Toward a coherent account of grammatical constructionalization

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Elizabeth Closs Traugott

Stanford University

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Stanford University

Diachronic construction grammar addresses a range of theoretical topics from lexicalization to grammaticalization. In most cases, a historical dimension has been added to a largely synchronic theory, or construction grammar has been seen as a tool for diachronic analysis. In the spirit of rethinking grammaticalization in construction grammar terms, the present chapter focuses on how a constructionalization approach can inform certain debates in the grammaticalization literature. The specific debates addressed are: (1) Is it possible to reconcile the two current main views of grammaticalization as (a) reduced form and increased dependency (Lehmann 1995; Haspelmath 2004), or (b) expansion of contexts (Himmelmann 2004)? (2) Is there "pure" grammaticalization without analogy (Haspelmath 2004; Lehmann 2004)? (3) What relative weight should be given to reanalysis and analogy (Fischer 2007)? The answer to the first question is that from a constructional perspective the two approaches to grammaticalization can indeed be reconciled. With respect to the second and third questions, there can be no "pure" grammaticalization without analogy understood as a motivation (analogical thinking). Since reanalysis can occur independently of analogy and accompanies analogy understood as a mechanism (analogization), it encompasses more changes and is therefore primary. This approach is illustrated with a new look at the development of *BE going to* in English.

1. Introduction[1]

Recently, there has been considerable interest in diachronic construction grammar. An important early collection is Bergs and Diewald (2008). The field addresses a

range of theoretical topics from lexicalization to grammaticalization (Noël 2007) and encompasses a range of work using a variety of models of construction grammar. Some models assume at least a minimal level of language-specific innateness or universal grammar (UG), e.g. Fried (2008). Others are usage-based and assume that linguistic structure has to be learned, because it is not innate but derives from general cognitive processes, e.g. Barðdal (2001); Croft (2001); Traugott (2008a), and Trousdale (2008a). In most cases, a historical dimension has been added to a largely synchronic theory, or construction grammar has been seen as "a tool for diachronic analysis" (the title of Fried 2009). A coherent and restrictive account from a construction grammar perspective of the development of grammatical and lexical constructions over time is beginning to be articulated (e.g. Trousdale 2008a, b; Traugott & Trousdale 2013).[2] In this chapter I seek to show what such an account might include with respect to "grammatical constructionalization" and especially on how and to what extent it relates to grammaticalization.[3] I argue that grammatical constructionalization encompasses much of what has been discussed in the grammaticalization literature, while also going beyond it to include morphosyntactic changes that are more far-reaching than have been considered in most work on grammaticalization to date. This is because the architecture of construction grammar demands thinking in terms of both meaning and form, and not only of individual substantive constructions but also abstract schematic ones.

My focus is on how a constructional approach to change can usefully draw on and at the same time inform debates in the grammaticalization literature concerning three questions, specifically:

Q1. Are the two current main views of grammaticalization as (a) reduction and increased dependency (Lehmann 1995; Haspelmath 2004), or (b) expansion of contexts (Himmelmann 2004) reconcilable?
Q2. Is there "pure" grammaticalization without analogy (Lehmann 2004)?
Q3. What relative weight should be given to reanalysis and analogy (Fischer 2007)?

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2.   A recent proposal bringing together some of the threads discussed here is Nørgård-Sørensen, Heltoft, and Schøsler (2011). However, the approach privileges paradigms in ways not adopted here.

3.   The term "constructionalization" appears to have been used initially by Rostila (2004) and Noël (2007) for change viewed from a constructional perspective. A considerably more restrictive definition is proposed here.

As will become clearer below, I assume that change is change in usage, not grammars. This means that change is thought to result from what speakers of any age do with language (see Croft 2000; Bybee 2010) rather than from relatively passive language acquisition by children whose innate parameters are set by experience with input (see Lightfoot 1999). Furthermore, innovations made by individual users do not count as changes; only those that are replicated, transmitted to other users, and therefore conventionalized, do so (see Croft 2000, p. 5, on the joint necessity of innovation and propagation of that innovation for "change"). I also assume that the successive small "micro"-changes that sometimes give rise to systemic shifts are as important as or even more important than large-scale "catastrophic" changes, such as those that were privileged in some earlier work on change (e.g. Lightfoot 1979).

I begin by introducing a constructional view of change, and distinguish among different types of constructional changes (Section 2). Key to this discussion is a distinction between the development of new type-constructions ("constructionalization") and changes to features of existing constructions ("constructional changes"). In Section 3, I present some advantages of a diachronic construction grammar perspective on morphosyntactic change. In particular, I show how the two different views of grammaticalization mentioned in Q1 can be reconciled in a diachronic construction grammar approach. Section 4 addresses Q2 and especially Q3. In Section 5, the much-discussed development of *BE going to* 'future' is revisited as an example of the approach adopted here. Section 6 concludes.

2. A constructional account of change

In developing a constructional account of change I assume that language is made up of constructions (see e.g. Fillmore & Kay 1997; Goldberg 1995, 2006; Croft 2001). Constructions are language-specific symbolic pairings of form and meaning and are of any size from complex clause to affix (Goldberg 2006). Form and meaning in turn have various subelements or features, all of which can be subject to change. Minimally, in Croft's (2001) model, on the form side these are syntax, morphology, phonology, and on the meaning side semantics, pragmatics, discourse function. However, not all may be fully specified in any particular construction. Some constructions are "substantive" and item-specific; they are here called "micro-constructions." Others are abstract, superordinate sets or "schemas." These schemas may have subschemas. For example, the Ditransitive schema has several subschemas, and these are realized by micro-constructions, e.g. the

Cause-not-receive subschema is realized by e.g. *deny someone something*.[4] Constructions are types, parts of a language-user's knowledge system. The actual token utterances in which they are expressed are known as "constructs."

Constructions are gathered into a language-specific structured inventory, known as the "constructicon." In this constructicon there is a gradient between lexical and grammatical constructions. Lexical constructions have primarily contentful and referential semantics; they are naming strategies (Masini 2007, p. 269). Grammatical constructions have primarily procedural, linguistically relational, and non-referential semantics. They are relational strategies. The inventory of constructions is conceptualized as a network that includes taxonomic hierarchies allowing constructions to combine (or "unify"). For example, *Didn't she leave?* unifies members of the Question, the Negative, the Intransitive, and the Subject-auxiliary-inversion constructions, among others.

