Construction grammar

Chapter 6. Construction grammar

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1. Introduction

This chapter provides a review of some of the ways in which the framework of construction grammar has been used to explain patterns of change in English, with a focus on morphological, morphosyntactic, and semantic change. While there are a number of variants of construction grammar, the research reported on here takes a largely usage-based, cognitive approach to the architecture of language (see Langacker 1987, Bybee 2010); some comments relating to the use of a more formal model of construction grammar in accounting for language change appear in Section 4. The chapter is organized as follows. Section 2 outlines some of the principles of constructional approaches to language (see Goldberg 2013), and establishes those features which are particularly relevant to language change (on which see Fried 2013, Hilpert 2013, Traugott and Trousdale 2013). The objective is to sketch briefly how early constructional approaches challenged some of the dominant linguistic theories in the late twentieth century, then go on to show their application to historical linguistics. Some reference is made to methodological issues in a usage-based approach to language change, but for more detail see Gries and Hilpert's chapter in this volume.

Section 3 considers applications of construction grammar to areas of English historical linguistics, focussing on the development of and changes to morphological and syntactic schemas, and the development of grammatical and lexical micro-constructions. The focus is on how construction grammar helps to elucidate some problematic issues in theories of language change, but also consider ways in which current approaches to constructional change might be refined or developed.

The discussion of morphological schemas (Section 3.1) is couched within the framework of constructional morphology (see particularly Booij 2010). The focus will be on quantitative approaches to productivity changes in the history of English (the V-*ment* construction, Hilpert 2013), and the relationship between lexicalization and the development of word-formation schemas (the X-*dom* construction; Haselow 2011, Traugott and Trousdale 2013). The subsection on syntactic schemas (3.2) looks at

changes to existing constructions (illustrated by semantic specialization in the English ditransitive construction, see Colleman and De Clerck 2011) as well as the creation of new constructions (illustrated by the development of cleft constructions in English (Traugott 2008, Patten 2012)). The section on the loss of schemas (3.3) focusses on reduction in constructional space as a productive word-formation schema or argument structure construction falls into disuse. Examples are taken from recent work on constructional change.

The fourth section provides a brief overview of the advantages and disadvantages of a constructional approach to change, with some comments regarding future directions of research. A brief concluding section summarises the main issues discussed.

2. Construction grammar: an introductory sketch, and its application to historical linguistics

Goldberg (2013) identifies the following as features common to varieties of construction grammar which distinguish them from mainstream generative approaches to the architecture of human language:

- From lexical items to phrasal constructions, language is a system of linked, conventionalized, form-meaning pairings.
- There are no operations (such as merge or move) which transform one structure into another.
- Language is a conceptual network (see also Hudson 2007 for a related model) in which inheritance and extension links serve to associate one constructional node with another.
- Language is a variable phenomenon; similarities across languages can be accounted for either by properties of the constructions themselves, or by 'domain-general cognitive processes' (Goldberg 2013: 16).

Goldberg then notes one other feature that is shared by many but not all constructional approaches, namely that knowledge of language is a product of language use (the 'usage-based model'). This is an important feature for work in historical linguistics,

and contrasts sharply with some other approaches to language change. One area of intersection between historical linguistics more generally, and construction grammar, is historical-comparative reconstruction. I do not discuss this topic in the present chapter (see Barðdal 2013 for a summary of current thinking).

The features listed above serve to establish what is generally shared across the various 'constructional' approaches to language, such as Radical Construction Grammar (e.g. Croft 2001) and Cognitive Construction Grammar (e.g. Goldberg 2006). As is generally the case for linguistic theories, construction grammar was originally designed as a tool to model the linguistic knowledge of speakers synchronically, rather than as a theory of language change. It developed as a reaction to mainstream generative linguistics in the United States in the 1980s and 1990s, and shared some – but not all – features with other cognitive theories of language being developed at the time, including Notional Grammar (e.g. Anderson 1977), Word Grammar (e.g. Hudson 1984) and Cognitive Grammar (e.g. Langacker 1987), all of which, like construction grammar, have since been used to account for historical changes. Fillmore (2013: 111) notes that Berkeley Construction Grammar developed from work 'centered on discovering the idiomatic and "irregular" parts of language, demonstrating their frequency in text and their centrality in the linguistic knowledge of speakers.' Precisely such topics are of concern to historical linguists, as the following suggests:

