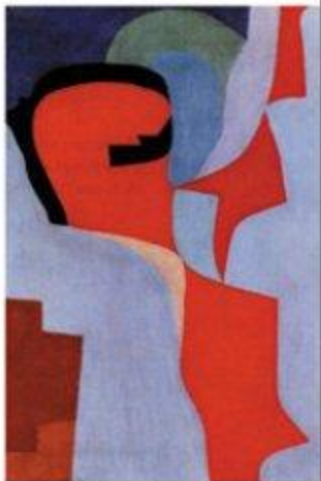


The Handbook of
**Historical
Linguistics**



Edited by

**Brian D. Joseph
and Richard D. Janda**



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*Brian D. Joseph and
Richard D. Janda*



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18 Grammaticalization

BERND HEINE

Grammaticalization theory is neither a theory of language nor of language change; its goal is to describe grammaticalization,¹ that is, the way grammatical forms arise and develop through space and time, and to explain why they are structured the way they are (see section 2). Grammaticalization is defined as a process² which is hypothesized to be essentially unidirectional³ (see section 3).

Grammaticalization is frequently described as leading from lexical to grammatical (= functional) categories. This view takes care of quite a number of linguistic phenomena, but it does not account for much of what happens in the development of grammatical categories. It suffers in particular from two main shortcomings. First, the process is not confined to the development of lexical forms; rather, grammatical forms themselves can, and frequently do, give rise to even more grammatical forms. Second, since linguistic items require specific contexts and constructions to undergo grammaticalization, grammaticalization theory is also concerned with the pragmatic and morphosyntactic environment in which this process occurs. While grammaticalization has both a synchronic and a diachronic dimension, its foundation is diachronic in nature. In the following we will distinguish between grammaticalization, which relates to specific linguistic phenomena, grammaticalization studies, which deal with the analysis of these phenomena, and grammaticalization theory, which proposes a descriptive and explanatory account of these phenomena (see section 2).

1 Earlier Work

In the history of grammaticalization studies, three main phases can be distinguished. The first phase is associated with the work of eighteenth-century French and British philosophers. Étienne Bonnot de Condillac claims that

grammatical complexity and abstract vocabulary derive historically from concrete lexemes. Condillac (1746) argued that tense suffixes and other verbal inflections can be traced back to independent words: the latter coalesce to give rise to verbal tense and aspect forms. Some notions of modern grammaticalization theory are also contained in the work of John Horne Tooke (1857). In his work, first published in 1786 and 1805, he argues that language in its "original stage" is concrete, and abstract phenomena are derived from concrete ones. Horne Tooke proposed "abbreviation" and "mutilation" as key notions: nouns and verbs are called "necessary words" while other word classes, like adverbs, prepositions, and conjunctions, are derived from "necessary words" via abbreviation and mutilation.

The second phase is associated mainly with German nineteenth-century linguists. The first main representative was Franz Bopp (1816, 1833), who considered the change from lexical to grammatical forms to be an essential component of his principles of comparative grammar. While various examples discussed by Bopp, in the same way as those proposed by his predecessors, are etymologically of doubtful value, a number of insights emerged in the course of his work. Bopp was but the first in a long series of nineteenth-century linguists for whom grammaticalization became a key notion (although the term was introduced only much later; see below), other authors being August Wilhelm von Schlegel (1818), Wilhelm von Humboldt (1825), Franz Wüllner (1831), William Dwight Whitney (1875), and, most of all, Georg von der Gabelentz (1901). After the turn of the century, grammaticalization studies declined.

No major developments took place in the course of the twentieth century prior to 1970. The few authors who made use of findings on grammaticalization, like Meillet (1912), who introduced the term (French: *grammaticalisation*), or Kuryłowicz (1965), were Indo-Europeanists who used findings on grammaticalization as part of their methodology in historical linguistics but did not contribute much beyond what had been known already by the end of the nineteenth century.