In the constructionalist account of change presented here, the crucial point is that the whole construction does not change but rather each feature may change independently, as will be illustrated in some detail in Section 5. It will be argued below that constructions undergo changes of two main types (the distinctions are, however, gradient):[5]

a. "Constructional Changes": these are changes that affect individual features of a construction, e.g. semantics (*will-* 'intend' > 'future'), morphophonology (*will* > *'ll*), and collocations (contextual expansion of the *BE going to* 'future' construction to include verbs not only denoting actions that one can go somewhere to do [e.g. *fight, visit*], but also states [e.g. *like, be*]). Such changes affect only micro-constructions.

b. "Constructionalization": this is the creation of a $form_{new}$-$meaning_{new}$ pairing through a sequence of small-step reanalyses of both form and meaning. Formal changes alone or meaning changes alone cannot constitute constructionalization, although they play a crucial role in enabling change. $Form_{new}$-$meaning_{new}$ signs are understood as types that are new to the system, i.e. as conventionalized pairings of form and meaning, not merely innovations by individuals. They may be micro-constructions, e.g. the emergence of the *BE going to* 'future,' or schematic, e.g. the emergence of the Determiner slot in Old

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4.   In earlier work, Traugott (2008a) and Trousdale (2010) referred to macro- and meso-constructions. These are roughly equivalent to schemas and subschemas.

5.   Smirnova, this volume, likewise distinguishes two types of change, but with more emphasis on context. Crucially, she conceptualizes constructionalization as a succession of growth and decline of contextual restrictions, whereas I see it as the result of such growth and decline (see also Traugott & Trousdale 2013).

English and the Definite Article construction within it (see Sommerer 2012, this volume). Constructionalization is accompanied by changes in degree of schematicity, productivity, and compositionality.

Constructional changes and constructionalizations are type-changes specific to particular constructions and classes of constructions. Sometimes such local changes may cumulatively contribute to general across-the-board change. For example, the loss of inflectional case and the development of prepositions in English involves individual constructions (e.g. the old Dative construction, an affix, was mostly replaced by the preposition *to*), but collectively the changes are part of a general shift in the language from relatively synthetic to relatively analytic morphosyntax. Space does not permit these kinds of systemic changes to be discussed here.

In the usage-based approach to change, change proceeds by small steps. It starts with micro-innovations at the level of the "construct" or token utterance, but can be considered to be "change" only when the innovation has spread to other speakers and been conventionalized (Step c. below). Because change is step-wise, micro-step by micro-step, the approach to constructional change outlined here can incorporate notions of both gradualness (diachronic) and gradience (the synchronic result of gradualness) (Traugott & Trousdale 2010).

As stated above in Section 1, there is no change without both innovation and propagation. The micro-steps in the process of change include, but are far from limited to, the following (which draw on the discussion of contexts for grammaticalization in Croft 2001; Heine 2002; and Diewald 2002; see also Smirnova, this volume):

a. Innovation. The hearer interprets a construct and analyzes it in a way that does not match the speaker's analysis.
b. The hearer who has (re)analysed this construct, and created a tenuous link between the construct and a new part of the constructional network, in turn reuses the construct with the new meaning or in distributionally new ways as a speaker rather than hearer.

Conventionalization begins when:

c. Other language-users go through similar (but not necessarily the same) processes. Such processes typically involve language-users loosely associating an implicature or "invited inference" from a construct with the semantics of an existing construction in the constructional network, preferring to use parts of the construct in a particular distributional niche, or repeating part of a construct as a chunk. As a result of repeated associations, groups of

language-users come to tacitly agree on a conventional relationship between the original form and a newly analyzed meaning. This leads to mismatch (see Francis & Michaelis 2003) between the morphosyntax of the original construction and the new constructs. Because of the conventionalization we can say there has been semantic reanalysis (Eckardt 2006), i.e. a constructional change. While the hypothesis is that meaning change precedes constructionalization, the possibility should not be excluded that in some instances pre-constructionalization changes are primarily distribution- and form-related.

Constructionalization occurs only when:

d. Some hearers (re)analyze the morphosyntactic form of constructs arising at Step c. When there have been morphosyntactic and semantic reanalyses that are shared across speakers and hearers in a social network, a new micro-construction or schema is added to the network, because a new conventional symbolic unit, and hence a new type node, has been created. This is constructionalization.

Post-constructionalization:

e. Further constructional changes may follow, such as collocational ("host-class") expansion (Himmelmann 2004), reduction of form due to routinization and frequent token use (Bybee 2010), and eventually obsolescence (Leech, Hundt, Mair, and Smith 2009, ch. 4).[6]

Productivity, schematicity, and compositionality are affected by constructionalization (see also Gisborne & Patten 2011). Change in productivity concerns the development of new type-constructions based on existing structural patterns (Barðdal 2008). This is a process that, focusing on expansion of collocations, Himmelmann (2004) calls "host-class expansion." Change in schematicity involves an increase or decrease in formal and semantic abstractness, and the creation or obsolescence of subschemas (or in some cases schemas). Finally, changes in compositionality concern the degree to which the meaning and structure of the parts are accessible.

A brief example is the development of *a shred of*, which is attested from the fourteenth century to present day in pseudo-partitive uses with concrete Ns (e.g. *cloth*). Pseudo-partitives are constructions that express a part or 'unit-of' relation as in *a piece of cake*. Both the head (NP1, 'unit') and the modifier (NP2) are

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6. See Colleman, this volume, for some post-constructionalization semantic changes in Dutch.

indefinite (Selkirk 1977). *A shred of* has the syntactic structure [a shred [of X]] (abstractly [NP1 [of NP2]]), where *shred* is the head, *of X* is the modifier, and the meaning is 'a small part of X.' In the eighteenth century *a shred of* begins to be found with abstract nouns referring to humans and nature (*mankind, nature*); i.e. there is gradual expansion in meaning, a constructional change. By the nineteenth century it appears with a large number of purely abstract and semantically positively oriented nouns (*honor, evidence, reputation*), where it can be construed only as a quantifier. Such collocations suggest that language-users have (unconsciously) reinterpreted the phonological sequence represented by *a shred of* when followed by an indefinite noun as [[NP1 of] NP2]]. In other words there has been a head-shift (Traugott 2008a; Brems 2011). It has undergone grammatical constructionalization, and been subsumed under the Quantifier construction schema, in a subschema that now includes other small size quantifiers such as *a scrap of*. As a result, *a shred of carrot* can now mean either 'a small piece of carrot' (pseudo-partitive) or, especially in negative polarity contexts, 'a small quantity of carrot' (cf. *There's not a shred of carrot in this so-called carrot cake*). In terms of productivity, the Quantifier construction and its subschemas have been extended by new a type-construction *a shred of*. In its quantifier use, *a shred of* is more abstract and less referential than in its pseudo-partitive use. It is also less compositional in the sense that *shred* cannot be interpreted in its literal meaning of 'concrete, small part.'