- Work on grammaticalization (e.g. Lehmann 1985, Hopper and Traugott 2003) and lexicalization (e.g. Brinton and Traugott 2005) has tried to explore how the 'idiomatic' parts of language are associated with both procedural meaning (e.g. the aspectual composite predicates such as *take a walk*) and contentful semantics (e.g. other composite predicates such as *take offence at*).
- The issue of what is 'regular' and 'irregular' (and how something that was irregular at one point comes to be regular later in the history of a language) is at the heart of debates surrounding the relationship between reanalysis and analogy (see Fischer 2007 and De Smet 2009).
- Frequency – including changes in frequency – has been of importance to usage-based approaches to the structure of language (see much of the work of Joan Bybee, especially Bybee 2007, 2010). This has come to be of particular importance as work in sociolinguistics has influenced theories of language change, with the adoption of

particular kinds of quantitative methodologies in studies of language change (see Gries and Hilpert, this volume).
- Textual evidence (whether original manuscripts or computerized corpora) provides most of the data for work in historical linguistics. Crucially, the importance of both cotext and context (see Bergs and Diewald 2009) for understanding how new grammatical forms develop is of significant importance for usage-based models.
- Establishing what speakers know unites practically all fields of linguistic enquiry. Work in historical linguistics interfaces with work on language acquisition and language contact, and both of these topics have been addressed within a constructional model.

Thus the kinds of questions relevant to (English) historical linguistics show considerable overlap with those that have driven aspects of work in construction grammar from its outset. More recently, the issue has arisen as to what precisely a 'diachronic version' of construction grammar would look like, and what questions in historical linguistics a constructional model could answer. For example, one topic which has been hotly debated in recent years has been the relationship between grammaticalization and constructional change (Noël 2007, Gisborne and Patten 2011, Fried 2013, Hilpert 2013, Traugott and Trousdale 2013). Another issue has concerned how change might be modeled within a particular variant of construction grammar (e.g. Fried 2008). In what follows, I present an overview of some of the issues which appear to be particularly pertinent to work on the history of English, and use only English case studies as a source of data. There will be minimal reference to methodological issues, given that this topic is covered elsewhere in the present volume, but it is important to underline the close interplay between the methods adopted and the research questions which drive particular projects. Quantitative and qualitative approaches are complementary, not competing, and both provide insights into how constructions emerge, change, and fade over time.

3. Constructional change

In this section, an overview of different kinds of constructional change is provided. Section 3.1 is concerned with the emergence of and change to word-formation schemas in English; Section 3.2 is concerned with similar features associated with

grammatical constructions such as cleft constructions. In Section 3.3, the focus is on loss, and what happens to isolated micro-constructions when a schema disappears over time.

3.1 Morphological schemas

As noted in Section 2, the constructional approach relies on a non-modular framework of language, and treats it as a conceptual network. The constructions which form the nodes of this network are put to use by language users in different ways; here I consider the development of and changes to those constructions whose function is primarily referential and contentful. In modular frameworks, both 'lexical' items like *watch* and 'grammatical' items like the English past tense morpheme *-ed* are said to be stored in the lexicon, and various combinatorial rules or constraints determine the nature of a compositional expression like *watched*. The relationship between the internal structure of a word and the complex structure of a clause is important in constructional approaches to language. As Michaelis and Lambrecht (1996: 216) observe, 'the grammar represents an inventory of form–meaning–function complexes, in which words are distinguished from grammatical constructions only with regard to their internal complexity'. Indeed, some 'words' have an internal complexity similar to that of phrases and clauses, and the constructional model allows for a uniform treatment of changes affecting both lexical items and grammatical constructions. While what is discussed below is applicable to the development of inflectional morphology, the examples come from changes to the derivational morphology of English.

In this section, a review is presented of work which adopts a model of constructional morphology (Booij 2010). This model treats word-formation patterns as schemas, abstractions across instances of use which in turn sanction new instances of use, consistent with the usage-based model. An example of a morphological schema is given as (1):

(1) $[[x]_V \text{ er}]_N$ 'one who Vs' (Booij 2010: 2)

Schemas of this kind display prototype effects, partly as a reflection of frequency. Because lexical constructions are organized in the same way as grammatical

constructions (i.e. in a taxonomic network with inheritance links), a unified approach to variation across subschemas is possible. As Booij (2010: 77–80) observes, the formal part of the schema in (1) maps onto a range of different semantic subtypes, such as instruments (*I bought a new blender*) and events (*He's on a bit of a downer at the moment* 'He's in a low mood at the moment'). These semantic differences may be specified at the level of subschema.

