

Historical linguistics

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1 Introduction

At first blush it may seem odd that researchers in Cognitive Linguistics should have an interest in the historical development of language. After all, one cannot conduct a lexical decision task with speakers of Old English, nor is it possible to study the metaphorical underpinnings of gestures that accompanied conversations in Hittite. How can a cognitive approach to language history be anything but utter speculation? This chapter will make the case that looking at language change is not only perfectly in line with the cognitive linguistic enterprise, but that furthermore an understanding of how language change works is a necessary prerequisite for an adequate theory of how language and cognition are related in synchrony.

This argument will be made in five parts. The first part is a general presentation of the usage-based approach that Cognitive Linguistics brings to the study of language change (Langacker 1987, Bybee 2007, 2010). On this view, the major cause of language change is language use itself. Language change on a historical time-scale is viewed as the emergent outcome of speaker behavior in the here-and-now. This behavior, in turn, is governed by cognitive and social principles, which serve as explanations of why and how language changes. Grounding the study of language change in cognitively and socially motivated explanations can be seen as the main agenda of usage-based historical linguistics.

The introductory part sets the scene for four illustrating sections. Each section discusses a domain of language change that has been analyzed within cognitive linguistics. The first of these sections addresses lexical semantic change. The development of lexical meaning is inherently tied to the topics of conceptual metaphor and metonymy, polysemy, and prototype theory (Geeraerts 1997). This section will chart the semantic developments of selected lexical items and clarify the relation between historical change and synchronic polysemy. The next section presents a brief discussion of grammaticalization theory (Heine et al. 1991, Lehmann 1995, Hopper and Traugott 2003) and its relation to Cognitive Linguistics. The emergence of grammatical forms from lexical items yields evidence for conceptual and formal shifts that take place in highly similar ways across genetically unrelated languages. Illustrating examples of such shifts will be presented. A third section will look at sociolinguistic change. A growing body of studies in Cognitive Linguistics acknowledges the importance of the social dimension of language and hence adopts a variationist framework (Geeraerts et al. 2010). It will be outlined how this work replaces the assumption of an idealized speaker-hearer with more realistic models of inter- and intraspeaker variation, and how it proceeds methodologically. The fourth section reports on work that applies the framework of Construction Grammar to the analysis of language change. Studies in Diachronic Construction Grammar (Noël 2007) analyze historical developments at the level of form-meaning pairings. This

section discusses several phenomena that have been studied from the perspective of Diachronic Construction Grammar and how such work differs from other approaches to the diachrony of language structure. A final section examines how these four domains of language change intersect and how they connect back to the usage-based approach of cognitive linguistics.

2 Language change and the usage-based model

There is ample theoretical motivation and empirical evidence that the synchronic structure of any human language is the emergent result of language use (Bybee and Hopper 2001, Kemmer and Barlow 2001). Grammatical structures are created through the social activity of human beings who engage in linguistic interaction, trying to 'do things with words'. As is discussed by Diessel (this volume), language use is dependent on several cognitive processes that are not in themselves linguistic. Amongst other things, the capacities for categorization, schematization, and analogy formation (cf. part I of this volume for a discussion of these and further related processes) are necessary cognitive prerequisites for language use. Similarly, language use is shaped by non-linguistic factors that are social in nature. These include the human inclination to co-operate (Grice 1975, Tomasello 2009), the ability to 'be polite', i.e. to respect the self-image of interlocutors in social interaction (Goffman 1955, Brown and Levinson 1987), and the disposition towards engaging in joint attention (Tomasello 1995), that is, '*two people experiencing the same thing at the same time and knowing together that they are doing this*' (Tomasello and Carpenter 2007: 121). A cornerstone of the usage-based model is hence the claim that language is grounded in these so-called 'domain-general' socio-cognitive processes. The epithet 'domain-general' indicates that these processes are active in basically all kinds of human cognition, not only cognition that relates to language.

A consequence of that claim is that it is impossible to separate the synchronic study of language from inherently dynamic issues, such as language acquisition and language change. Forming linguistic categories, constructional schemas, or analogies is not only what enables communication between human beings in the present, but these processes are also necessary for learning a first language (Matthews, this volume), and the constant application of these processes by adult language users can be seen as the driving force behind language change: As particular forms of language are used again and again in linguistic interaction, routinization processes set in that lead to different kinds of frequency effects (Bybee and Thompson 1997). For instance, in the phrase *I don't know what you mean* the negated auxiliary is often heavily reduced and the final stop of *what* shows palatization. By comparison, these phenomena do not occur to the same extent in the phonologically similar but much less frequent phrase *I don't notice the dot you mean*. Another frequency effect is exemplified by 'chunking', i.e. the mental representation of a complex sequence of items as a holistic unit (Bybee and Scheibman 1999). The more often a string of elements is processed in sequence, the more likely speakers are to process this string as a single unit. An example for this would be the chunk *sitting and waiting*, which in some respects

behaves like a single verb: In the question *What are you sitting and waiting for?* it is the prepositional object of the verb *waiting* that is questioned. Usually however, it is not possible in English to question constituents that are part of a coordinated phrase (cf. Ross 1968: 89 on so-called island constraints). An utterance such as *What are you whistling and waiting for?* sounds unidiomatic if not ungrammatical to most speakers. This is evidence that speakers reanalyzed the string *sitting and waiting* as a 'chunk', i.e. as a single verbal constituent. The presence of such frequency effects suggests that speakers' mental grammars undergo gradual changes that are driven by repetition and that only eventually result in categorical changes. The idea that one's mental representation of grammar may change during adulthood is very much at odds with the theory that first language acquisition is the only place where grammar change can occur (Lightfoot 1979). Instead of viewing language change as the result of compromised transmission between generations of speakers, the usage-based model offers a perspective in which language change happens gradually, with every usage event.