The third phase of grammaticalization studies started in the 1970s and was initially connected with the paradigm of localism (Anderson 1971, 1973). According to this school, spatial expressions are more basic than other kinds of linguistic expressions and the former therefore serve as structural templates for the latter. More importantly, however, developments in the early 1970s were connected with the work of Talmy Givón, who argued that in order to understand language structure one must have a knowledge of its earlier stages of development. With his slogan "Today's morphology is yesterday's syntax,"⁴ which he considered to be part of a more general cyclic evolution (see section 7), as sketched in (1), he opened a new perspective for understanding grammar (Givón 1971: 12, 1979):

- (1) Discourse > Syntax > Morphology > Morphophonemics > Zero

In the course of the 1970s and 1980s a number of studies appeared, many of them concerned with problems of morphosyntactic change (see, e.g., the contributions in Li 1977), which were based on assumptions such as the following:

- i Language is a historical product and should therefore be accounted for first of all with reference to the historical forces that are responsible for its present structure.
- ii Accordingly, findings on grammaticalization offer more comprehensive explanations than findings confined to synchronic analysis could offer.
- iii As had already been claimed since Condillac's time, the development of grammatical categories is unidirectional, leading from concrete/lexical to abstract/grammatical meanings. (Traugott 1980; Heine and Reh 1982, 1984; Lehmann 1982; Bybee 1985)

While virtually all of the various authors adhering to that paradigm subscribe to the same general approach, according to which grammaticalization is defined as the development from lexical to grammatical and from grammatical to even more grammatical structures, a wide range of different opinions and theoretical orientations arose. In some of the works (e.g., Traugott 1980), the main contribution of this field consists in offering new ways of reconstructing semantic change. In other works, grammaticalization theory is viewed as a means of describing and explaining the structure of grammatical categories across languages (Bybee 1985; Bybee et al. 1991, 1994). Others again propose to treat grammaticalization as being synonymous, or nearly synonymous, with grammar: for Hopper (1987), in particular, grammaticalization, or emergent grammar, has to do with the recurrent strategies used for building discourses and involves a continual movement toward structure. Finally, there are those who argue that grammar is the result of an interplay between conceptualization and communication, and that grammaticalization theory provides a tool for reconstructing some of the extralinguistic foundations of grammar (Heine et al. 1991; Heine 1997b).

The diversity of views that have been voiced on grammaticalization is also reflected in the terminology employed: rather than "grammaticalization," some authors prefer to call it "grammaticization," or "grammatization." Furthermore, there are also major differences as to what subject matters should be subsumed under the term. For some, the term "grammaticalization" is merely an equivalent to "grammatical form"; such authors may say, for example, that language X has grammaticalized a dative case, which is roughly equivalent to saying that in X there exists a grammatical form for this case function.

A wealth of books and articles is now available, either as monographic treatments (Traugott and Heine 1991a, 1991b; Heine et al. 1991; Hopper and Traugott 1993; Pagliuca 1994; Ramat and Hopper 1998), or as applications of findings on grammaticalization to one particular language (e.g., Kilian-Hatz 1995 on Baka; Sun 1996 on Chinese; Diewald 1997 on German).