The two case studies discussed here are the development of English – the V-*ment* construction (Hilpert 2013) and the X-*dom* construction (Haselow 2011, Traugott and Trousdale 2013).[1] The former is used to illustrate how quantitative analysis may shed light on developments in word formation, the latter to illustrate the relationship between the development of word-formation schemas and traditional accounts of lexicalization.

Hilpert's study of the V-*ment* construction uses data from the *Oxford English Dictionar*y. Its focus is 'on a combination of a stem with the suffix, and on changes that pertain to this particular pattern' (Hilpert 2013: 112). Drawing on previous research by Dalton-Puffer (1996) and Bauer (2001), Hilpert shows how the V-*ment* construction arose as a generalization across borrowings from French in the ME period (in cases such as *payment*, for instance, the stem is clearly verbal); once established, the construction was used by speakers with verbs that were Germanic in origin: the lexical increase here was therefore not a consequence of borrowing, but of a newly productive pattern in English morphology. The productivity of the pattern, however, has declined over time, such that it is not considered a productive pattern in contemporary English.

In terms of frequency, Hilpert's study (in partial contrast to earlier work by Anshen and Aronoff (1999) and Bauer (2001)) suggests a rise in the frequency of new types from 1300 to about 1500, then a gradual decline, i.e. 'a fairly regular rise and fall pattern that is consistent with the idea that the V-*ment* construction started out as a young hopeful but did not retain its initial momentum' (Hilpert 2013: 127). In terms of productivity, Hilpert (2013) discusses several ways in which a corpus may be used to measure morphological productivity (e.g. realized, potential, and global productivity). In the case of the V-*ment* construction, Hilpert (2013: 131) argues in favour of expanding productivity as the appropriate measure. Expanding productivity is established by 'dividing the number of hapaxes of a construction by the overall number of hapaxes in the corpus' (Hilpert 2013: 130). From the perspective of

construction grammar, this is preferable as it allows us to see how productive a given morphological construction is in relation to similar constructions: 'In the case of the V-*ment* construction, we not only learn that its productivity declined, but also that it declined relative to the productivity of other constructions in the grammar of English' (Hilpert 2013: 133). Using a set of univariate and multivariate analyses, Hilpert demonstrates how a range of factors is associated with the changing frequency of the V-*ment* construction in the ME and ModE periods.[2] These include the morphological structure and etymological source of the stem, and the degree of transitivity and semantic type of the entire construction. He finds that the various subtypes of the construction have their own trajectory, some of which are short-lived, some of which continue to the present, and that the period between 1250 and 1400 is particularly noticeable with regard to formal and functional variation as the construction develops. The dominant type – 'with a native, transitive, internally complex verbal stem and an action interpretation' (Hilpert 2013: 153), exemplified by *enlargement* – continues to be productive from about 1400 until the construction as a whole decreases in frequency in the twentieth century.

In identifying various subtypes of the V-*ment* construction, some of which are associated with formal features, and some with semantics, Hilpert (2013) demonstrates how a constructional model provides some advantages over other accounts of morphological change. The developments summarized here show that a constructional network (rather than a single word-formation process) with schemas and subschemas is an appropriate means for modeling the kinds of changes that a quantitative analysis of the data suggest.

Traugott and Trousdale (2013) have also used aspects of Booij's constructional morphology model to account for the development of new word-formation schemas. Their approach differs from Hilpert's in that it is qualitative rather than quantitative, and distinguishes constructional change (which affects one level of a construction) from constructionalization, which they characterize in part as follows:

> Constructionalization is the creation of $form_{new}$–$meaning_{new}$ (combinations of) signs. It forms new type nodes, which have new syntax or morphology and new coded meaning, in the linguistic network of a population of speakers. It is accompanied by changes in degree of schematicity, productivity, and

compositionality. The constructionalization of schemas always results from a succession of micro-steps and is therefore gradual.