A notion that is central for this perspective is that speakers retain a large number of usage events in memory (Bybee 2010, ch. 2). Each token of linguistic usage is stored in a highly detailed fashion, so that even minute aspects of sound and meaning are registered and remembered. To stay with the example of *sitting and waiting*, the mental bookkeeping of speakers will include the rate with which *sitting* is realized with a final alveolar nasal, the rate with which the verbal complex *sitting and waiting* is used intransitively, and the rate with which it is followed by a phrase referring to a time span, amongst many other details. Of course, speakers' memories of linguistic usage events do not form an unstructured collection, but rather, each usage event is categorized as being more or less similar to previously encountered tokens. Speakers thus form generalizations over 'clouds' of exemplar tokens. When speakers repeatedly experience tokens that are peripheral to an established cloud, eventually the shape of that cloud may change. It may become more diffuse or it may drift into one particular direction, or it may indeed develop into two separate clouds. The acceptability of *What are you sitting and waiting for?* suggests that in current usage, the chunk *sitting and waiting* forms an exemplar cloud of its own that is autonomous from the clouds of the form *sitting* and the form *waiting* respectively. As time progresses, this kind of emancipation may, but need not, become ever stronger. The emerging modal verb *gonna* is thus fully emancipated from lexical uses of *going to*, as in *going to the beach*. Emancipation can result in complete dissociation, such that for instance the indefinite article *an* is no longer recognized by present-day speakers as deriving from the numeral *one*. In all three cases though (*sitting and waiting*, *gonna*, *an*), the process that has been at work is essentially the same: A peripheral group of uses in the original exemplar cloud becomes frequent enough to develop its own 'center of gravity', so that eventually there are two exemplar clouds, which may be partly overlapping at first, but nonetheless distinct.

Two points fall out of this exemplar-based view. First, it follows that even instances of completely regular patterns are redundantly stored as holistic forms. Speakers of English know that the plural of /kæt/ is formed through the

addition of a voiceless dental fricative, but this does not keep them from memorizing /kæts/ as a pattern of usage in its own right. The division of linguistic knowledge into productive rules on the one hand and exceptions on the other in the interest of representational parsimony has been criticized by Langacker (1987: 29) as 'the rule/list fallacy': It is not necessary to settle for either one or the other, speakers demonstrably do both (Dąbrowska 2008). Second, the exemplar-based view suggests that linguistic categories are fuzzy and gradient (Aarts 2007). Words, syntactic constructions, and also phonemes are represented as categories with substantial category-internal variation as well as overlap with other categories. In addition, exemplar-based categories may have one center of gravity, i.e. a single prototype (Rosch 1975), but they may also be pluricentric, so that there are several typical subcategories that are connected through family resemblances and together make up the structure of a superordinate category.

The exemplar-based view of variation that is 'built into' the usage-based model of language holds a natural explanation for the fact that many linguistic forms develop multiple meanings over time, or may exhibit changes in their morphosyntactic behavior. What may start as a peripheral, context-dependent use of a form may eventually become a conventionalized pattern of usage. This insight is relevant for the study of lexical semantic change, where the development of polysemy can be observed. For instance, the English noun *paper* has, besides its sense of 'thin writing material', developed the senses of 'a piece of academic writing' and even 'an academic conference talk' (Nerlich and Clark 2001). Hence, we find utterances such as *John gave an interesting paper*, which refer to the 'talk' sense, but not to any of the others.

Variation is furthermore important for the study of grammaticalization (Hopper and Traugott 2003), where gradual changes in usage lead to what is called de-categorialization (Hopper 1991), i.e. the development of discrete categorical differences between linguistic units. To illustrate, the English phrase *seeing as though* (Taylor and Pang 2008) has developed into a clause connector in expressions such as *You should go and talk to him, seeing as though you're his only relative*. The meaning of the connector can be circumscribed as 'considering that' or 'since'. It is clear enough that the clause connector goes back to a pattern that involves the lexical verb *seeing* in the sense of 'perceiving visually', but in several ways the form *seeing* that is part of the connector has become categorically different from its verbal source. First, unlike lexical *seeing*, the connector may not be used with a copula and an explicit subject (**I am seeing as though...*). Second, lexical *seeing* can be negated or modified by an adverb, but this is not possible with the negator (**Clearly seeing as though...*). Third, lexical *seeing* may be followed by a *that*-clause (*Seeing that John left...*) or an accusative-cum-infinitive construction (*Seeing him leave...*), but not by a canonical declarative clause (**Seeing John is leaving...*), which is the default choice for *seeing as though*.

An area of language study that has long been concerned with variation in usage is of course sociolinguistics (Labov 1994, 2001, 2010). The growing awareness that sociolinguistic work is of tremendous importance for the usage-based research program has been termed the 'social turn' in Cognitive Linguistics

