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Mikko Höglund, Paul Rickman, Juhani Rudanko & Jukka Havu (eds.), *Perspectives on complementation: Structure, variation and boundaries*. Basingstoke: Palgrave Macmillan, 2015. Pp. xv + 252.

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This volume is devoted to the area of verbal complementation, bringing together eleven chapters written by experienced as well as upcoming researchers in the field, working in a range of broadly cognitive frameworks such as Cognitive Grammar and construction grammars. The book is divided into three parts that represent different perspectives on complementation. Theoretical contributions are grouped together in the first section, entitled ‘Structure’. The following section, ‘Variation’, aims to both describe and account for variation in complementation patterns. The volume ends with papers grouped under a section entitled ‘Boundaries’, which explore and discuss the features separating complements from adjuncts.

The volume starts with a short introduction, written by Mikko Höglund, which provides a brief summary of the content and import of each chapter, but without setting any agenda for the volume. Complementation is loosely considered to be ‘the idea that the complement completes the linguistic manifestation of some abstract unit of meaning’ (1).

Chapter 1, ‘Constructions license verb frames’, by Laura A. Michaelis, begins the volume by providing a general treatment of complementation within a specific construction grammar framework, Sign-Based Construction Grammar (SBCG),

which is discussed in some detail. This theory combines formalisations from Head-driven Phrase Structure Grammar (HPSG) and insights from Berkeley Construction Grammar (BCG). Both theories share the assumption that grammar is ‘a network of linguistic patterns defined by constraints on form, meaning and use’ (14). After SBCG is outlined, the rest of the chapter is devoted to presenting evidence suggesting that constructional approaches to complementation (with verbs combining with constructions) have a descriptive advantage over Aktionsart models.

Chapter 2, by Jouni Rostila, entitled ‘Inside out: Productive German prepositional objects as an example of complements selecting heads’, looks into two different perspectives on complementation, a ‘traditional’ view whereby heads determine properties of their complements, and an alternative approach which turns this view inside out, as stated in the chapter’s title. This is the view offered by Construction Grammar (Goldberg 1995, 2006), according to which constructions impose constraints on the form and meaning of the lexical elements occurring in them. This is illustrated with German prepositional object complement constructions, e.g. *Er zweifelte an seinen Fähigkeiten* (as well as similar patterns in English and Swedish). The author ends the chapter with a suggestion that there might be ‘a cyclic change in languages from predominantly verb-centred complementation to the predominance of [argument structure-]constructions and vice versa’ (36).

Chapter 3, ‘A cross-linguistic perspective on complementation in the *Tough* construction’, by Jukka Havu & Mikko Höglund (two of the editors of this volume), investigates the complementation of the *Tough* construction in English, Spanish and Finnish in an impressive range of corpora (CLMETEV, the Corpus of Early American Literature, BNC, COCA and COHA; and CORPES XXI, CREA and Corpus del Español; the authors do not specify a Finnish corpus). This construction (e.g. *This book is easy to read*) is interesting in that its complement clause has a ‘gap’ in the object position, whose interpretation is found in the matrix clause. The authors describe and exemplify the construction abundantly, and discuss whether or not the complement clause can be omitted (and under what conditions), while corpus materials allow them to provide diachronic information about the emergence of this construction in the three languages. An interesting cross-linguistic generalisation that emerges from the analysis is that the adjectives that are allowed in the *Tough* construction are semantically defined, i.e. ‘the less semantic content they have, the more easily they occur in the [*Tough* construction]’ (71).

The five chapters in the ‘Variation’ section present analyses and accounts of variation in a number of complementation patterns. Chapter 4, ‘Variability in clausal verb complementation: The case of *admit*’ is authored by Hubert Cuyckens & Frauke D’hoedt. The authors apply a logistic regression model (‘the closest a corpus analyst can come to conducting a controlled experiment’ (88)) to corpus data from Late Modern English and Present-Day English (the Corpus of Late Modern English Texts, the Old Bailey Corpus and Wordbanks Online), in order to attempt to account for the choice of complement of the verb *admit*.