Furthermore, a number of works are devoted to the grammaticalization of specific parts of grammar, such as tense and aspect (Dahl 1985; Brinton 1988; Bybee and Dahl 1989; Fleischman 1982; Bybee et al. 1994; Kuteva 1998), modality (Traugott 1989; Bybee and Fleischman 1995), evidentials (Willett 1988), auxiliaries (Heine 1993; Kuteva 2001), copulas (Devitt 1990, 1994), serial verbs (Givón 1975; Lord 1993), demonstratives (Diessel 1999), definite articles (Greenberg 1978; Himmelmann 1997), indefinite articles (Givón 1981; Heine 1997b: 66–82), indefinite pronouns (Haspelmath 1997a), anaphora (Givón 1976; Frajzyngier 1987), reflexives (Kemmer 1993; König and Siemund 2000; Schladt 2000; Heine 2000), passives (Haspelmath 1990), temporal adverbs (Haspelmath 1997b), infinitives (Haspelmath 1990), quotatives (Ebert 1991; Saxena 1988, 1995; Güldemann 2001), clause subordinators (Genetti 1986, 1991; Traugott 1985, 1986; König 1985, 1988; Hopper and Traugott 1993: 176ff), complementizers (Ransom 1988), relative clauses (Lehmann 1984), numerals (Heine 1997b: 18–34), comparatives (Heine 1994, 1997b: 109–30), spatial orientation (Svorou 1994; Heine 1997b: 35–65), or possession (Heine 1997a).

More recent work shows that grammaticalization studies are equally relevant to understanding language change in situations of extreme language contact and unusual language transmission. There is now a wealth of studies on grammaticalization in pidgins and creoles (see, e.g., Sankoff and Brown 1976; Arends 1986; Plag 1992, 1993, forthcoming; Baker and Syea 1996; Bruyn 1995, 1996; Huber 1996; Mufwene 1996; Poplack and Tagliamonte 1996; Romaine 1995, 1999), and these studies suggest that (with few exceptions; cf. Bruyn 1996; Plag forthcoming), grammatical categories in these languages evolve along the same lines as in languages with “natural” language transmission.

2 The Framework

As observed earlier, grammaticalization theory is a theory to the extent that it offers an explanatory account of how and why grammatical categories arise and develop. It is based on the following assumption: the main motivation underlying grammaticalization is to communicate successfully. To this end, one salient human strategy consists in using linguistic forms for meanings that are concrete, easily accessible, and/or clearly delineated to also express less concrete, less easily accessible, and less clearly delineated meaning contents. To this end, lexical or less grammaticalized linguistic expressions are pressed into service for the expression of more grammaticalized functions.⁵ Accordingly, grammaticalization is a process whereby expressions for concrete (= source) meanings are used in specific contexts for encoding grammatical (= target) meanings. This process has a number of implications for the structure of the expressions concerned.

Technically, the grammaticalization of linguistic expressions involves four interrelated mechanisms:⁶

- i desemanticization (or “bleaching,” semantic reduction): loss in meaning content;
- ii extension (or context generalization): use in new contexts;
- iii decategorialization: loss in morphosyntactic properties characteristic of the source forms, including the loss of independent word status (cliticization, affixation);
- iv erosion (or “phonetic reduction”), that is, loss in phonetic substance.

Each of these mechanisms is concerned with a different aspect of language structure or language use: (i) relates to semantics, (ii) to pragmatics, (iii) to morphosyntax, and (iv) to phonetics. While three of these mechanisms involve a loss in properties, there are also gains: in the same way as linguistic items undergoing grammaticalization lose in semantic, morphosyntactic, and phonetic substance, they also gain in properties characteristic of their uses in new contexts (cf. (ii)), sometimes to the extent that their meaning may show little resemblance to the original meaning. None of the mechanisms is confined to grammaticalization (see Newmeyer 1998; Campbell 2001a); but to the extent that jointly they are responsible for grammaticalization taking place, they can be said to constitute different components of one and the same general process.

Each of these mechanisms gives rise to an evolution which can be described in the form of a three-stage model, called the overlap model (Heine 1993: 48–53). The stages concerned are as follows:

- i There is a linguistic expression A that is recruited for grammaticalization.
- ii This expression acquires a second use pattern, B, with the effect that there is ambiguity between A and B.
- iii Finally, A is lost, that is, there is now only B.

The result of this process is that grammaticalization exhibits a chain-like structure (see section 5). Note that not all instances of grammaticalization in fact proceed to stage (iii); it may happen that the process is arrested at stage (ii); however, once stage (iii) is reached, B tends to be conventionalized, that is, it turns into a new grammatical category.