(Harder 2010). What this social turn boils down to is a more realistic notion of speakers' linguistic knowledge. The idea of an idealized speaker as a 'brain in a vat' is no longer tenable if speakers are viewed as social agents that vary their language use according to the situational context. If a speaker wants to express a concept that is cognitively represented by a cloud of exemplars, which of these exemplars might be the most appropriate target for the context at hand? For instance, how speakers will formulate a request for someone to step aside will depend on a number of factors, including how well they know their interlocutor, how much the request interferes with their interlocutor's personal sphere, and how well the interlocutor can be assumed to anticipate the nature of the request (Brown and Levinson 1987). Likewise, in cases where there are different phonological realizations of a given form, such as for instance *running* with either a final [ŋ] or a final [n], speakers' choices will depend partly on their social allegiance with their interlocutor. Lastly, choices between alternative lexical expressions, such as *coat*, *jacket*, or *anorak*, are of course motivated by the prototypicality of the referent in question, but they also have a social dimension (Geeraerts et al. 1999, Grondelaers and Geeraerts 2003). Knowledge of language thus includes knowledge of how to say things in a certain situation, which is a conception of linguistic competence that goes well beyond the ability to distinguish between sentences that are 'grammatical' and 'ungrammatical' respectively. As is pointed out by Geeraerts (2010: 238), a socially informed cognitive linguistics stands to gain a lot from engaging with the empirical methodologies of variationist sociolinguistics. These methods have been developed with the explicit goal of teasing apart which factors lead speakers to talk in a certain way in a certain situation, thus yielding small-scale models of what speakers must know in order to use a set of variant forms in appropriate ways. Thus far, most work in cognitive sociolinguistics has focused on issues in language synchrony (cf. Kristiansen and Dirven 2008, Geeraerts et al. 2010), but as language variation and change are inextricably interlinked, some research also has addressed cognitive aspects of variation in diachrony (Geeraerts et al. 1999), and more work in that spirit is underway.

Finally, more and more studies that take a usage-based approach to language change adopt Construction Grammar (Goldberg 1995, 2006) as a theoretical framework (Israel 1996, Verhagen 2002, Bergs and Diewald 2008, Traugott and Trousdale 2010, amongst many others). These studies investigate how the usage of symbolic form-meaning pairings shifts over time. Changes in usage patterns can be taken to reflect gradual differences in the corresponding generalizations that represent these constructions in speakers' minds. Present-day speakers of English thus cognitively represent a construction such as the *s*-genitive (*John's brother*) in a way that is different from how it used to be represented in the past (Szmrecsanyi 2010). Work in this area overlaps to a large extent with ongoing research into grammaticalization. However, the project of Diachronic Construction Grammar is broader in scope, as it not only comprises the development of grammaticalizing constructions, but also changes in constructions that are not readily defined as grammatical (Noël 2007). So while it might be a matter of debate whether or not a construction such as *What's X doing Y?* (Kay and Fillmore 1999) falls into the domain of grammatical markers, the emergence of this construction in English usage would definitely be a

question of interest in Diachronic Construction Grammar. A second reason to treat the constructional perspective on language change as a subject of its own is that changes in constructions include processes that go beyond the kinds of developments that are recognized in grammaticalization. For instance, some definitions of grammaticalization exclude certain types of word order changes (Hopper and Traugott 2003: 24) that would fall squarely into the domain of Diachronic Construction Grammar.

To sum up this section, the usage-based model of language is deeply interconnected with issues of language change that pertain to all levels of structure and meaning, i.e. everything from phonemes to syntactic constructions and further to discourse patterns, and everything from stable, conventionalized meanings to purely contextual and incidental meanings. The domain-general socio-cognitive processes that underlie language use in the present are also responsible for the fact that there is gradual change both in the patterns of usage and in the cognitive representations that speakers abstract away from those patterns. The following sections will return to the four aspects of language change that have been raised in this section, offering more examples and further motivating the claim that language change and human cognition are mutually interdependent.

3 Lexical semantic change

One of the key insights from work on cognitive lexical semantics (Speed et al, this volume) is that word meanings are multifaceted and flexible. Depending on the context of use, a word such as for example *book* may mean quite different things.

- (1) a. That book is slightly damaged.
- b. That book is now a movie with Leonardo DiCaprio.
- c. That book has been translated into over thirty languages.

The above examples make reference to a book as a physical object, as a story, and as a written text that can be translated. To come to terms with such flexibility, Croft and Cruse (2004: 109) speak of the meaning potential of a word, which they define as '*a region in conceptual space*' that outlines the range of possible interpretations that a word may have. Contained in that region are one or more areas that speakers will consider as central. These areas represent prototypical meanings, which are those that speakers will learn early during first language acquisition, verify swiftly as category members, offer as examples when asked, and rate as highly typical in experimental settings (Croft and Cruse 2004: 78). Importantly, the meaning potential of a lexical item may change over time. The conceptual space covered by a word may grow to include new meanings, or it may in fact shrink, so that some meanings fall out of use. In any event, the semantic changes that can be observed with a given lexical item reflect conceptual associations that speakers would have made between related meanings. Particularly important kinds of associations in this regard are metonymy (Barcelona, this volume) and metaphor (Gibbs, this volume). Over time, repeated meaning extensions give rise to the development of polysemy

(Gries, this volume), so that the meaning potential of a word is divided up into conceptual regions that are relatively distinct. Depending on how strong or weak the associations between these regions are, speakers may thus distinguish different word senses. This is probably not the case with *book*, whose different meanings are closely related, but it applies to a word such as *paper*, whose senses of 'material', 'academic article', and 'conference talk' are fairly distinct.

Nerlich and Clarke (2001: 261-263) discuss several examples of historical semantic change that involve metonymic reasoning, specifically conceptual associations between objects and related activities. The word *counter*, for instance, used to refer to an accountant's tool, an object made for counting. This meaning was extended to the accountant's desk, at which the counting was taking place. Eventually, the word *counter* was generalized to refer to any kind of desk in a commercial setting. As another example, the noun *toilet* entered the English language as a French loan word referring to a piece of cloth, which was used for wrapping clothes, and later also as a cover for one's shoulders while hairdressing, or for the covering of a dressing table. Through that association, *toilet* came to designate the things on the dressing table, the act of dressing itself, as well as the room in which the dressing took place. As dressing rooms were furnished with facilities for washing and performing bodily functions, *toilet* became a convenient euphemism for rooms of this kind, even when they did not have any dressing tables in them.