Several factors affecting the choice (including animacy, voice, complement type (-*ing*/*to-ing*/*to-infinitive*/*that*-clause/*zero complementizer*, among a host of others) are examined and coded for. Subsequently, a logistic regression model is applied to the corpus data. This technique systematically tests the potential contribution of each factor to constructional choice while keeping the other factors in the model constant. Predictor factors are grouped together in conditional inference trees, a technique involving iterative binary splits of the data until an optimal fit is found. The results of this analysis (or rather, the authors' interpretation thereof) seem to lend support to the Cognitive Complexity Principle (Rohdenburg 1996), according to which 'in a cognitively complex environment, more explicit grammatical options tend to be favoured' (95). The authors find a correlation between the presence of an overt complementiser *that* in cases of structurally complex complement clauses (e.g. *Meanwhile you will perhaps admit that a little charity greases the wheels*), a correlation which does not obtain in cases of (i) zero complementiser, or (ii) reduced, *-ing* complement clauses, which appear to favour simpler structures requiring less processing effort.

Chapter 5, 'The embedded negation constraint and the choice between more or less explicit clausal structures in English', by Günter Rohdenburg, adopts a similar approach, looking at embedded clauses in corpus data with a view to investigate whether negated complements prefer more explicit structures (where e.g. *help* + direct object + *to* + V is more explicit than *help* + direct object + V). This kind of grammatical variation has been found to be affected by several processing tendencies (see e.g. Hawkins 1994, Wasow 2002, to mention but two). Contextual constraints, the author claims, can be subsumed under his own Complexity Principle (see above), which expresses a correlation between processing complexity and grammatical explicitness. The expectations emanating from the Complexity Principle are borne out in both British and American datasets (largely consisting of newspaper corpora). There are similarities between the Complexity Principle and the notion of Early Immediate Constituents identified in Hawkins (1994, 2004), which also links complexity (in terms of parsing effort) and structural explicitness, while additionally providing metrics for the identification of structurally complex environments.

Chapter 6 is by Juhani Rudanko (one of the volume's editors), entitled "'Wheeled me into lending him my best hunter": comparing the emergence of the transitive *into -ing* construction in British and American English'. Corpus data is used to examine the syntax and semantics of the transitive *into -ing* construction, e.g. *I frightened you into running away*, which the author claims is a type of caused motion construction in the sense of Goldberg (1995). The examples from corpora (BNC, COHA, CLMET) indicate that the pattern emerged in British English earlier than in American English.

Chapter 7, 'Prepositions and sentential complements: the case of *waste* and *spend*', by Paul Rickman (another of the volume's editors), also explores variation in the complementation possibilities of those two verbs, which allow both (i) bare *-ing* and (ii) *in/on-ing* complements, as in *We did not waste time(in)*

discussing the matter and *The remainder of Cynthia's visit was spent in supporting Dorothy's arm*. Again, the Complexity Principle (Rohdenburg 1996) is employed as theoretical background to motivate research findings. Looking at synchronic and diachronic corpora of British and American English (CLMETEV, COHA, BNC and COCA), Rickman considers the possible different senses of the two complement types, as well as the effect that idiomaticity has on complement choice.

Chapter 8 is the final contribution in this section, written by Jutta Salminen and entitled 'From doubt to supposition: The construction-specific meaning change of the Finnish verb *epäillä*'. The author considers both meanings associated with this verb, i.e. 'to doubt' and 'to suppose'. The different interpretations are discussed with reference to diachronic data, and it is concluded that whereas 'doubt' appears to be the basic/original meaning, it is the 'suppose' meaning that has become the more common option in Modern Finnish. This preference has to be seen as a construction-specific occurrence, given that the change 'does not concern all usage contexts of the verb' (172). Additionally, the type of complement selected by the verb is a major factor in the selection of the favoured reading.

The final section, 'Boundaries', consists of three chapters. Chapter 9, 'Multiple sources in language change: The role of free adjuncts and absolutes in the formation of English ACC *-ing* gerundives' is by Teresa Fanego. The author argues that the rise of certain linguistic phenomena can be accounted for by the contribution of a multiplicity of source constructions, with change 'often involving historical distinct "lineages" merging into a new lineage' (179). The emergence of the ACC *-ing* gerundive construction (e.g. *I not only prevented HIM GETTING OFF THE MARSHES, but I dragged him there*) could then be accounted for by speakers' knowledge of several related constructions, chiefly among them the bare nominal gerund (e.g. *The lord admiral toke his leave to goe into Fraunce, FOR CHRISTENING OF THE FRENCH KINGES SOONE*) and the POSS-*ing* gerund (e.g. *AS YOUR PACIENT BEARINGE OF TROUBLES, your honest behaiour among vs your neyghbours . . . doth moue vs to lament your case*).