In the rest of this section, key aspects of the constructionalization of a lexical schema are discussed. A fuller account is provided by Traugott and Trousdale (2013). The change concerns the development of the OE lexical item *dom*, meaning 'state' or 'judgement'.[3] As far back as the OE period, *dom* regularly occurred as the right (head) element of a compound. Haselow (2011: 112) observes that *dom* 'progressively changed its status into that of a suffix by adopting a more abstract, categorical meaning and undergoing phonological reduction. It is therefore difficult to determine a cut-off point which separates formations with *dōm* being compounds from those being genuine derivatives'. Use as a free form and as a determinatum in a compound is exemplified by (2a) and (2b) respectively:

(2a) for ðam ðe hit is Godes ***dom***
for that that it is God.GEN law.NOM
'because it is God's law' (Deut (c1000 OE Heptateuch) B 8. 1.4.5 [DOEC])

(2b) for ðan þe he æfter cristes þrowunge ærest
for that that he after Christ.GEN suffering first
martyrdom geðrowade
martyrdom suffered
'because he was the first to suffer martyrdom after Christ's suffering' (c1000 *ÆCHom* I.3 [DOEC])

The suffix developed into a bound form that is part of a new lexical constructional schema (3):

(3) $[X_i$ -dom$]_N \leftrightarrow$ [condition associated with X_i]

While such a schema might be proposed, it does not appear to have been well-entrenched in OE. Dietz (2007) records about fifty types with apparent affixal *-dom*. Of these *wisdom* is the most frequent with over nine hundred tokens. Haselow (2011:

154) finds twenty-two types in a less extensive corpus, considers this to be low type frequency and concludes that the high token frequency relates to individual micro-constructions like *wisdom* 'wisdom', *cristendom* 'christianity', and *martyrdom* 'martyrdom': 'the occurrence of *-dom* as the second element in compounds was restricted to a small number of highly frequent formations' (Haselow 2011: 152). High token frequency of this sort but low type frequency suggests that the more abstract schema is not well-entrenched (Croft and Cruse 2004, Barddal 2008). Later in the history of English, members of the schema given in (3) fell into disuse: in the words of Dalton-Puffer (1996: 76) 'the picture is one of stagnation and eventual decline'. Part of the reason for this is potential competition (and the subsequent establishment of niches) in a neighbouring part of the network, with other expressions that were developing as suffixes, and had the meaning 'state' or 'condition', such as *-had* > *-hood*, *-ness*, and *-scipe* > *-ship*.

This brief summary of the development of *-dom* again supports a constructional morphology model, but looks beyond the network of 'internal' subschemas (cf. Hilpert on V-*ment*) to the various niches that language users carve out for different constructional schemas. The network model is still relevant: for both sets of changes, we see links that can be established between and across schemas based on associations of form and meaning.

3.2 Syntactic schemas

This section considers two different kinds of change from a constructional perspective. The first involves semantic change occurring at the level of the syntactic schema. At a trivial level, since words are conventional symbolic units, change at the semantic level of a lexical item constitutes a constructional change, so traditional examples of broadening (OE *brydde* 'small bird' > ModE *bird*), narrowing (OE *fugol* 'bird' > ModE *fowl* 'bird found on farms, typically for human consumption'), amelioration (ModE *sick* 'ill' > 'very good'), and pejoration (OE *cræftig* 'skillful' > ModE *crafty* 'deceptive') may all be included. However, a more instructive finding would be if any such changes affected the semantics of more general and complex constructional types.

Colleman and De Clerck (2011) present a study of changes in the English ditransitive construction, which sought to explore the hypothesis that, if constructions

are like words (i.e. conventional pairings of form and meaning), then some semantic changes said to affect words might also affect constructions. Particularly, the study is an attempt to investigate semantic narrowing in the ditransitive (or double object) construction, using data from the first subperiod (1710–80) of the Corpus of Late Modern English (Extended Version), De Smet (2005). Because the corpus is not syntactically annotated, nor tagged for parts of speech, only a limited search of the corpus was undertaken, and therefore only a partial picture of the change is presented. Colleman and De Clerck (2011) retrieved all instances of the construction where a personal pronoun was followed by an article, possessive pronoun, or quantifier. This resulted in 2,205 instances of the construction, with 111 different verbs.

Colleman and De Clerck found significant continuity between the semantics of the English ditransitive construction in the late modern period and that in the present day. There were some instances of losses and of gains affecting the construction which are not of core concern, namely the development of a new subschema in which the verbs denote the instrument of communication (e.g. *email*/*fax*/*text*), and the loss of (a polysemy of) an individual lexical item (e.g. *bespeak*, 'order, arrange for'). More central to the present topic are cases where the verb itself continues to be used in contemporary English but is no longer readily admissible in the ditransitive construction. This incompatibility affects verbs such as *banish*.