The ultimate objective of the constructional account of change is to show not only how constructions change, but also to develop a model of language change in general.[7] I argue that construction grammar provides a framework for providing traction on the problem of the artificial segregation of meaning and form that has been endemic to most work on grammaticalization (and, to an even greater degree, lexicalization). In particular, I seek to show how a constructional approach to change provides a framework for thinking about micro-changes, gradualness, and the extension of patterns based on exemplars. Another important issue is how changes in specific micro-constructions become linked to and affect general schemas.

In the next section, I turn to grammatical constructionalization, which I consider to be the development of constructions that are wholly or partially "procedural." Procedural meaning is abstract meaning that signals linguistic relations, perspectives, and deictic orientation (see Diewald 2011, on the deictic nature

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7.   This involves discussion of networks, "inheritance hierarchies" (taxonomic relationships among sets of constructions, Goldberg 1995, Torrent, this volume) and other characteristics of construction grammar approaches that are beyond the scope of this research.

of grammaticalization). Linguistic relations include indexical and information-structure marking (topic, definiteness, etc.), argument-structure marking (case), and marking of temporal phase (aspect), or of relationship to the time of speaking (tense). The formal dimensions with which procedural meaning is usually linked are traditionally known as grammatical features, such as demonstrative, aspect, and complementizer. Some procedural meanings, especially deictic ones, can be associated with referential, contentful constructions (e.g. main verb *come* and *go*), as well as abstract, non-referential ones (e.g. auxiliary *BE going to*). This is to be expected given the gradient nature of constructions and the gradualness of change, micro-step by micro-step. It may be noted that contentful deictic expressions are likely to be subject to grammaticalization and grammatical constructionalization, to which I now turn.

3.   Grammatical constructionalization

Much work on grammaticalization has assumed a model of grammar in which semantics and syntax are treated as separate components of a grammar. This has meant that, although grammaticalization has always been conceptualized in terms of changes in both form and function/meaning, the "clines" associated with it have been modeled with either one or the other perspective in focus, biasing analyses in favor of that perspective.

For example, while Lehmann includes semantics (especially bleaching) in two of his "parameters" of grammaticalization, specifically Integrity and Paradigmatization (Lehmann 1995, p. 164), his well-known nominal cline refers primarily to morpho-syntactic form:[8]

(1)   relational noun > secondary adposition > primary adposition >
        agglutinative case affix > fusional case affix (Lehmann 1985, p. 304)

On the other hand, while much of Bybee, Perkins, and Pagliuca's (1994) work on tense, aspect, and modality markers in the languages of the world has to do with coalescence and degree of fusion (i.e. form), their clines are expressed in terms of meaning changes. A partial cline (based on Bybee, Perkins, and Pagliuca 1994, p. 240) involving modality is:

(2)   ability > root possibility > epistemic possibility

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8.   However, Lehmann (2002) adopts a gradient view of linguistic structure with two poles, one lexicon and the other grammar.

Such a cline obscures the complexities of the correlated form changes, suggesting a far simpler set of modal changes than is actually attested.

Several advantages of the present constructional approach to change may be mentioned here. One is that, because the sign is its foundation, a construction grammar approach to morphosyntactic change requires researchers to consider both meaning and form equally. Therefore, the links between them can be directly addressed. Because individual micro-constructional changes may be either meaning changes or form changes, and because sequences of constructional changes lead to constructionalization and follow after it, there can be (and usually is) a mixture of meaning and form changes before and after grammatical constructionalization. The "stage" at which grammatical constructionalization is recognized is, as in much of the literature on grammaticalization, when new meanings, structures, distributions, and especially expansions are attested in the historical data (see Diewald 2002; Heine 2002; and Himmelmann 2004, on "contexts for grammaticalization").

A second advantage of the approach is that attention is not on the source but rather on the outcome of a change, and whether the resulting construction is primarily contentful (lexical) or primarily procedural (grammatical).[9] This readily allows grammatical constructionalization to encompass cases of grammaticalization that have various sources. These include the by-now standard examples of lexical to grammatical change such as motion *go* used in routines leading to the "chunking" or fixing of the auxiliary construction *BE going to,* or of *side* used in routines leading to the development of prepositions and connectives like *beside*(*s*) (Rissanen 2004). It also encompasses cases of grammaticalization with no or only marginal lexical sources, such as the development of topic-focus structures (Lehmann 2008), and syntacticization of word order (Meillet 1958 [1912]). This means that grammaticalization with disparate kinds of sources can be easily integrated under one type of change.

A third advantage is that changes can be analyzed in terms of not only simple but also complex outputs, and of not only item-specific micro-constructions but also abstract schematic constructions. Almost all work on grammaticalization has concerned the development of atomic (simple) or near-atomic expressions, e.g. the fixing and reduction of *BE going to* 'future' to *BE gonna* and of *be side* 'at the side' to the preposition *beside.* But constructions may be complex as well; an example is *if-then* conditionals. Furthermore, constructions are found on at least two levels: the micro-level of the individual construction, which has been

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9. See Joseph (2004, and elsewhere) on the importance of thinking of grammaticalization as result.

the focus of work on grammaticalization, and also the schematic level of abstract slots including argument structure, e.g. Ditransitive. There are also constructions that are partially schematic, consisting of both substantive material and abstract slots, e.g. *go V-ing*. Grammatical constructionalization encompasses several kinds of changes that, until recently, were not usually included in grammaticalization. An example is the series of changes in fully schematic constructions like the Transitive construction in English, owing to the loss of impersonals such as Old English *þyrstan* 'to thirst.' This was used until Middle English in expressions which translate literally as 'me thirsts,' but was lost as the subject became syntacticized (Trousdale 2008a; Gisborne 2011). Another example is the development of partially schematic constructions in which abstract slots and specific microconstructions are combined, such as the *way*-construction, as in *I wormed my way across the branch* (Mondorf 2011).