The study relies on almost a million words of data extracted largely from ARCHER and the Helsinki Corpus. Fanego makes a convincing case (supported with ample evidence from a variety of sources and dates) to suggest that, in producing an ACC-*ing* gerundive construction, 'a speaker or hearer in earlier English would have drawn on their knowledge or experience of a number of related constructions existing at the time' (199).

Chapter 10 is by Cristiano Broccias, entitled 'The relation between hypotactic integration and complementation in Cognitive Grammar'. The author adopts a Cognitive Grammar perspective to explore the boundaries of complementation. Broccias argues that, besides traditional complementation patterns associated with the verb *watch* (e.g. *watch Sally fetch, watch Sally fetching*), other patterns, including the conjunction *as* (e.g. *watched Sally as she fetched, watched as she fetched*), should also be considered complements on the basis of their 'equivalence' with the former patterns. The argument is advanced by means of

increasingly complex diagrammatic representations of the different complementation patterns.

Closing the volume is Chapter 11, Patrick J. Duffley & Samuel Dion-Girardeau's 'Control in free adjuncts in English and French: A corpus-based semantico-pragmatic account'. Looking at data from parsed corpora (ICE-GB and the French Treebank Corpus), the authors investigate the frequency of present participle and infinitival free adjuncts in English and French, such as *Consequently this layer will undergo starvation and ultimately death, CAUSING THE ENTIRE BIOFILM TO DETACH FROM ITS SUPPORT* and *TO ENABLE BACKTRACKING UP THE MENU STRUCTURE, each menu object contains a pointer back up to its parent menu*, respectively. Their conclusion confirms that (i) complements and free adjuncts differ in their integration to the matrix clause, and (ii) adjuncts but not complements accept a wider range of controller types.

The volume offers an array of valuable research in complementation, and its strength lies in its variety. There are, however, a number of shortcomings.

First, for a volume highlighting methodological changes brought about by the advent and availability of large electronic corpora, it is surprising that the first two chapters (in a section devoted to setting the theoretical agenda) do not employ quantitative methods, or even suggest what advantages may be gained from adopting methodologies characteristic of corpus linguistics. With the exception of the chapter by Cuyckens & Frauke D'hoedt, corpus data are mostly employed purely for illustration purposes. Additionally, while the frequency of extracted data is discussed in some chapters, the analyses tend not to go farther than providing percentages, without any recourse to statistical tests that would allow a measure of the significance (statistical or other) of the findings.

On a related note, changes in the frequency of use of a construction play a major role in cognitive/usage-based approaches, and various proponents (e.g. Bybee 2007) have been very vocal in calling for longitudinal corpora (i.e. those where the same speakers are followed over a period of time) to be compiled and investigated. This is only alluded to in Chapter 4, in which Cuyckens & D'hoedt explicitly assume structural complexity to be a measure of cognitive complexity; yet the absence of a metric for structural complexity (such as Hawkins' (1994) Constituent Recognition Domain, which represents the number of nodes an addressee needs to parse to recognise a construction) is puzzling at best.

Finally, more editorial intervention would have improved the volume. Some decisions are hard to justify: Chapter 3, by Havu & Höglund, would appear to be a better fit for the 'Variation' (rather than the 'Structure') section, given its cross-linguistic approach, independence of theoretical notions, and reliance on corpus data. To render the volume more (editorially) cohesive, it would also have been helpful to have an introduction to each of the three sections, as a way of tying the different studies together, and avoiding the impression of a fragmented field of research in terms of methodology and theory. Similarly, the lack of a conclusion to the volume (despite its four editors) gives the impression of a disparate and loosely related collection of studies. The reader is left wondering what the future holds

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for this area of research, what the urgent questions are, and which are the most fruitful methods to pursue.

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