Whereas metonymic associations can go freely back and forth between objects, their parts and wholes, and related activities and persons, metaphorical association patterns are believed to be more constrained, insofar as changes tend to be unidirectional, going from a more concrete source domain to a more abstract target domain. For example, given that the word *fruit* synchronically has, amongst others, the senses 'edible product of a plant' and 'result', it would be a default assumption that the latter is a metaphorical extension of the former. It is however not always possible to exploit synchronic polysemy for the purpose of internal semantic reconstruction. Allan (2012: 32) presents the case of *dull*, which has the senses 'blunt', 'not clear or bright', 'stupid' and 'boring', amongst several others. Whereas it might be assumed that the senses denoting physical qualities are historically prior to the senses denoting mental and perceptual qualities, the historical record, in this particular case the Oxford English Dictionary, does not support that assumption. It thus remains a difficult and non-trivial task to bring metaphorically related word senses into a historical sequence. The hypothesis of unidirectionality in semantic change will be discussed further in the section on grammaticalization, where it is of central concern.

Besides metonymic and metaphorical shifts, lexical items also tend to undergo processes of narrowing and broadening. In such cases, the meaning of a word either comes to refer to only a subset of its erstwhile referents (e.g. English *deer* from Old English *dēor* 'animal') or, conversely, a word widens in its categorical scope (e.g. English *manage* from Early Modern English *manege* 'train / direct a horse'). Semantic shifts of this kind have sometimes been subsumed under the heading of metonymy (Seto 1999), but it may be useful to reserve separate labels

for categorical relationships on the one hand, which concern the processes of narrowing and broadening, and contiguity relationships on the other, which concern metonymic extensions proper.

A final aspect of lexical semantic change to be discussed here is the fact that lexical items may undergo changes that do not affect their referential meaning, but rather their affective or evaluative meaning. A word that undergoes pejoration develops increasingly negative connotations, conversely, a word undergoing amelioration acquires more positive connotations. An example for the former would be the example of *toilet* that was already mentioned above. Initially, the word *toilet* functioned as a euphemism for 'a place where bodily functions are performed'. Over time however, euphemisms tend to wear out, so that they acquire the negative connotations that are associated with their referents. As a consequence, new euphemisms have to be invented to replace the old ones. Hence, present-day speakers prefer *bathroom* to *toilet* and *disabled* to *crippled*, and most nation states have a *ministry of defense* instead of a *ministry of war*. Keller (1994) explains the cyclic replacement of euphemisms in terms of an emergent process that he describes as the 'invisible hand': Speakers aim to use socially acceptable expressions and thus will rather err on the side of caution, choosing a relatively more indirect term. As speech events of this kind repeat, an erstwhile euphemism comes to be regarded as the new default, whereas the old default term seems too direct and thus undergoes pejoration. The cognitive underpinnings of the so-called euphemism treadmill (Pinker 2002) include social awareness, i.e. speakers' ability to engage in 'mind-reading', and an exemplar-based linguistic memory, which allows speakers to keep track of how often a phenomenon is labeled with one of several alternative expressions. Besides pejoration, there is also the converse development, amelioration. This process has been at work in examples such as *nice*, which used to mean 'ignorant, stupid', and *marshal*, which used to mean 'person who tends horses'. Both terms thus have meanings in Present-Day English that are more positive than their respective earlier meanings. Whereas pejoration is a process that can receive a principled cognitive explanation, amelioration has to be seen as a relatively sporadic and circumstantial phenomenon.

Summing up this section, it can be stated that lexical semantic change reflects several domain-general socio-cognitive processes, such as reasoning in terms of metaphor and metonymy, categorization, social awareness, and exemplar-based memory. In their mutual combinations, these processes lead to a great variety of different types of lexical semantic change. A typology of these kinds of change that further explains their respective cognitive motivations and thus expands on what is offered here can be found in Blank (1999).

4 Grammaticalization

Whereas the trajectories of change in the domain of lexis are relatively unconstrained and hence unpredictable, pervasive regularities have been documented in the domain of grammatical change. Studies in grammaticalization (Heine et al. 1991, Bybee et al. 1994, Heine and Kuteva 2002, Hopper and

Traugott 2003) have established that across languages, grammatical forms come into being and develop in strikingly similar ways. In order to elaborate on this point, it is necessary to clarify briefly what is meant by the terms grammar and grammaticalization.

Grammar (Diessel, this volume) has in generative traditions been defined as a system of rules allowing speakers to produce well-formed utterances. Accompanying such a rule system would be a lexicon supplementing the words that can be put together into sentences by means of those rules. In Cognitive Linguistics, this dichotomy of a grammar and a lexicon is replaced by an integrated model. Knowledge of language is viewed as a 'constructicon' (Goldberg 2006: 64), that is, a network of symbolic units that contains exemplar-based representations of both highly abstract syntactic constructions, semi-fixed phrases, morphological constructions, and also simplex lexical items. Grammar, in that view, refers to the relatively more abstract parts of such a network. This would include syntactic schemas for questions, ditransitives, or cleft sentences, but also morphological schemas that serve as templates for the usage of verbs in the past tense, nouns in the plural, or adjectives in the comparative. Further, elements such as determiners, pronouns, or clause linkers, which have highly schematic meanings and commonly project an adjacent linguistic structure, would also be located towards the grammatical end of the constructicon. The question of what 'counts as grammar' would thus primarily be answered on the basis of semantic and structural schematicity: A linguistic form is to be viewed as grammatical if it is schematic in form and if it conveys a relatively abstract meaning that can be characterized as a grammatical function, i.e. tense, aspect, modality, number, gender, case, definiteness, comparison, subordination, or topicality, to name just a few. Conceived of in this way, a terminological opposition of grammar and lexis can be maintained despite the fact that no crisp categorical distinction is made between the two. Towards the lexical end of the continuum, constructions are fully specified with regard to form and highly specific in meaning. Towards the grammatical end of the continuum, constructions tend to be schematic in form, more abstract in meaning, and internally complex (cf. Langacker 2005: 108, Figure 3). Importantly, they are also relatively more frequent in usage (Bybee 2007, ch. 16).

