

- (5) a. *John baked Mary a cake.*
b. *John baked a cake for Mary.* (p. 169)

By analyzing frequency changes of the DOC, *for*-POC and *to*-POC (the latter prepositional pattern still being used as an alternative to the *for*-POC in Middle English), the authors demonstrate that individual verbs became increasingly associated with either the DOC or the *for*-POC during Early Modern English and that the prototypical benefactive verbs came to combine more frequently with the *for*-POC than with the *to*-POC. Zehentner and Traugott interpret this as evidence that the *for*-POC became gradually established as “a viable and strong alternative” (p. 187) to the DOC. They model this development via the creation of horizontal network links between the alternating DOC and *for*-POC, which acquired the status of “allostructions” (Cappelle 2006), i.e., structural variants of a common “benefactive” schema. While this theoretical account is illuminating, the quantitative trends are somewhat less clear than the authors might want to acknowledge by referring to “certain noise in the methodology” (p. 191). Most notably, the relative frequencies of the DOC and the prepositional patterns are almost reversed between their two analyses (one comprising a large set of verbs, but focusing on benefactives with pronominal recipients; the other using a smaller sample of verbs but including examples with non-pronominal recipients). While this is likely due to the fact that datives and benefactives with pronominal recipients prefer the DOC (noted by the authors on p. 182), it may cast some doubt on the strong conclusion that DOC uses of benefactives “are increasingly lost and are overtaken by prepositional uses” (p. 191).

In “Allostructions, homonstructions or a constructional family?”, Michael Percillier analyzes changes in the network of English prepositional secondary predicate constructions (SPCs) during the Middle English period (1150-1500). He starts out from the observation that

present-day resultative and depictive patterns with the preposition *as*, illustrated in (6), were commonly expressed with alternative prepositions like *for*, *to* and *into* in Middle English and that the semantic restrictions of the specific prepositional patterns changed over time.

- (6) a. *He entered the restaurant as a hungry man.* (subject-oriented depictive)
b. *He appointed him as press secretary.* (object-oriented resultative) (p. 222)

Using distributional semantic methods (Perek & Hilpert 2017), which group patterns according to how similar their collocational environments are, Percillier identifies semantic changes in the corpus data, from which he then infers potential shifts in speakers' representations of the constructional subtypes. For example, the results indicate that *to*-SPCs with subject- and object-oriented meanings were semantically quite distinct in the earliest corpus period, which could suggest that *to*-SPCs were "polysemous" (in the sense of Goldberg 1995) between a subject- and an object-oriented subtype of the construction. This polysemy was subsequently lost when *to*-SPCs became increasingly restricted to object-oriented uses. Another interesting finding is that while semantically similar patterns in the early corpus period tended to share the same form (i.e., the same preposition), semantic similarity in the late corpus periods was more strongly determined by the predication type (resultative vs. depictive). This may suggest that *as*-, *for*-, *into*- and *to*-SPCs developed into structurally different but semantically similar "allostructions" (see above), before post-Middle English developments introduced new semantic differences. Percillier's article also stands out from the rest of the collection by integrating an element of language contact into the network model: based on evidence that native verbs and Anglo-Norman loan verbs were used in different semantic environments for most of the Middle English period, the author suggests that speakers may have represented English and French-based SPCs as separate "homonstructions" (a term coined in analogy with lexical homonymy).

In "Converging variations and the emergence of horizontal links", David Lorenz discusses the emergence of analogical links between pairs of alternating constructions, focusing on the history of *to*-contraction in American English since the 19th century. His corpus results indicate that the forms *gonna*, *wanna* and *gotta* established themselves as the reduced variants of *going to*, *want to* and *got to* in the early 20th century, ousting previous competitors like *goin ter*, *wanta* or *got ter*. The author then examines how speakers' representations of the contracted and full forms changed during the 20th century, arguing that the contractions emancipated increasingly from their full forms and developed from phonetically reduced

“pronunciation variants” into separately stored “lexical variants”. Lorenz traces this shift on two levels (see Schmid 2020): the cognitive level of “entrenchment”, operationalized via parameters such as sentence length, and the socio-pragmatic level of “conventionalization”, assessed via variables like text type. The analysis provides convincing evidence that the contracted forms became increasingly more entrenched in cognitively complex environments and less strongly associated with slang or specific accents. In addition, the variation between contracted and full forms became more similar across the three items *gonna*, *wanna* and *gotta*, which suggests that speakers formed analogical links between the three pairs. Lorenz uses Leino & Östmann’s (2005) concept of a “meta-construction” to capture this “generalization over relations between constructions” (p. 264). His study thus provides important evidence that “proportional analogies” (*a* is to *b* as *c* is to *d*) can be identified in diachronic corpus studies in a bottom-up way, contributing to the growing literature on the crucial role of analogical reasoning in language and cognition (e.g., Fischer 2018).