Desemanticization results from the use of forms for concrete meanings which are reinterpreted in specific contexts as more abstract grammatical meanings (see section 5 for a more detailed discussion). While this term is commonly understood to refer to the loss of lexical content, an equally common type of desemanticization concerns cases where a grammatical form having two (or more) grammatical functions loses one (or all) of these functions. For example, the Old Swedish nominal inflections were typically portmanteau (cumulative) morphemes simultaneously expressing gender, number, and case. Desemanticization in this case had the effect that one of the three functions, namely case, was lost in the development to modern Swedish (Norde 2001: 243).

The term “extension” is adopted from Harris and Campbell (1995; see also Campbell 2001a: 142–3).⁷ While these authors emphasize the syntactic

manifestations of this mechanism, we are confined here to one of its pragmatic manifestations: we will assume that extension obtains when a linguistic item can be used in new contexts where it could not be used previously.⁸

Once a form has acquired a new grammatical meaning, it tends to become increasingly divergent: it loses in categorial properties characteristic of its source uses, hence it undergoes decategorialization, and it tends to be used more frequently and in more contexts, to become more predictable in its text occurrence and, consequently, it tends to lose in phonetic substance, hence to undergo erosion. Thus, to the extent that extension, decategorialization, and erosion are components of a grammaticalization process, they presuppose desemanticization⁹ (cf. Haspelmath 1999: 1062). In the early stages of grammaticalization there may be a shift from less to more grammatical meaning although there are as yet no noticeable pragmatic, morphosyntactic, or phonetic changes associated with that shift (for examples, see below).

The following example from Swahili illustrates the effect of these mechanisms. Like many other languages (see Bybee et al. 1991), Swahili has grammaticalized a verb of volition to a future tense marker. Example (2a) illustrates the lexical use of the verb *-taka* 'want,' while (2b) illustrates its use as a future tense marker in relative clauses. In main clauses, the future marker was reduced to *-ta-*, cf. (2c). Desemanticization had the effect that the lexical meaning of the verb was "bleached out." Originally a lexical verb requiring typically human subject referents, its use was extended to contexts involving inanimate subjects (extension). In accordance with its use as a tense marker, *-taka* underwent decategorialization: it lost its status as an independent word and most other verbal properties and became a prefix of the main verb. Finally, *-taka* underwent erosion, being phonologically reduced to *-ta-* in main clauses (but retaining its original full form in relative clauses; see above):

(2) Swahili (Bantu, Niger-Congo):

- a. a- taka ku- ja
C1:PRES¹⁰- want INF- come
"He wants to come"
- b. a- taka- ye ku- ja
C1- FUT- C1:REL infinitive- come
"he who will come"
- c. a- ta- ku- ja
C1- FUT- INF- come
"He will come"

As noted above, there are gains deriving from the use of an item in new contexts that can offset losses of properties it may undergo. Moreover, grammaticalization requires specific contexts to take place and it therefore has been described as a product of pragmatic inferencing, pragmatic enrichment, strengthening, or conversational implicatures (Hopper and Traugott 1993: 163–77), or, as we will say, context-induced reinterpretation (see section 5).

As we will see below (sections 5 and 6), the framework described here has a number of implications for the development and structure of grammatical categories, and a number of models and descriptive devices have been proposed to deal with these implications.

3 Problems

Work on grammaticalization has been the subject of a number of critical discussions. Some authors expressed dissatisfaction with the classical definition proposed by Kuryłowicz (1965), proposing a more extensive use of the term. For example, Traugott (this volume) proposes to define grammaticalization “as the development of constructions [...] via discourse practices into more grammatical material.” As we observed in the introduction to this chapter, the development of grammatical items is shaped by the constructions in which these items occur; nevertheless, many grammaticalization processes that have been identified so far have been described largely without reference to constructions. Conversely there are no convincing examples so far to suggest that instances of grammaticalization processes can be identified exclusively in terms of constructions without referring to the form-meaning items involved in the process.