As was pointed out in the introduction, the usage-based perspective on language is inherently dynamic. Understanding what grammar is hence depends to a large extent on an understanding of how this grammar came into being. This question is addressed in research on grammaticalization. Grammaticalization refers to *'the process whereby lexical items and constructions come in certain contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions'* (Hopper and Traugott 2003: xv). With regard to the definition of grammar that was offered above, this means that when a word or construction grammaticalizes, a part of the constructicon is re-structured so that form and meaning of the grammaticalizing unit increases in schematicity as it acquires a grammatical function. Typically, the grammaticalizing unit simultaneously undergoes changes in its combinatorics.

Regarding these aspects of change, Traugott (2010) distinguishes two main pathways of grammaticalization. In the first of these, grammaticalizing forms reduce in phonological substance and become increasingly dependent on a morpho-syntactic host structure. This pathway produces markers of grammatical categories such as tense, person, case, or voice, which many languages express as obligatory inflections on the verb. One example of this would be the Germanic weak past tense marker found in forms such as English *walk-ed* or German *sag-te* 'said', which derives historically from a formerly independent verb *dōn* 'do' that was postposed to the main predicate (Kiparsky 2009). Another example is the inflectional passive in the North Germanic languages (Heltoft 2006). The final alveolar fricative in Swedish examples such as *Ingenting hörde-s* 'Nothing was heard' or *Dörren öppnade-s* 'The door was opened' derives from a full reflexive pronoun *sik* 'self' that became attached to its verbal host. The formal and combinatory changes that occur in these and other similar cases have been summarized by Lehmann (1995) as parameters of increasing degrees of grammaticalization. As a form grammaticalizes, its relative placement becomes increasingly fixed, its presence is increasingly obligatory, its integrity as an independent word diminishes, it reduces its semantic scope to its host, it coalesces phonologically with the host, and it becomes part of a tightly organized paradigm of alternative forms, such as present vs. past or active vs. passive. Importantly, all of these changes can be interpreted as the result of increased frequency of usage. Through the repeated use of a certain sequence of linguistic units, routinization and chunking lead to fixation, semantic association, coalescence, reduction, and ultimately obligatorification. Whereas this pathway of 'morphologization' arguably still represents the most widely shared definition of grammaticalization, inflectional morphology only comprises a subpart of the grammatical end of the constructicon. In particular, syntactic constructions and elements such as clause linkers or discourse markers are not accounted for in this pathway, and yet, their emergence would seem to constitute grammaticalization in a straight-forward interpretation of the term.

Traugott (2010: 274) therefore proposes a second pathway under the heading of 'grammaticalization as expansion'. Expansion here refers to three separate processes that have been identified by Himmelmann (2004). The first of these is host-class expansion, which describes the fact that grammaticalizing units often do not reduce their combinatorial variability but conversely, are observed to expand the range of environments in which they can occur. An example of this would be the English *it*-cleft construction (Patten 2010). The construction initially just accommodated nominal elements in the focus phrase, as in *It was the butler that killed them*. In its later development, the construction expands to accommodate prepositional phrases (*It's in December that she's coming*) and even subordinate clauses (*It's because you cheated that you won*). The second type of expansion is syntactic expansion, which is the inverse process of Lehmann's parameter of scope decrease. Some grammaticalizing forms increase in syntactic scope. Notably, this applies to the development of discourse markers (Tabor and Traugott 1998) such as English *in fact*. As a discourse marker, it may take scope over an entire clause-level utterance (*In fact, why don't we ask John?*). As an adverbial, from which the discourse marker derives, it only takes scope over a phrase-level constituent (*If John in fact leaves the company, we'll hire Bob*).

The third type of expansion is semantic and pragmatic expansion, which boils down to increasing schematicity in meaning of exactly the kind that was observed in the cases of morphologization that were discussed above. This third type of expansion hence works in parallel in both pathways of grammaticalization whereas the two other types of expansion are specific to the second pathway.

Grammaticalization as expansion shares a number of characteristics with lexical semantic change, in particular the processes of metonymic extension and semantic broadening. An example for this can be seen in the development of the degree modifier *a lot of* (Traugott 2008: 230). The lexical noun *lot* initially referred to a small wooden object that was used in the practice of selecting by chance. By metonymic extension, the noun came to refer to that which a person received if their lot was drawn, i.e. the allotment. Hence, the construction *a lot of* could develop a more general meaning equivalent to 'a certain quantity of something'. The meaning of 'a certain quantity' was then further extended to the present-day interpretation of 'a large quantity'. This change coincided with a syntactic reanalysis of the expression. Whereas in earlier usage, the noun *lot* constituted the head of an expression such as *a lot of books*, the copula in an utterance such as *A lot of books were on sale* agrees in number with *books*, indicating that reanalysis has taken place. As *a lot of* came to be conventionally associated with the meanings of 'many' and 'much', it became possible to use *a lot* as a degree modifier, as in *a lot faster* or *I enjoyed it a lot*. To summarize, this process of change shows host-class expansion, as *a lot* spreads across syntactic environments in which it was not found before; it shows syntactic expansion in examples such as *There was a lot of me and him not getting along*, with *a lot* taking scope over a clause rather than a nominal; and there is semantic and pragmatic expansion, which is evident in expressions such as *a lot faster*, in which *a lot* goes beyond specifying a quantity of physical things. It is especially the latter type of expansion that is also often found in lexical semantic change.