One of the most important advantages is that the constructional approach presented here provides a positive answer to the first question raised in the introduction, as to whether the two major current views of grammaticalization are reconcilable. The older, "traditional," approach is concerned primarily with how form changes, while the more recent approach focuses primarily on how meaning and function change (see Traugott 2010, for an overview). In work on grammaticalization that focuses on change in form, grammaticalization is construed as involving increase in dependency and reduction of various aspects of the original expression (see e.g. Lehmann 1995; Haspelmath 2004). For example, Lehmann (2004, p. 155) says "[g]rammaticalization of a linguistic sign is a process in which it loses in autonomy by becoming more subject to constraints of the linguistic system." Many of the changes discussed in this tradition are at least in part morphological, like the much-cited case of Latin *cantare habeo* 'sing:INF have:1sg' > French *chanterai* 'sing:FUT:1sg' (Fleischman 1982, p. 71). I call this the tradition of "grammaticalization as increased reduction and dependency." In the other tradition, grammaticalization is "[t]he process by which grammar is created" (Croft 2006, p. 366) and includes expansion of semantic-pragmatic, syntactic, and collocational range (Himmelmann 2004). Many of the changes discussed in this tradition are syntax- and discourse-related, as well as morphological. They include the development of contrastive focus-marking, as in the case of IT-clefts like *It was Kím who left* (Patten 2012), pseudo-clefts like *What/All I said was X* (Traugott 2008b), and pragmatic markers, such as *say* (imperative of main verb *say*) > 'for example, suppose' (Brinton 2008, p. 89). I call this the tradition of "grammaticalization as extension."

The differences in approach depend in part on what the researcher's view of "grammar" is. For example, restrictive accounts of grammar typically do not include pragmatic markers. Prior to work on comparative syntax initiated by Rizzi (1997),

they usually did not include information structure either. Kaltenböck, Heine, and Kuteva (2011) have recently proposed a model with two coexistent domains, one the more or less traditional canonical grammar that they call "sentence grammar," the other the domain of various types of information packaging, text organizing, and speaker evaluation that they call "thetical grammar." Sentence grammar is syntactically rigid and propositional; it encompasses traditional grammaticalization as reduction and increased dependency. Thetical grammar is syntactically mobile, speech act based, and highly pragmatic; it encompasses discourse markers like *say*, parenthetical comments like *I think,* and several other changes that involve grammaticalization as expansion.

Since construction grammar is holistic and all-inclusive, no separate syntax and semantics are postulated, and pragmatic markers are included within grammar. A non-restrictive and expansionist view of grammaticalization is therefore consistent with a constructionalist approach to change, although the phenomena of reduction and increased dependency must also be accounted for. I suggest that with grammatical constructionalization there is increase in schematicity (abstractness) and productivity (development of new type-constructions and expansion of host-classes). However, due to routinization of use and the resulting bleaching of content meaning, compositionality is reduced (Trousdale 2008a, 2010). These types of change are, as will be shown with the examples of *BE going to*, often intertwined.

Investigating the expansion and reduction approaches to grammaticalization from the point of view of usage, it becomes readily apparent that expansion follows from most of Lehmann's (1995) "parameters." His Integrity parameter pertains to two kinds of what he calls "weak grammaticalization":[10] a bundle of semantic features, and polysyllabic phonological segments. According to Lehmann, the process of attrition leads to fewer semantic features (bleaching) and fewer segments, or monosegmental form ("strong grammaticalization") (ibid., p. 126–132). Lehmann's characterization here is clearly couched in terms of meaning and form. An expression that is bleached is generalized (Bybee, Perkins, and Pagliuca 1994), and used more frequently (Bybee 2010). For example, a "bleached" future such as *BE going to* may be used in a paradigm and restricted to a fixed slot (Lehmann's parameters of Paradigmaticity and Syntactic Variability) but it is no longer constrained collocationally to verbs denoting actions in the way that motion with a purpose is. Sometimes the original contentful/lexical value may be totally lost over

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10. Although Lehmann refers to "grammaticalization," the parameter does not identify change, but rather grammaticality, and therefore it would be better called "weak grammaticality."

time (e.g. *a lot of* as a quantifier has lost the meaning 'share, unit' that it has in the original pseudo-partitive construction and when used in sales contexts (e.g. *lot* as 'parcel of land') or to mean 'fate'). Loss may also be partial (e.g. quantitative *a bit of* retains the meaning 'small,' but not 'bite'). Crucially, however, bleaching of lexical meaning is normally associated with increase in grammatical meaning (Sweetser 1988). Brems (2011, p. 85) aptly calls this a "loss-and-gain" model of change. The pragmatic implicatures that enabled the grammaticalization have become part of the new semantics, which is now more abstract and procedural rather than lexical. *BE going to* as an auxiliary no longer refers to motion with a purpose but now means 'future,' *a lot of* as a quantifier no longer refers to 'a share/unit of' but now means 'much/many.' In both cases, generalization of meaning results in wider use (see Hilpert 2008, for "collostructional analysis" identifying the development of significant collocates over time).

This discussion has focused on Q1: whether it is possible to reconcile the two current main views of grammaticalization, one of grammaticalization as reduction and increased dependency, the other of grammaticalization as expansion. The answer is positive because reduction and expansion may be intertwined. For example, loss of concrete meaning may result in type-expansion, context expansion, and sometimes increase in token frequency, and frequent use may lead to morphophonological reduction.

4.   Exemplar-based change and the role of analogy

In this section, I turn to Q2 and Q3: whether there is "pure" grammaticalization without analogy, and what relative weight should be given to reanalysis and analogy. In his much-cited article of 1912, in which he introduced the term "grammaticalization," Meillet famously said that:

> While analogy can renew details of forms, but usually leaves the structure of the existing system intact, "grammaticalization" of certain words creates new forms, introduces categories that had no linguistic expression beforehand, transforms the system as a whole. (Meillet 1958 [1912], p. 133; translation in Traugott 2010, p. 283)

Although Meillet himself did not use the word, this statement has been interpreted over time to privilege the concept of "reanalysis" in grammaticalization. Reanalysis is a concept that came to be defined in the nineteen-seventies. A definition given by Langacker for reanalysis in morphosyntactic change has proved foundational: "change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation"

(Langacker 1977, p. 58), i.e. change in parsing. Harris and Campbell (1995, p. 50) interpret "structure" in Langacker's characterization as "underlying structure," and say this includes "at least (i) constituency, (ii) hierarchical structure, (iii) category labels, and (iv) grammatical relations." Lat. *cantare habeo* > Fr. *chanterai*, mentioned above, may serve as an example. Formulated this way, it represents stages far apart and therefore exhibits surface manifestation of the reanalyses, and illustrates constituency change (a phrase has become a word) and category change (the main verb of possession *habe-* has become part of a future affix). It also illustrates the creation of a new form that Meillet identified with grammaticalization (but not the introduction of a new category, since Future is part of the verbal paradigm in both Latin and Romance). Since Langacker (1977), the notion of reanalysis has been extended from morphosyntactic to semantic and phonological change (see e.g. Eckardt 2006; and Bermúdez-Otero 2006, respectively). The term is, however, notoriously problematic. If a child or second language learner has not yet learned a construction that he or she encounters and interprets it in a different way from the speaker, re-analysis has not occurred, only different analysis. Therefore I prefer to follow Andersen (2001, p. 231, fn. 3) and use the term "neoanalysis."