While there is now a wealth of publications on grammaticalization, extending from articles to books and contributions to handbooks on language structure and language change, in more recent years there has been massive criticism of grammaticalization theory (see especially Newmeyer 1998; Campbell 2001a; Campbell and Janda 2001; Janda 2001; Norde 2001). In this work, a number of weaknesses and inconsistencies found in previous analyses of grammaticalization are pointed out, and attention is drawn to areas of research that have been neglected or ignored in earlier work. In the present section, the main points of criticism are examined. It goes without saying that in a concise treatment like the present one it is not possible to do justice to all the problems that have been raised and all the views that have been expressed. We will therefore be confined to a few claims that challenge cornerstones of grammaticalization theory. Such claims are:

- i Not all instances of grammatical change are due to grammaticalization.
- ii Grammaticalization is not unidirectional.
- iii Grammaticalization is not a distinct process.
- iv “Grammaticalization theory” is not a theory.

With regard to (i), more recent research has demonstrated that grammatical change involves factors that are not covered by grammaticalization theory (see especially Newmeyer 1998; Campbell 2001a; Janda 2001; Joseph 2001a; Norde 2001), and future work will have to deal with these factors in more detail. Most of this research is concerned with the latest stages of grammaticalization,

typically (though not exclusively) with stages where grammatical forms have attained affixal status. What is required now is a comparative analysis to arrive at a more general understanding of the nature of these factors.

With regard to (ii), doubts have been raised as to whether grammaticalization truly is a unidirectional process, and a number of examples contradicting the unidirectionality hypothesis have been identified (see especially Joseph and Janda 1988; Campbell 1991, 2001a; Ramat 1992; Frajzyngier 1996; Janda 2001; Joseph 2001a; Norde 2001; and most of all, Newmeyer 1998: 260ff). However, first, as acknowledged by most of these scholars,¹¹ such cases are few compared to the large number of examples that confirm the hypothesis (cf. Joseph and Janda 1988: 198–200; Harris and Campbell 1995: 338; Newmeyer 1998: 275–6, 278; Haspelmath 1999). More importantly, however, no instances of “complete reversals of grammaticalization” have been discovered so far (cf. Newmeyer 1998: 263; Norde 2001; Janda 2001: 294–5). For example, the Old English noun *lic* ‘body’ has been grammaticalized to a denominal adjective suffix *-ly* in Modern English (Joseph 2001: 164), but it is highly unlikely that *-ly* will ever return to its former use, regaining the semantic meaning ‘body,’ morphosyntactic properties of a noun (such as having argument status and taking modifiers and the plural inflection), and regaining the full phonetic substance it once had.

Second, most of the counterexamples that have been identified can be described as being “idiosyncratic”¹² in the sense that they do not allow for cross-linguistic generalizations on the directionality in the rise and development of grammatical categories. For example, it has been observed that a case inflection, such as a genitive case suffix, may assume clitic status. Such a development can be said to be idiosyncratic, both language internally and cross-linguistically: language internally because it involves isolated instances within a given language, that is, there appears to be no general pattern whereby whole paradigms of case affixes turn into clitics; and cross-linguistically in that there does not seem to be a general directionality to the effect that, for example, genitive case suffixes regularly become clitics in many different languages.