But despite such similarities with lexical semantic change, it was pointed out in the beginning of this section that processes of grammaticalization tend to be relatively more constrained and highly similar across genetically unrelated languages. Comparative research (Bybee et al. 1994, Heine and Kuteva 2002) has identified numerous semantic pathways that are cross-linguistically pervasive in the development of grammatical forms. For example, constructions with the grammatical function of future time reference tend to develop out of a small set of potential sources. Typologically common are lexical verbs of coming and going, verbs of obligation, and verbs of desiring. Another example can be seen in clause linkers with causal meaning, which often go back to elements that mean 'after' or 'since'. Yet another example would be markers of spatial relations, which in many languages exist in the form of adpositions or inflectional case affixes. Historically, these markers often derive from body part terms, so that there are etymological relations between expressions meaning 'face' and 'in front', 'back' and 'behind', or 'belly' and 'in'. These regularities in semantic change contrast sharply with the idiosyncratic trajectories in lexical semantic change. A semantic change such as the development of *nice* from 'stupid' to 'pleasant' is probably unique in the world's languages. By contrast, the

development of *be going to* from 'movement' to 'future' represents a type of change that is highly common.

What explains the cross-linguistic regularities in grammaticalization is the fact that its semantic pathways are motivated by metonymic and metaphorical mappings that are widely shared across cultures. For instance, the grammaticalization of future markers from motion verbs draws on the conceptual metaphor TIME IS SPACE, which in turn is grounded in the repeated correlated experience of travelling through space and the passage of time. For the traveller, successive points in space correspond to successive points in time. Similarly, the development of causal meaning out of temporal meaning is grounded in the metonymic association of cause and effect. If two events are presented as happening in temporal sequence, as in *After Bob joined our team, things took a turn for the worse*, human observers have the tendency to view the two as causally related. This associative pattern is so deeply ingrained in human cognition that philosophers even have a name for it: It is called the *post hoc ergo propter hoc* fallacy.

While developments in grammaticalization are arguably more strongly constrained than developments in lexical semantic change, it is disputed how regular grammaticalization really is. While grammaticalization is anything but deterministic - changes do not need to happen and may stop at any time - the claim has been made that when a form grammaticalizes, it undergoes a change that is in principle irreversible (Givón 1971, Lehmann 1995). This is the so-called unidirectionality hypothesis, which appears to hold true as a statistical tendency, but which also has to face a number of counterexamples (Janda 2001). While the validity of many such counterexamples is debated, one widely accepted case is the development of the enclitic *s*-genitive in English and the North Germanic languages out of a case ending, which thus reverses several of Lehmann's parameters (Norde 2009). The strong tendency of unidirectionality in grammatical change can again be explained with reference to frequency of usage (Bybee 2011: 77). Repeated use of a form leads to schematization in form and meaning, but once this has happened, not even subsequent decreases in frequency can restore the semantic or formal details that characterized the lexical source of the grammaticalized form.

In summary then, cognitive factors such as the ability to form schemas from repeated tokens of experience and the ability to form metaphorical and metonymic associations go a long way towards explaining the regularities that are observed in grammaticalization, notably the presence of cross-linguistically attested semantic pathways and the tendency of unidirectional change in both morphologization and grammaticalization as expansion. The relatively more constrained nature of grammatical change, when compared to lexical semantic change, lies in the fact that grammatical forms tend to be more frequent in usage. The powerful shaping force of repetition is thus much more at work in the emergence of grammar than it is in the expansion of the lexicon.

It was discussed in the introduction to this chapter that there is a growing trend in cognitive linguistics towards a view of language as a socially embedded phenomenon (Kristiansen and Dirven 2008, Geeraerts et al. 2010, Harder 2010). In the usage-based model of language, social factors stand on an equal footing with cognitive factors, and many important concepts, as for instance joint attention or face work, indeed resist a categorization as either one or the other. The introduction also mentioned that most work that has been done to date under the heading of cognitive sociolinguistics has addressed issues in language synchrony. Nonetheless, there are a number of studies that illustrate the approach of a cognitively oriented historical sociolinguistics, which borrows not only theoretical concepts from sociolinguistics, but crucially also many methodological tools.

Geeraerts et al. (1999) study diachronic variation in the lexicon of Belgian and Netherlandic Dutch. Their main research question is whether the two standard varieties of Dutch become more or less similar over time. This question is investigated on the basis of lexical units for items of clothing and for terms in football, which are retrieved from texts that were written in the 1950s, 1970s, and 1990s respectively. What is investigated is in what ratios a concept such as 'tight-fitting trousers made of stretch fabric' is expressed by words such as *legging*, *leggings*, or *caleçon*, and whether these ratios become more or less similar in Belgian and Netherlandic Dutch as time goes on. Geeraerts et al. analyze the usage of multiple lexical items in the domains of clothing and football, finding that in both domains there is increasing convergence between the two standard varieties, and that it is specifically Belgian Dutch that develops a normative orientation towards the Netherlandic standard. The general conclusion from the study is that when speakers label an object with a linguistic form, that process is influenced by cognitive factors, such as categorization and assessment of prototypicality, but also by social factors, such as orientation towards a certain standard variety. Geeraerts et al. thus show that social factors are at work in onomasiological change. Beyond that, they are also involved in semasiological change.

Robinson (2012) analyzes semasiological change in the English adjective *skinny*. In order to do so, she uses the socio-linguistic concept of apparent time, i.e. differences between speakers of different age brackets with regard to a linguistic variable. The study prompts respondents from different age groups and socioeconomic backgrounds for the meaning of *skinny*. While the sense 'thin' comfortably accounts for the majority of responses across all groups, the results indicate that certain senses of *skinny* are only used by older cohorts of speakers, as for instance 'mean, stingy' or 'showing skin'. The analysis also shows that the recently developed sense of 'low-fat', as in *skinny latte* 'coffee with low-fat steamed milk', is restricted to respondents between 19 and 60 years of age. Furthermore, it emerges that not only age but also other social factors account for the distribution of the different senses. For instance, the sense 'mean, stingy' is offered as a response mostly by old respondents from a relatively low socio-economic background. Robinson's study shows that lexical semantic change is not only a cognitive phenomenon that draws on processes such as metonymy

and metaphor, but at the same time very much a social phenomenon, as new word senses propagate through networks of socially related speakers.