At the time when Meillet wrote about grammaticalization, the concept of analogy was not well understood. Since his time, the theory of analogy has been refined and the role of analogy in grammaticalization has long been recognized. However, it has been felt to be too unconstrained to be useful in a restrictive hypothesis about change (see e.g. Givón 1991). It has been only reluctantly accepted in some work on grammaticalization. For example, Haspelmath (1998) and Lehmann (2004) explicitly distinguish "pure grammaticalization without analogy" from grammaticalization with analogy. Examples of "pure" grammaticalization that Lehmann gives include (i) numeral 'one' > indefinite article, (ii) demonstrative > definite article in Germanic and Romance languages, (iii) spatial preposition > marker of the passive agent in Ancient Greek (Lehmann 2004, p. 161). However, in the case of Lat. *cantare habeo*, which is attested in various orders, most of them with *habe-* preceding the infinitive, e.g. *habeo cantare*, it is assumed that the word order with *habe-* following the infinitive must have been fixed prior to the development of the inflectional future. Lehmann acknowledges that it is likely that this fixing was due to analogy with the already extant inflectional future, e.g. *cantabo* 'I will sing.' He goes on to say that "analogically-oriented grammaticalization is still a kind of grammaticalization," but concludes that "the proprium ('specific nature'$_{ECT}$) of grammaticalization comes out only in pure grammaticalization" (2004, p. 162).

The role of analogy in grammaticalization has been reassessed, as attention has shifted from the trajectories of individual expressions such as *cantare habeo* > *chanterai*, and from abstract clines such as main verb > auxiliary > clitic > inflection to ways in which grammaticalizing items may become aligned within a category

or construction. The typological work of Heine and his colleagues, e.g. Heine & Kuteva (2002), has been especially important. In an influential book advocating the importance of analogy in change, Fischer (2007) draws on Anttila's (2003) "analogical grid" that has both paradigmatic (iconic) and syntagmatic (indexical) dimensions. Fischer focuses on on-line processing rather than structural properties of language use, and argues that analogy, not reanalysis, is the prime mechanism in grammaticalization (see also De Smet 2009).

I take the position that it is important to distinguish the process of analogical thinking from the mechanism of analogy, better called "analogization," to avoid the ambiguity between the enabling motivation and the mechanism of change (see further Traugott & Trousdale 2010). Analogical thinking matches aspects of meaning and form; it enables, but may or may not result in change. By contrast, analogization is a mechanism or operation of change bringing about alignments and matches of meaning and form, i.e. similarities, that did not exist before. Likewise it is important to distinguish the process of parsing, which may enable or "motivate" different analyses, from the mechanism of neoanalysis, which results in new structures, i.e. differences. The distinctions are summarized in Table 1:

Table 1. Motivation vs. mechanism

Change-enabling process	Mechanism
Analogical thinking	Analogization
Parsing	Neoanalysis

Much discussion of analogization is exemplar-based (e.g. Bybee 2006). An exemplar is an entrenched item stored in memory, typically a construction, to which another with partially similar properties is compared. If similar comparisons are made often enough by enough people, a pattern may be perceived that then becomes a model to which another item may be matched. For example, the NP of NP pattern illustrated by quantifier *a bit of X* may have served as a pattern for the use of pseudo-partitive *a shred of X* as a quantifier: both have binominal form, and both may be used to refer to small parts. The fact that *a bit of X* was polysemous between pseudo-partitive and quantifier uses, may have enabled language users not only to conceptualize a match (analogical thinking) but also to use *a shred of X* in environments in which it functions as a quantifier (analogization). A constructional perspective on change strongly supports the idea that pattern matching is an important factor in change, because construction grammar highlights sets and the membership of sets. There are, however, debates about how strictly patterns should match.

In discussing Ditransitives, Goldberg is interested not only in constructions that involve intentional transfer (e.g. *give, pass*), but also in the many other types of

patterns that have similar form-meaning pairings, such as creation and intended transfer (e.g. *bake, build*), and communication (e.g. *ask, quote*), and the fine-grained differences among them. From a historical perspective, it is natural to ask how such sets came into being (see Sowka-Pietraszewska 2012, on growth of Ditransitives and prepositional alternatives) or were lost (see Colleman & De Clerck 2011, on loss of subtypes of Ditransitive in English; also Barðdal, Kristoffersen, & Sveen 2011, on loss of subtypes of Ditransitive in West Scandinavian). Analogical thinking and analogization are essential for answering this question.

Analogization involves the assignment of a new meaning or form (a constructional change) and therefore neoanalysis. As Kiparsky (2012, p. 22) says (though from the very different perspective of an Optimality Theoretic model of grammar), analogy (analogization) and grammaticalization are both "trivially" reanalysis (neoanalysis). Since neoanalysis is involved in all change, including but not limited to analogization, I consider neoanalysis to be the more important mechanism of change, in contrast to Fischer (2007).

In conclusion, the answer to Q2 – whether there is "pure" grammaticalization without analogy – is negative. And the answer to Q3 about the relative weight that should be given to reanalysis and analogy is that reanalysis/neoanalysis should be given greater weight than analogization because it is the more inclusive change-type.

5. *BE going to* revisited

To give a fuller sense of how the constructional approach I have introduced works, I propose a somewhat novel analysis of the well-known development of the *BE going to* 'future.'

It is generally agreed that the first attested examples of a possible context for a future interpretation are passive complements in a Purpose construction. Example (3) is the first example known to me of an expression that is possibly pragmatically ambiguous between motion-with-a-purpose and temporality, specifically later time, what Garrett (2012, p. 68) calls the "prospective future." This is relative, not deictic, tense and can best be paraphrased as 'be about to':

(3) ther   passed a theef byfore alexandre that ***was***
     there passed a thief before Alexander who was

   goyng to be hanged whiche saide …
   going to be hanged who   said

   'a thief who was going to be hanged passed before Alexander and said'
   (1477 Mubashshir ibn Fatik, Abu al-Wafa', 11th C; *Dictes or sayengis of the philosophhres* [LION: Early English Books Online; Traugott 2012, p. 234])

Examples like (3) are likely to have been intended and understood by most readers and hearers as involving motion with a purpose since motion in space appears elsewhere in the clause (*passed byfore*). However, knowing the future history of *BE going to*, it is plausible to conclude that at least some readers might have interpreted *was goyng to* in (3) as having more to do with later time than with motion because the passive in the complement demotes agency, and hence action and purpose on the part of the thief. This would be an example of innovation, the first step in change mentioned in Section 2: the hearer interprets a construct and analyzes it in a way that does not match the speaker's analysis.