Third, exceptional cases can frequently be accounted for with reference to alternative communicative forces, relating to the social, psychological, and cultural conditions shaping language use. Hypercorrection appears to be such a force (cf. Janda 2001). Another not uncommon force can be seen in euphemistic language use. For example, one common way in which concrete/lexical meanings give rise to more abstract/grammatical categories involves the grammaticalization of terms for body parts to markers of spatial orientation, whereby, for instance, a body part noun ‘back’ is grammaticalized to a spatial marker ‘behind’ or ‘in back of’ (see section 8).¹³ There are, however, some body parts, mostly (but not exclusively) body parts referring to sexual organs, that tend to be avoided in many social contexts and instead be denoted by spatial concepts (e.g., ‘(the thing) in front’, ‘(the one) below’). In a number of languages this has led to a reversal of grammaticalization, in that a term for deictic spatial orientation came to be conventionalized to a body part term. A similar motivation but a different result appears to have induced the change

from the German modal auxiliary *müssen* 'to have to' a full verb ('answer a call of nature'; Janda 2001: 313). Another factor can be seen in the particular sociocultural setting in which grammaticalization occurs (see Burridge 1995 for an example of a modal auxiliary that is "upgraded" to a lexical verb in Pennsylvania German).

A different kind of force can be seen in what has been described as exaptation, whereby grammatical categories in their final stages may lose their functional distinctiveness but retain their morphological form and put it to new functional uses. One possible effect this may have is that inflectional affixes can be regrammaticalized to derivational elements (Lass 1990; Norde 2001: 244ff).

Fourth, a possible alternative factor can be seen in situations of extreme language contact. In some creoles, for example, locative adverbs of the lexifier language (e.g., English) have been reinterpreted as verbs of state (e.g., Sranan). Such a process would seem to be at variance with observations commonly made in grammaticalization studies according to which open-class items such as verbs may assume the function of closed-class items such as adverbs, while the opposite does not normally happen; conceivably, this change can be linked to the special circumstances surrounding the growth of creoles (see Plag 2002).

With regard to (iii) it has been argued that grammaticalization is not a distinct process since the main mechanisms characterizing it – that is, desemanticization, extension, decategorialization, and erosion (see section 2) – can be observed to be also at work in other kinds of linguistic change (Newmeyer 1998: 248ff; Campbell 2001a; Janda 2001). There are a couple of reasons why such a position does not seem to be justified. First, the main task of grammaticalization theory is to provide explanations of why grammatical forms arise and develop, and it is these four mechanisms that have been found to be material to achieving such explanations. Thus, irrespective of how one wishes to define a "distinct process," these mechanisms and the way they are interrelated are part of one and the same explanatory framework (see also section 4).

Second, grammaticalization, as conceived here, is above all a semantic process. Desemanticization results from the use of forms for concrete meanings that are reinterpreted in specific contexts as more abstract, grammatical meanings. Having acquired grammatical meanings, these forms tend to become increasingly divergent from their old uses: they are used in new contexts (extension); lose in categorial properties characteristic of their old uses, hence undergo decategorialization; and tend to be used more frequently, become more predictable in their occurrence, and, consequently, lose in phonetic substance. Thus, the four mechanisms are not independent of one another; rather, desemanticization precedes and is immediately responsible for decategorialization and erosion (see section 2). For example, in many languages, prepositions unambiguously serving a grammatical function still have morphosyntactic properties of their earlier uses as adverbial phrases (cf. English *in spite of*, *in front of*, *with respect to*, etc.), and tense or aspect auxiliaries may still behave morphosyntactically to some extent like lexical verbs although they have lost their lexical semantics and serve exclusively as functional categories (cf. English *be going to*, *used to*,

keep (doing), etc.). To conclude, there is evidence to suggest that grammaticalization can be defined as a distinct process, leading to the rise and development of new grammatical forms.

Finally, with regard to (iv), it has been observed that “grammaticalization theory” is not a theory (see especially Newmeyer 1998; Campbell 2001a). For most students of grammaticalization this question is not, and has never been, an issue, since their concern is simply with describing grammatical change and the implication it has for a better understanding of language use; whether their work deserves or needs to be elevated to the status of a theory is not considered by them to be of major moment. Nevertheless, as we argued in section 2, there is something that can be called a theory of grammaticalization.