Of course, cognitive studies of sociolinguistic change have not been limited to developments in the lexicon. Socio-cognitive factors are also crucial for the study of grammatical change. Szmrecsanyi (2010) studies how the dynamics between the English *s*-genitive and the *of*-genitive has changed in recent British and American English across different text genres. As has been shown across many different studies, genitive choice in English depends on several factors relating to meaning and processing, such as the animacy of possessor and possessum and their length and thematicity. Several language-external factors have also been shown to matter to genitive choice. Specifically, the *s*-genitive is favored in informal genres, and it is more frequently used in American English. Given that a multitude of factors is at work, it is a non-trivial task to determine whether and how anything has changed in the ecology of factors that condition genitive choice in English. In order to analyze the interplay of cognitive and cultural factors as it unfolds over time, Szmrecsanyi compares how these factors govern genitive choice in ten different corpora, which differ with regard to modality (speech, writing), genre (conversation, reportage, editorial), variety (British, American), and time (1960s, 1990s). The main finding is that genitive choice is consistently governed by the same semantic and cognitive factors across the different corpora. For instance, speakers and writers of all corpora favor the *s*-genitive with animate possessors and when the possessum is long. However, the respective strengths of the factors is modulated by the language-external factors. The effect of priming for instance is more pronounced in the spoken corpora as compared to written corpora. Thematicity of the possessor favors the *s*-genitive, but only in writing, not in speech. The analysis also reveals several differences that concern the variable of time. For instance, genitive choice in British editorials becomes more colloquial between the 1960s and 1990s. The ecology of factors governing the choice between *s*-genitive and *of*-genitive thus increasingly resembles the pattern that is found in spoken data. Similarly, the gap between British and American press texts is widening over time, which is mainly due to continuing 'Americanization', i.e. American usage developing further away from older norms. On the whole then, the study shows that social factors are an indispensable complement to the cognitive factors that underlie probabilistic choices in grammar.

The examples of cognitively oriented historical sociolinguistics that this section has discussed present analyses of fairly recent and short-term changes. This reflects to a certain extent the focus on recent or on-going developments that characterizes the sociolinguistic mainstream. However, there are several strands of work that have established a wider temporal horizon in the sociolinguistic study of language change, addressing for instance Canadian French (Poplack and St-Amand 2007) or Early Modern English (Nevalainen and Raumolin-Brunberg 2003). Gries and Hilpert (2010) draw on the latter in a diachronic study of English present tense suffix *-(e)th*, which marks the third person singular. Between the early 15th century and the late 17th century, the interdental suffix that is seen in forms such as *giveth* gradually disappeared, and it was replaced with an alveolar fricative, as in *gives*. The overall phenomenon that is observed

here is a case of variation in which one variant gradually 'wins out' over another one. This means that, similarly to the developments in genitive choice studied by Szmrecsanyi (2010), there are changes in the conditioning factors that govern the choice between *-(e)th* and *-(e)s*. In particular, it appears that those conditioning factors that once biased speakers towards the interdental variant are no longer at work: Speakers of Present-Day English invariably choose the alveolar variant. Among the factors that used to underlie the variation between the two variants, some concern language structure and some concern social factors. For instance, structural influences on the choice between the two include whether the verb stem ends in a sibilant, as in *wish*, or whether the following word begins with either an *s* or *th*. Social factors include the gender of author and intended recipient. Gries and Hilpert show that the observed variation is best explained by a dynamic interplay of structural and social factors. Crucially, some influences do not stay the same over time. For instance, verb-final sibilants matter, but only during one early period, after which the effect disappears. Similarly, the effect of writer gender is there, but it is transient. The study thus shows that there is not only a complex interplay of language-internal and language-external factors at work, but that this interplay is inherently dynamic and subject to change.

6 Diachronic Construction Grammar

The final avenue of research to be discussed in this chapter is the diachronic branch of Construction Grammar. Studies in Diachronic Construction Grammar focus on shifts in the usage of a particular conventionalized form-meaning pairing, i.e. a construction in the sense of Goldberg (2006: 5). These shifts may concern any aspect of a construction, notably its form and meaning, but also its text frequency, its productivity, or its dispersion across different types of writing or speech (Hilpert to appear). In the well-worn example of English *be going to*, all of these aspects have undergone significant changes, but there are many cases of constructional change where only some of these aspects have been subject to change. For instance, the English *many a NOUN* construction, as exemplified by *many a day* or *many a mile*, has undergone recent changes in meaning and frequency, but not in form (Hilpert 2012).

Given that in Cognitive Linguistics knowledge of language is viewed as knowledge of constructions, it could be asked whether Diachronic Construction Grammar does not in fact subsume all phenomena of change that have been discussed in the previous three sections. In lexical semantic change, grammaticalization, as well as in sociolinguistic change, one can observe changes that pertain to individual form-meaning pairings, or to small sets of such symbolic units. It is certainly true that a constructional approach to language change largely converges in theory as well as in subject matter with the areas of research that were discussed above. The distinguishing mark of Diachronic Construction Grammar is that it maintains a focus on linguistic generalizations at the level of individual constructions. This is not necessarily so for the other approaches: Historical sociolinguistics might address issues such as systematic sound changes, which pertain to many lexical items at the same time. Similarly,

research on lexical semantic change and grammaticalization aims to uncover the general pathways along which lexical items and grammatical formatives develop. The generalizations that come out of this kind of research span many constructions, often across many languages. The following paragraphs illustrate the approach of Diachronic Construction Grammar with a few examples.