Colleman and De Clerck (2011) identify five broad categories whose members are no longer readily associated with the ditransitive construction: verbs of banishment, 'pure' benefaction, communication, emotion/attitude, and disposition. The first three are illustrated by (4), with examples from CLMETEV:

(4) *Banishment*: I therefore for the present *dismiss'd* him the Quarter deck (Cook, 1711)
'Pure' benefaction: so snatching out his pocket-book, and the young Benedictine *holding* him the torch as he wrote, he set it down as a new prop to his system of Christian names (Sterne, 1767)
Communication: I wish, my dear, you understood Latin, that I might *repeat* you a sentence in with the rage of a tigress that hath lost her young is described (Fielding, 1751)

With verbs expressing feelings and attitudes, Colleman and De Clerk (2011) found a decrease in frequency of ditransitive constructions with *envy* and *forgive*, and found no instances of verbs of dispossession (though some sporadic occurrences can be found in later corpora).

While not all sets change at the same rate, there appears to be evidence of a degree of semantic specialization/narrowing. This seems to be complete for some subschemas (e.g. banishment), but is ongoing in others (e.g. with the set of verbs expressing feelings and attitudes). In addition to supporting claims of a polysemous ditransitive construction in English (Goldberg 1995), this research suggests that the semantics of schematic constructions may subject to similar types of change as those affecting lexical items. Furthermore, since it appears to be peripheral subschemas of the ditransitive construction that are affected most readily by this narrowing or specialization (consider the relationship between the lexical semantics of verbs like *envy*, and the degree of fit with the central semantics of the ditransitive), the changes lend further weight to the claim that constructions are organized in a network with prototypical instances and less typical extensions.

The change described above is one which affected an existing schema. However, as was the case with the word-formation schemas V-*ment* and X-*dom* discussed in Section 3.1, grammatical schemas (such as cleft constructions) can also come into being. One such example in the history of English are the *all*- and *what*-pseudo clefts (as in *All he did was laugh* and *What John did was laugh*). These form part of another network of constructions, including the *it*-cleft (*it was John who laughed*) and *th*-clefts (*The one who laughed was John*). Patten (2012) identifies an overarching schema (a non-derived specificational construction) which, like the V-*ment* lexical schema discussed above, has several subtypes.[4] Some subtypes cohere into subschemas (like the *it*-cleft subschema) while others (like the pseudo-clefts) are simply individual constructional types. Patten (2012) suggests that over time, there has been a gradual coalescence of the various members of the specificational schema: *it*-clefts in OE focus NPs, but there is host-class expansion in the sense of Himmelmann (2004) such that in ME, *it*-clefts can focus AdvP, and in ModE, clauses; conversely, *all*- and *wh*-clefts can now be used to focus NPs.

While *it*-clefts arose in OE (Patten 2012, contra Ball 1994), pseudo-clefts are attested in the EModE period (Traugott 2008). There was another, related specificational construction attested at the time, namely the *th*-cleft; there was also an

information structuring (but non-specificational) construction, left dislocation, which appears to have been obsolescing in the EModE period (Pérez-Guerra and Tizón-Couto 2008), but variants with BE as the main verb share some structural similarity to *wh*-clefts. So while there were constructions in existence which had related functions or related forms, nothing with the precise form and function of the pseudo-cleft appears to have been in existence prior to the late sixteenth century (Traugott 2008). In the late sixteenth and early seventeenth centuries, examples such as (5a) and (5b) can be found in the standard corpora:

(5a) For it is more then death unto me, that her majestie should be thus ready to interpret allwayes hardly of my service, … ***All her majestie can laye to my charge ys going a little furder then she gave me commission for***. (1585-6 Earl of Leicester, *Letter to Walsyngham* [CEECS])

(5b) thereby to insinuate, ***That what he did, was only to Preach to such, as could not come to our Churches***. (1661 Stillingfleet, *Unreasonableness of Separation* [CEEC])

Notice that in (5a), *all* means only, and in both instances the syntax is biclausal and the complement of BE is factual, properties which characterize the modern *wh*-pseudo clefts, though subsequent constructional changes take place between the sixteenth century and the contemporary period which give rise to the construction in use today (see further Traugott 2008, Patten 2012, Traugott and Trousdale 2013). These examples suggest new construction types emerging in the history of English which have distinctive syntactic and semantic properties, but which are nevertheless networked with the existing *it*- and *th*-clefts. Traugott (2008) linked the developments to standard accounts of grammaticalization: an information-structuring pattern has become fixed, *do* bleaches from a main verb to a pro-verb, and there is a shift in the case of *wh*-clefts from biclausal to monoclausal structures (see also Lehmann 2008).