Investigation of uses of *go* at the end of the fifteenth century suggests that change started in "critical contexts" (Diewald 2002), i.e. atypical uses both pragmatically and distributionally. Diewald (2002, p. 103) distinguishes "untypical" uses associated with pragmatic implicatures from "critical" ones associated with "multiple structural and semantic ambiguities." She regards untypical uses as prior to critical ones. For present purposes, the order of micro-changes prior to constructionalization is not important. Three properties of the examples were unusual at the time:

i. The "progressive" *BE–ing*. In Middle English this was rare and in fact not "a grammaticalised aspectual indicator in the verbal system till 1700" (Rissanen 1999, p. 216).

ii. Use in a Purpose construction with the non-finite verb immediately following *to*. If a purposive with *going to* occurs, a directional usually intervenes between *going* and purposive (*for*) *to*, as in (4).

> (4)   and now I ***am going*** to the Court to prefer my petition.
> 'and now I am going to the court to promote my petition'
> (1594 Anon., *A Knack to Know a Knave* [CED DICKNAVE])

iii. Passive in the Purpose clause as in (3).

While examples like (3) are innovations, by hypothesis the repeated use by different speakers of properties i. and ii. and often the third had the cumulative effect of routinizing the atypical uses and resulted in a set of constructional changes (the second and third steps in change, outlined in Section 2). Examples of *BE going to V* sequences through the first decades of the seventeenth century are rare (Mair 2004), suggesting that high token frequency is not a prerequisite for grammaticalization as Bybee (2003) has argued. They occur in contexts where motion is not only the reasonable reading, but is actually sometimes primed by mention of movement or location, e.g.:

> (5)   Than this sir Garses *went* to delyuer them and as he *wente* sir Olyuer
> Clesquyn mette him & demaunded wheder he *went* and *fro whens he came.*
> I *come* fro my lorde the duke of Aniou and ***am goynge to*** delyuer
> the hostages.

'Then this Sir Garses went to deliver them (the hostages), and as he went, Sir Oliver Clesquyn met him and demanded whither he went and from whence he came. "I come from my lord the Duke of Anjou and am going to deliver the hostages."' (1525 Froissart, 3rd and 4th *Book of Cronycles of Englande* [LION: Early English Books Online; Traugott 2012, p. 235])

Example (5) serves as a reminder that the larger context of prior discourse is crucial for understanding the construct. If only *I … am goynge to delyuer the hostages* were cited, (5) would appear to be a plausible example of *BE going to* used as a prospective future, whereas if the prior context is included, it is unlikely to be understood this way due to the priming of motion.

The example below in (6) is among the earliest attested likely examples of *BE going to* used as a prospective future rather than motion with a purpose. As Garrett (2012, p. 68) says, 'he' in (6a) is unlikely to be going anywhere to make a noose with his garters with the intention of hanging the narrator, he just needs to bend down. Likewise in (6b), although the schoolboy could conceivably go somewhere to be whipped, this does not appear to be the point of the passage:

(6) a. So, for want of a Cord, hee tooke his owne garters off; and as he **was going to** make a nooze, I watch'd my time and ranne away.
'So for lack of a cord, he took his own garters off; and as he was going to make a noose, I took the opportunity and ran away' (1611 Tourneur, *The Atheist's Tragedie* [LION: Early English Books Online; Garrett 2012: 69])

b. He is fumbling with his purse-strings, as a school-boy with his points[11] when he **is going to** be whipped, till the master weary with long stay forgives him. (1628 Earle, *Microcosmography* §19 [Garrett 2012, p. 69])

Evidence that in the early seventeenth century *BE going to* means 'be about to' rather than deictic future 'will' comes from the fact that writers of the time paraphrased it as a prospective. Famously, a grammarian called Poole said in his grammar: "About to, or *going to*, is the signe of the Participle of the future" (1646 Poole, *Accidence* 26 [Danchev & Kytö 1994, p. 67]). Slightly earlier evidence is also provided by an annotation of a passage from the Bible: *Esau said, Loe I am going to dye: and wherefore serveth this first-birthright unto me*? The annotation reads:

(7) [going to die] that is, ready or in danger to die: which may be meant, both in respect of his present hunger … and of his daily danger to be killed by the wild beasts … (1639 Ainsworth, *Annotations upon the five books of Moses*)[12]

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11. 'Points' here are 'cords for attaching hose to a doublet,' cf. modern 'suspenders.'

12. Thanks to Richard Futrell for this example, which appears at http://books.google.com/books?id=ki1BAAAAcAAJ; brackets original (accessed June 6th, 2011).

While Ainsworth's annotation may be meant to be theological rather than linguistic, it confirms that at least one person other than Poole was aware of the new meaning by the 1640s, and thought it was obscure enough to be worthy of mention.[13]

The development of *BE going to* with temporal semantics appears to have occurred in the early part of the seventeenth century, since examples like (6) are attested in a variety of texts and either cannot be or are unlikely to be interpreted as motion-with-a-purpose, but rather as relative, prospective future. The development involves a small-step meaning change, a shift from a pragmatic implicature to a semantic feature, a phenomenon that Kuteva (2001, p. 150) calls "context-absorption." Two questions arise from investigation of the data. One is when constructionalization occurred, and the other is what the source of the temporal meaning was. I consider these in turn.

From a grammaticalization perspective, it appears that *BE going to* grammaticalized at the beginning of the seventeenth century when examples like (6) begin to be attested. But (6) does not evidence syntactic change, and therefore from a constructional perspective it is not clear that constructionalization has taken place. After about 1630, most examples with temporal interpretations appear in texts with animate subjects, as in (6). Two examples have been found so far (both passive and both cited in Garrett 2012) with inanimate, therefore non-volitional, subjects, as in (8):

(8)   You hear that there is money yet left, and it ***is going to be*** layd out in Rattels … or some such like sale commodities. (1647 Field and Fletcher, *The Honest Man's Fortune* [LION; Garrett 2012, p. 70])

Two examples in the data do not, however, provide convincing evidence that conventionalization and change has taken place. At the beginning of the eighteenth century, however, several examples appear with inanimate subjects and with a wider range of syntax, demonstrating that *BE going to* is attested with inanimate subjects before the twentieth century (*contra* Kuteva 2001, p. 120), even if only relatively infrequently. Examples with inanimate subjects include complementations, as in (9a), and raising constructions, as in (9b):

(9)   a.   deposed … that he thought the whole Front of the House ***was going to*** fall. (1716 Trial of John Love et al. t17160906-2 [OBP])

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13.   An anonymous reviewer comments that the passage appears to be a literal translation from Greek or Hebrew, both of which "contain the 'go' verb plus a purposive complement." This makes Ainsworth's paraphrase 'ready or in danger to die' even more striking since it appears to ignore the motion verb in favor of the newer prospective future.