A pioneering study of constructional change is Israel (1996). This study addresses the emergence of the English *way*-construction, as in *John cheated his way into law school*. The construction expresses the creation of a path through difficult terrain, often in a metaphorical interpretation. In accordance with this constructional meaning, the *way*-construction occurs in present-day usage with verbs denoting the manner of a movement, such as *crawl*, *wind*, or *stumble*, and with verbs such as *dig*, *cut*, or *force*, which can encode the means to create a path. Israel shows on the basis of data from the Oxford English Dictionary that both of these verb classes developed independently at first. Through repeated analogical formations, both the manner-thread and the means-thread occurred with an increasingly greater range of verbs, which eventually led to the formation of a single, overarching generalization, i.e. the modern *way*-construction. Israel observes that simultaneously to the increasing schematization of the constructional meaning, there is an increasing obligatorification of the path constituent of the construction. Whereas there are many 'bare' examples in earlier usage, such as *The moving legions speed their headlong way*, the modern *way*-construction requires the presence of a phrase such as *across the field* or *along the river*. In summary, the development of the *way*-construction is an example of a widening generalization: Speakers kept track of the verbs that they heard in the construction and kept producing analogical formations that widened the cloud of exemplar tokens that represented the construction in their minds.

Verhagen (2000) offers another early study of constructional change in which he analyzes the history of the Dutch analytic causative constructions with *doen* 'make' and *laten* 'let'. In Present-Day Dutch, the two constructions differ with regard to animacy and directness. Whereas *doen* primarily occurs with inanimate causers in contexts of direct causation, e.g. the sun causing temperatures to increase, *laten* favors animate causers and indirect causation, such as a writer causing a change of state in someone else's mind by means of written communication. Historically, Verhagen observes an apparent shift in usage. When speakers of Present-Day Dutch are confronted with some 18th century examples of causative *doen*, they can understand what is meant but would themselves use *laten* instead of *doen* in order not to sound old-fashioned. Verhagen goes on to show that the shift in usage has not been a mere replacement of *doen* with *laten*, the latter in fact does not increase in text frequency in the diachronic corpora that are consulted. Instead, what underlies the development is a more general change in the texts that are sampled. In earlier texts, causative *doen* is commonly used with causers that represent authorities such as kings, military officials, or doctors who prescribe treatments. Over time, the semantic category of authoritative causers drastically diminishes. This affects the usage of *doen*, whose meaning of direct causation is less and less suitable for the expression of causation between human beings. The usage of

laten, on the other hand, is not affected much by this change. Verhagen further corroborates the idea of a cultural change with historical data of *doen* and *laten* that shows a gender asymmetry. Expectably, *doen* is used more often with male causers, whereas *laten* is more frequent with female causers. Typically, *doen* is used for the case of male causers acting on female causees. The intriguing idea of cultural change acting on usage is that the respective meanings and structures of constructions such as causative *doen* and *laten* may stay the same, and yet, there may be constructional change going on, insofar as there are changes in frequency and changes in the dispersion of the constructions across different text types.

Most studies in constructional change up to the present have addressed syntactic phenomena, but as Construction Grammar aims to be an all-encompassing theory of language, it stands to reason that also change at lower levels of linguistic organization should be of interest. Hilpert (to appear) studies historical changes in the usage of the nominalizing morpheme *-ment*, which is found in nouns that encode actions (*development*), results (*settlement*), or means to an action (*refreshment*). The suffix tends to occur with verbal stems, but there are sporadic attestations of adjectival stems (*merriment*) and nominal stems (*scholarment*). Like Israel (1996), Hilpert uses data from the OED to analyze how the *ment*-construction developed over time. The dictionary entries suggest that an initial group of borrowed French forms served as a critical mass for the formation of a native productive schema. This schema is initially very closely modeled on existing loan words: Since the French loans typically involved transitive verbal stems and denoted actions (*punishment*, *judgment*, etc.), native formations followed this tendency. There are occasional departures from the mainstream, as is evidenced by forms such as *merriment* or *jolliment*, which are based on adjectives, but none of these departures gain enough momentum to become sustainably productive. In the 20th century, the construction is entirely unproductive, and the only forms with *-ment* that show up as new entries in the OED are in fact old formations with a new prefix, such as *malnourishment* oder *noninvolvement*. The main result of the analysis is that the exemplar cloud of a construction may be pluricentric, such that there are particular subconstructions that can be productive at different points in time. Also, the analysis shows that Diachronic Construction Grammar is well-positioned to address issues of change in word formation.

7 Concluding remarks

The introduction of this chapter started with the question how issues of language change can possibly be relevant to Cognitive Linguistics. The preceding sections have tried to support the idea that the usage-based model that underlies synchronic research in Cognitive Linguistics is inherently dynamic, and hence not to be understood without reference to language change and language history. Any theory that aims to relate language and cognition thus needs to engage with issues of diachrony. By the same token, any theory of language change should be in accordance with what is known about language use and cognition in living speakers. Strengthening the on-going dialogue between historical linguistics and

psycholinguistics will be a worthwhile challenge for Cognitive Linguistics in the coming years. A guiding question in this enterprise would be how the four areas of research that were discussed in this chapter can inform our understanding of how cognition and language change relate to one another. The existing research on lexical semantic change, grammaticalization, historical sociolinguistics, and Diachronic Construction Grammar needs to be mutually contextualized, and the usage-based model of Cognitive Linguistics provides the ideal conceptual bracket for this undertaking. If this path is followed, it just may turn out that the study of language change is not a marginal aspect of Cognitive Linguistics, but rather one of its central concerns.

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