3.3 The loss of schemas

The examples discussed so far have all been concerned with the creation of new schemas, whether these be to create new referential constructions (as in the case of the early history of noun forming schemas V-*ment* and X-*dom*), or information-structuring constructions like the clefts. But there is evidence in the history of the language that schemas fall into disuse over time. Indeed we have seen this with the loss of productivity of the morphological constructions discussed above. But this is a property also of argument-structure constructions. In the case of the ditransitive construction, we saw semantic narrowing at the schematic level; in the case of the English impersonals, the entire constructional schema is lost, as the English transitive expands (Trousdale 2008). In OE, a number of subschemas of the impersonal construction existed. Following Elmer 1981 and Allen 1995, we can identify these as N, I and II. Type N (a subschema whose predicate includes verbs like *lystan* 'desire') had nominal arguments inflected for genitive and dative/accusative case; Type I (a subschema whose predicate includes verbs like *laþian* 'loathe') had nominal arguments inflected for nominative and dative case; Type II (a subschema whose predicate includes verbs like *behofian* 'have need of') had nominal arguments inflected for genitive and nominative case. In a manner that parallels the 'competition in constructional space' that was suggested for the loss of the X-*dom* word formation schema, as speakers came to code more and more two-place predicates using the transitive schema (with source and experiencer arguments inflected for subject and oblique case), fewer and fewer instances in all of the subschemas persisted. The change was a gradual one: it was still possible in the EModE period for speakers to use *like* in its 'impersonal' sense (i.e. where the subject has the role of source and the object the role of experiencer). In twenty-first century English, the only remnant of this pattern is the expression *methinks*. Having been isolated from any recognizable schema, the form has been newly analyzed by speakers as an epistemic adverb meaning 'in my opinion'.

A rather different kind of loss is manifest in some of the changes often referred to as lexicalizations in the history of the language. Examples of this kind include *cobweb* (< OE *coppe* 'spider' + *web*), *earwig* (< OE *eare* 'ear' + *wicga* 'one that moves'), and *mermaid* (< OE *mere* 'sea' + *mægden* 'maiden') (examples from Brinton and Traugott 2005: 50). In these cases we have the development of fully specified forms (there are no open slots, as is the case with V-*ment* or the *wh*-clefts), but one element of the historical compound remains transparent. Other examples of

lexicalization provided by Brinton and Traugott (2005: 50) include *gospel* (< OE *god* 'good' + *spel* 'news'), *gossip* (< OE *god* 'god' + *sibb(e)* 'relation') and *halibut* (< OE *halig* 'holy' + *butte* 'flatfish'). In these cases, again there are no open slots in the new construction, but here no element remains transparent. Constructional morphology can explain these patterns as the gradual development of unanalyzable wholes: examples in the first set are more analyzable than the second, but even in the first set we see variability – *cobweb* is more transparent than *mermaid*, and the latter is more transparent than *earwig*. The parallel becomes even clearer when different types of idiom are considered (Nunberg et al. 1994): idiomatically combining expressions like *pull strings* 'exert influence' are more analyzable than idiomatic phrases like *red herring* 'a false trail'.

4. Comparisons with other accounts of change and future directions

As discussed in Section 3, some researchers have proposed ways in which a constructional model of language (change) has advantages over other models, and as noted in the first section of this chapter, there are certain ways in which the very fundamentals of construction grammar set it apart from other frameworks. While some differences (on modularity, and on the precise relation between use and structure, for example) are likely to remain contentious for some time, there are other ways in which some constructional approaches to change and some generative approaches have independently reached similar conclusions.[5] One such area concerns the relative importance of reanalysis and analogy in change. Both Traugott and Trousdale (2010) and Roberts (2010), for example, privilege reanalysis above analogy. There also appears to be convergence on what it means to say that change is gradual. For example, Traugott and Trousdale (2013) recognize that constructionalization involves a sequence of changes, but that each individual micro-step is discrete; this appears to be consistent with the nature of upwards reanalysis in a generative model of change which relies on a clausal hierarchy in which category distinctions are very fine-grained (Cinque 1999, Roberts 2010).