Gabriele Diewald’s paper “Paradigms lost – paradigms regained: Paradigms as hyper-constructions” forms the first of two chapters in Part III of the volume, which comprises more large-scale attempts to extend existing models of the linguistic network. Diewald’s chapter differs from the other articles in that it relies on a detailed theoretical discussion and selected examples rather than quantitative corpus analysis. The author’s main concern is that the notion of grammatical “paradigms” has been lost in (Diachronic) Construction Grammar, even though “the formation of paradigms is the distinctive and unique criterion separating grammaticalization from other types of change” (p. 279). Using the emergence of the German future tense with *werden* + infinitive between the 13th and 16th century as an example, Diewald argues that while this process was gradual, its endpoints constituted categorical distinctions between the members of the tense paradigm. She proposes a reconceptualization of the notion of paradigms from a network perspective, namely as a “hyper-construction” which defines grammatical distinctions in a functional domain (e.g., tense) and consists of a limited number of cells (i.e., constructions) related by vertical and horizontal relations. Diewald’s attempt to incorporate traditional grammatical key distinctions such as tense, aspect or concord into the network model is a highly relevant concern. With the claim, however, that paradigm formation is a necessary condition for grammaticalization, and that lexical and grammatical items are categorically distinct, the author positions herself, and quite deliberately so (pp. 292-95), at odds with the central constructionist tenet that grammar and the lexicon form a continuum (e.g., Croft 2001). While Diewald may be right in holding previous constructionist analyses accountable for their vague or negligent treatment of paradigms, her own view may lean too

far towards the other extreme. If “grammar” and “grammaticalization” are restricted to sets of constructions that can be neatly arranged in paradigmatic tables, then a large class of constructions which do not fit this criterion (such as the *way*-construction, see p. 280 in the article) will be treated as lexical idiosyncrasies and relegated to the peripheral sphere of what the author identifies as “idioms, fringes, in-betweens etc.” (p. 297).

Sarah Budts and Peter Petré conclude the volume with their article “Putting connections centre stage in diachronic Construction Grammar”, in which they use connectionist computational methods to study the emergence of horizontal links between constructions. Importantly, they extend the focus beyond the paradigmatic relations highlighted in the other chapters and argue that network links can also be syntagmatic, i.e., capturing relations between linearly co-occurring constructions. Syntagmatic horizontal links are the target of their first case study in which they argue that the shift of English *be going to* from its original motion sense to its future meaning was facilitated by the co-occurrence with two other constructions or “bridging contexts”: topicalization, which deprofiles the motion component, and passives, which deprofile the notion that the subject is in control of the action. Using corpus data from the period between 1477 and 1700, the authors show that non-motion uses of *be going to* increased more rapidly in topicalized than in non-topicalized sentences, and deprofiling of control increased more steeply in passives than in actives. This, they argue, suggests that the birth of the *going to* future relied on shifts in its horizontal syntagmatic connections – even though their analysis does not answer the question of how crucial exactly the role of the two bridging contexts was for the constructional genesis. The second case study targets the emergence of paradigmatic horizontal links between periphrastic *do* and the English modals *can, may, shall, will* and *must* during the period when *do* developed its auxiliary function. Using Artificial Neural Networks (ANNs) to measure distributional similarities between forms of *do* and the modals in a corpus, the authors find that the forms *does* and, to a lesser extent, *did* became increasingly more similar to the modals over the course of the 17th century, suggesting that the integration of *do* into the auxiliary paradigm progressed via a strengthening of its paradigmatic connections. Surprisingly, however, the older form *doth* already displayed high similarity with the modals at the beginning of the period, which raises the open question of whether the original step of reanalysis already took place before the time window under investigation (starting in 1580).

In sum, the present volume brings together an exciting range of proposals on how a dynamic network model of language can contribute to the analysis of diachronic change. The corpus methods used by the authors include state-of-the-art techniques like collocation

analysis, distributional semantics and even more advanced computational tools like artificial neural networks, which have yet to become more widely applied in (historical) linguistic research. The contributions illustrate not only how a cognitively oriented network perspective can provide diachronic scholars with a new conceptual framework in which constructional change can be modelled as a reconfiguration of linking patterns between nodes, but also how the careful analysis of language change can in turn inform network models which have so far been largely posited based on synchronic observations. The volume thus provides strong evidence that historical corpus data can complement psycholinguistic experiments in assessing the psychological plausibility of network structures, and the way in which these are shaped by speakers' general cognitive abilities such as analogical reasoning.

The many strengths of the collection do not hide the fact that the articles also raise some important open questions. One particular issue that deserves further clarification concerns the relationship between horizontal and vertical links. None of the authors provide a clear account of what exactly marks the difference between the two types of relations, or how they interact with each other. While Sommerer argues that vertical links signal "relatedness through inheritance" and horizontal links symbolize "partial similarity" (p. 92), Gyselinck notes that subschemas are "abstraction[s] over formal or semantic similarities between specific linguistic expressions" (p. 120), which suggests that partial similarity lies at the heart of both vertical and horizontal links (see also Lorenz, pp. 244-45, and Diewald, p. 298). Zehentner & Traugott outline that horizontal relations between subconstructions, once they are strongly entrenched, give rise to vertical relations with a schema (p. 196; see also Budts & Petré, p. 343), but they also note that "the distinction between vertical and horizontal links is difficult to uphold" (p. 194). It therefore remains subject to discussion whether horizontal and vertical links encode the same or different kinds of information, and how future accounts can transcend this two-dimensional conceptualisation of the network, which as the editors point out (pp. 31-34) remains a stark simplification. The fact, however, that the volume raises these and many other "big picture" questions highlights its relevance to diachronic grammarians as well as the wider circle of researchers interested in cognitive-functional accounts of the linguistic network.

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