> b.   I am afraid *there **is going to*** be such a calm among us, that
>   (1725 Odingsells, *The Bath Unmask'd* [LION: English Prose Drama])

This suggests that constructionalization as the development of a form$_{new}$-meaning$_{new}$ change did not occur (at least in writing) until the beginning of the eighteenth century, although semantic constructional change had occurred a century earlier. It is at the beginning of the eighteenth century that *BE going to* begins to appear, however infrequently, with distributional properties associated with auxiliaries. Older auxiliaries such as *can, will, may*, etc. had all occurred in raising constructions far earlier, as (10) exemplifies:

(10)   But ***there can*** be nothyng more conuenient than by litle and litle to trayne
       and exercise them in spekyng of latyne.

       'But there can be nothing more appropriate than little by little training and
       exercising them in speaking Latin.' (1531 Elyot, *The Governor*
       [HC ceeduc1a])

It appears then that the semantic change attested in the early seventeenth century was a constructional change resulting in a semantics–syntax mismatch. Further semantic changes occurred, as *BE going to* came slowly to be associated with "pure prediction" (Kuteva 2001, p. 120; Nesselhauf 2012). Constructionalization, the emergence of a form$_{new}$-meaning$_{new}$ pairing resolving the mismatch, did, however, not occur until the early eighteenth century, though some isolated innovations such as (8) suggest that a few individual speakers may have construed *BE going to* as a marginal member of the auxiliary construction. In terms of surface form, extension to inanimate subjects in passives (which presuppose an agent) and then to inanimate subjects in active clauses and to raising constructions are micro-steps. So is the semantic change to prospective future. These micro-steps illustrate gradual expansion from one environment to another in minimally obtrusive ways (see De Smet 2012, p. 607).[14]

In the later history of the auxiliary *BE going to*, there is a further constructional change: phonological reduction in spoken usage to what is usually represented in writing as *BE gonna.* This is first attested in the twentieth century. *BE going to* increased rapidly in token frequency during the nineteenth century (Mair 2004), and is currently in competition mainly with *will*. Other competitors are the present progressive as in *I'm not doing that again*, *'ll, shall*, and *be to* (Nesselhauf 2012). Despite competition with *BE going to*, *will* appears to be maintaining and even

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14.   De Smet's focus is, however, on "actualization," (see also Andersen 2001), the process that bears out the consequences of a prior covert neoanalysis, which should in the present context be understood as constructionalization.

gaining ground, although this is not expected, given its monomorphemic structure and the fact that English is in general becoming more periphrastic (Leech et al. 2009, ch. 5).

Turning to the question about the source of temporal *BE going to*, I consider whether the source was itself a construction, as implied by its almost ubiquitous reference in the grammaticalization literature as *BE going to* 'motion with a purpose' (which is how I have referred to it above). Focusing on the importance of thinking of grammaticalization in terms of context and of strings larger than single lexical items, Bybee (2006, p. 719) refers to *BE going to* as "an example of a purpose construction" and hypothesizes that exemplars of this construction were grouped in a cognitive representation such as Figure 1.
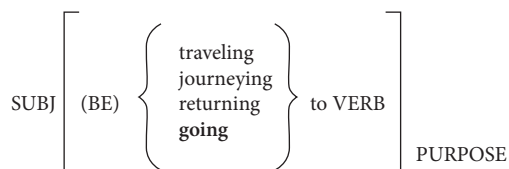

Figure 1. Hypothesized grouping of examplars in a cognitive representation (Bybee 2006: 720)

She goes on to say that as the sequence with the lexical verb *go* occurred more frequently than with the other lexical verbs (*travel, journey, return*), the *go* variant "gradually gained in strength" and "a new construction was created" (p. 720):

(11)   [SUBJECT + *be going* + *to* + VP]_{INTENTION, FUTURE}

The interpretation of the source in Figure 1 as a unified construction is problematic in light of the perspective on grammatical constructionalization proposed here. Figure 1 does not pick out the "critical" aspects of usage that enabled the development of (11). Nor does it explicitly pick out the relevant aspects of the Purpose schema. This schema ('act in order to Y') allowed a large number of verbs in the main clause, including actions, often transitive, that can be done with intention (e.g. *churn*) and cognitive verbs representing that intention (e.g. *thenk* 'intend'). Only that subset is relevant for the development of the *BE going to* auxiliary in which the verb in the main clause is intransitive and in which the unexpressed subject of the complement clause is coreferential with that of the main clause. The verbs Bybee cites in Figure 1 do not constitute a subschema of the Purpose construction, but of course there were purposive constructs with *BE going*. Furthermore, the verbs other than *go* are borrowings with highly specific semantics: *travel* is 'go with difficulty' (see French *travail* 'work'), *journey* is 'travel for a day' (see French *jour* 'day'), and *return* is 'go back' (see French *retour* 'turning back'), therefore none of them is a likely candidate for an auxiliary.

I propose that the auxiliary *BE going to* did not originate in a construction of the sort proposed in Figure 1. Rather, it originated in the use of the contentful micro-construction *go* unifying with a particular set of constructions, specifically: Purpose$_{CorefSubj}$, Preprogressive (*BE-ing*), a Purpose clause in which the verb immediately follows *to*, and, optionally, Passive in the Purpose complement (a proposal foreshadowed in Bybee, Perkins, and Pagliuca 1994, p. 268–270). In this constellation of constructions, Purpose entails intention of activity at a later time (relative, not deictic future), Preprogressive signals ongoing activity, and Passive demotes the agent of motion, as can be seen in (3) above.