In terms of future directions, there are many possibilities. One concerns the relationship between micro-constructions and the schemas with which they are aligned, and the degree of granularity at which changes occur. For instance, there is general consensus that change begins in constructs (understood as tokens, attested

instances of use), and that a systematic change involves the creation of a new micro-construction (low-level types). But if constructions exist in a taxonomic network, how far do the effects of change spread (both in terms of extensions to other micro-constructions, and in terms of the more general schemas that sanction micro-constructions)? It is recognized that constructional templates vary in their degree of specificity but to what extent and in what way are the more abstract templates affected by change at a micro-constructional level, and how would this be measured? Here it is likely that the kind of quantitative work associated with (diachronic) collostructional analysis (see, e.g., Hilpert 2012, Stefanowitsch 2013) will shed some light on the effects of change. A related issue is the extent to which patterns which could be brought under a single schema are indeed categorized as such by speakers, or whether speakers treat such relations as a kind of family resemblance. This is connected with the kinds of claims made regarding differences between *it*-cleft and pseudo-cleft constructions above, where the former is treated as subschema, and the latter as a set of separate micro-constructions. The issue of relationship between change in the mental representation of the individual speaker (i.e. the constructional knowledge characterized by an idiolect) and the change in the 'linguistic network of a community of speakers' (Traugott and Trousdale 2013: 22) also needs to be considered in greater depth.

The relationship between a formal model of change and a constructional model of change was briefly addressed above. Formal models tend to have an advantage over non-formal models in terms of the preciseness of the representation of the grammar. Some constructional models (e.g. Sign-Based Construction Grammar; Sag 2012, Michaelis 2013) have a specific formal representation, and one possible future direction is to see whether and how some of the changes described in the literature on constructional change could be modelled in that framework. Fried (2008) has articulated some principles of formal constructional change as applied to aspects of the history of Czech in a related constructional model; there appear to be fewer such descriptions of changes in English.

In this final section I have had rather less to say about English and more about more general issues of historical linguistics. There are clearly many other areas of English grammar which could be explored using a constructional model. Indeed, there already have been many such studies on English and related languages (e.g. on raising to subject and raising to object (Noël and Colleman 2010); on passive and copular

constructions (Petré forthcoming); causatives (Hollmann 2003); on future constructions (Hilpert 2008), to name just a few). Clearly the greater the number of different case studies, the more hypotheses can be tested across different data sets. Furthermore, both in terms of synchrony and diachrony, construction grammar has had rather less to say about phonological change than about change at any other level.

5. Conclusions

Many of the principles that are shared across different variants of construction grammar have been explored from the perspective of language change, and particularly in terms of changes affecting English constructions. Some of these changes have occurred at one 'level' in the construction (e.g. changes affecting the semantics of a lexical construction, or a grammatical schema); others have involved the creation of new constructions (including word-formation schemas, and information-structuring constructions like clefts). These topics have been approached using quantitative and qualitative methods; both methodologies have provided rich insights into the nature of constructional change, the relationship between constructional change and other accounts of change, and some of the ways in which English has evolved over time. New directions might include a more precise formalization of aspects of change, research into on-going changes, particularly in new varieties of English that have been the product of substantial contact between speakers.

Electronic resources

CEEC = Corpora of Early English Correspondence.
http://www.helsinki.fi/varieng/CoRD/corpora/CEEC/. Accessed April 25, 2014

CEECS =

CLMETEV = Corpus of Late Modern English Texts, Extended Version.
https://perswww.kuleuven.be/~u0044428/clmetev.htm. Accessed April 25, 2014

DOEC =

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[1] Haselow (2011) provides a detailed account of the development of OE *dom* but not within a constructional framework, as Traugott and Trousdale (forthcoming) do.

[2] Hilpert's method allows him to establish specific relevant time periods that are data driven and bottom up, delimited by particular changes in the behaviour of the construction, or 'a grouping of periods that upholds the inherent temporal sequentiality' (Hilpert 2013: 34). This is known as Variability-based Neighbor Clustering (see Gries and Hilpert 2008), but for convenience's sake, throughout this chapter, I use the standard periods of English (such as OE and EModE).

3 As Haselow (2011: 111–12) observes, OE *dom* was polysemous, and only a couple of conventional meanings are listed here.

[4] Notice, however, that the schema which covers all of the cleft constructions is much more general and open than the V-*ment* schema.

[5] Not all work that is constructionist in spirit privileges reanalysis over analogy however (see for instance De Smet 2009).