(3) is a construct that includes *go* in the main clause of a Purpose construction together with Preprogressive *BE–ing* which signals ongoing, durative activity. The purposive *to* immediately precedes the verb in the complement, which is unified with Passive and therefore the agency of the subject is demoted. This is sketched in a skeletal way in Figure 2. The continuous vertical lines show links resulting from unification of the constructions, and the dotted lines show possible inferential links.
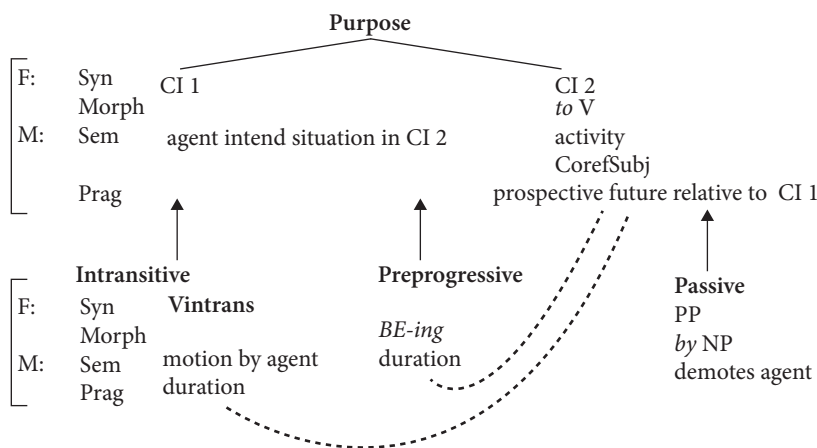

Figure 2. Hypothesized key preconstructionalization links for *go* when unified with the Purpose construction (late 16th century)
Note. Cl is short for clause, CorefSubj for coreferential subject, Morph for morphology, NP for noun phrase, PP for prepositional phrase, Prag for pragmatics, Sem for semantics, Syn for syntax, V for verb, Vintrans for intransitive verb.

By hypothesis, repeated use of *go* in this constellation led in the early seventeenth century to semantic expansion: coding of the pragmatics of intention to act at a later time and use in contexts where motion was unlikely or unnecessary (host-class expansion). This semantic change resulted in the mismatch exemplified by

examples in (6) (prospective future is associated with clause 1 and by implication the whole sentence, rather than with clause 2 only). The mismatch, in turn, no doubt enabled language-users to routinize and chunk the sequence *BE going to* as a single unit; such chunking invited deictic interpretations, since monoclausal interpretations ground future in the speaker. This eventually resulted in dissociation from the biclausal Purpose structure and constructionalization as an auxiliary in the early eighteenth century:

(12)   [[BE going to]$_{AUX}$] ↔ [Future]]

In (12) the double-headed arrow ↔ represents the link between form and meaning.

While the constellation of constructions mentioned above was presumably the main factor that enabled the emergence of temporal *BE going to*, there were doubtless also indirect contexts. At the end of the sixteenth century, before the semantic constructional change, one was probably, as Garrett suggests (p. 67), the use of *going to V* as a participial adjunct, as in:

(13)   saying: this is the most pleasing bargaine that euer I made; and *going to* embrace Robin, Robin tooke him vp in his armes (c.1628 *Robin Goodfellow* [LION: Early English Books Online])

This favored temporal interpretations. Another factor in the seventeenth century after this constructional change, was no doubt the extant Modal auxiliary construction, which already had several members, some of which represented or implicated future (notably *will* and *shall* in some of their uses). The modal auxiliaries were organized in two subschemas, the more frequent "core" modals with monomorphemic form (*will, shall, must*), and a periphrastic set (*be to, have to, ought to*) which had the semantics of present obligation for an anticipated (prospective) future. None of these were exact analogues that served as exemplars. The core modals do not match in form since they are not phrasal; nor do they match in meaning as they are deictic rather than relative and prospective. However, the deictic interpretation of the originally relative prospective future may have been strengthened by analogical thinking that partially matched the relative future of *BE going to* with the monomorphemic deictic future of *will* and *shall*. While the periphrastic modals are more similar in form as they are phrasal, none has *-ing*, and the meaning match is only partial since obligation is the salient concept, as in (14):

(14)   a.   And here it *is to be* noted, that …
            (1531 Elyot, *The Governor* [HC ceeduc1a])

       b.   By thys tale ye may se that one *ought to* take hede how …
            'By this tale you may see that one ought to take note how …'
            (1526 *Hundred Merry Tales* [HC cefict1a])

The proposal presented here acknowledges that some analogical thinking may have partially motivated the development of *BE going to* and that ongoing changes to more periphrastic syntax in the larger linguistic system are likely to have been relevant, as argued by Fischer (2007, 2010). However, it seems unlikely that in this case analogy "was both a **mechanism** and a **cause**" (Fischer 2010, p. 193, bolding original) because the patterns and meaning are too disparate for the mechanism of analogization to be likely to have been a determinant of this change.

6.   Conclusion

The framework of change outlined here subsumes most of what has been studied in the two current approaches to grammaticalization and extends beyond them. Roughly speaking, the following correlations can be noted.

First, grammatical constructionalization is approximately equivalent to what Heine (2002) calls the "switch context" and Diewald (2002) calls the "isolating context," e.g. the development of 'auxiliary' in a change sequence such as 'main verb > auxiliary > clitic > affix.'

Second, constructional changes prior to grammatical constructionalization (the accumulations of small steps summarized by '>' in e.g. 'main verb > auxiliary') are akin to Diewald's (2002) critical contexts; see also Smirnova, this volume on critical constructions, and Fried, this volume, on criteria for constructionalization. They are distributional and pragmatic routines and preferences that develop micro-step by micro-step. Constructional changes post grammatical constructionalization are akin to Heine's (2002) "conventionalization".[15] In many cases they involve grammaticalization as expansion, such as host-class, syntactic, and semantic-pragmatic expansion (Himmelmann 2004), i.e. increase in collocational range. Usually they also involve construction-internal reduction and loss due to routinization and token frequency of use (the grammaticalization as reduction and increased dependency characteristics found most especially in later stages of grammaticalization, e.g. the steps summarized in 'auxiliary > clitic > affix'). In addition, they include the possibility of obsolescence of a construction.

The key contribution of a constructional perspective to earlier work on grammaticalization is that the architecture of construction grammar demands thinking in terms of both form and meaning and of the links between them. As

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15.   Note this is a different meaning of 'conventionalization' than has been used in this chapter. I use the term to refer to the collective adoption of a new use by a group of speakers; Heine uses it to refer to pattern entrenchment.

a result, the other side of the equation that is always covertly present but usually backgrounded in research on grammaticalization as change in form or grammaticalization as change in meaning is brought to the fore. A view of grammar that privileges chunks, sets, and schemas with multiple features provides a framework for considering how analogical thinking and analogization play a role in morphosyntactic change. It also accounts for the fact that grammatical changes occur not only at the level of item-specific constructions but also at the more abstract, aggregated level of schemas like Ditransitive, or the *way*-construction. Therefore grammatical constructionalization includes morphosyntactic changes that are more far-reaching than have been considered to date in most work on grammaticalization.

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