4 The Greek *θα*-Future

That “there is no process of grammaticalization” has been argued for in particular by Brian Joseph (2001a: 178–83), using among others the history of the Greek *θα*-future as an example. It may therefore be of help to take this example as a test case for our claim that grammaticalization is a distinct process.¹⁴

In a highly simplified form, the grammaticalization process involved three main stages, illustrated in (3). The initial stage is characteristic of Classical and early post-Classical Greek, where the verb of volition *thélo*: ‘want’ occurred as a main (lexical) verb with an infinitival complement, cf. (3a). This structure continues in a modified form into present-day Greek; at the same time, however, it also developed into another structure, illustrated in (3b), whereby the volitional (lexical) main verb underwent “semantic shift” (i.e., desemanticization) to acquire “a more auxiliary-like and grammatical future meaning (Joseph 2001a: 180).¹⁵ After a series of developments, including regular sound change, “reanalysis,” and analogical generalization of sandhi variants, the Modern Greek future emerged, where the erstwhile volitional verb, conventionalized in its third person singular form *thélei*, survives as a verbal prefix *θα* (though written separately from the main verb), while the erstwhile infinitival complement acquires the role of the main verb, inflected for person, cf. (3c):

(3) Greek (Joseph 2001: 178–83, this volume):

- a. *thélo*: *gráphein*.
want: 1SG write:INF
“I want to write”
- b. *thélo*: *gráphein*.
1SG write:INF
“I will write”
- c. *θα* *yráfo*.
FUT write:1SG
“I’ll be writing”

It would seem that we are dealing with a process that is identical with the one sketched for Swahili in (2) with reference to the following characteristics:

- i There is a structure ['want' + complement] which consists of a volitional verb taking an infinitival complement.
- ii The volitional verb undergoes desemanticization, losing its lexical semantics and becoming a future marker.
- iii The volitional verb undergoes decategorialization: it loses its verbal properties, it is fixed positionally and can no longer be inverted, and it can no longer support clitics or affixes.
- iv Furthermore, the volitional verb loses its independent status and ends up as a verbal prefix.
- v The volitional verb undergoes erosion: originally a disyllabic verb, it turns into a monosyllabic grammatical marker and is "deaccented," that is, it loses the ability to receive stress.¹⁶

Greek and Swahili (or the English *will*-future, for that matter) are but a few out of a large number of cases where a volitional verb 'want' was grammaticalized to a future tense marker (for more examples, see Bybee et al. 1991). To conclude, the Greek *tha*-future is a canonical instance of a grammaticalization process. That we are dealing with a distinct process is suggested, for example, by the fact that desemanticization preceded and was responsible for extension, decategorialization, and erosion (see Joseph 2001a: 183, this volume).

It goes without saying that this account is confined to a general outline of the process, in that it ignores many of the idiosyncractic developments accompanying the rise of the Greek *tha*-future, meticulously described by Joseph (2001a); nevertheless, it would seem to provide answers to questions that cannot be answered satisfactorily in any other theoretical framework that we are aware of. The following questions are examples (cf. section 2): (i) Why did this process take place in the first place? (ii) Why did it involve the same lexical verb ('want') and the same structural characteristics as observed in Swahili and many other languages? (iii) Why did it necessarily lead from lexical verb to tense prefix; that is, why is it unlikely that the process could have proceeded in the opposite direction from verbal prefix to lexical verb?

The present example may also be of help in solving another problem that some critics have with grammaticalization theory, namely that this theory leads to "vicious circularity" in that "a reconstruction initially justified by invoking a certain principle (grammaticalization) cannot later be argued to provide independent confirmation for that same principle" (Janda 2001: 271; see also Newmeyer 1998). This argument is relevant in particular to languages where we do not have earlier written documents, that is, where the reconstruction of a process of grammaticalization has to rely exclusively on synchronic evidence. We will assume that Swahili belongs in this category (ignoring the fact that the language in fact has earlier documents, written in Arabic). On the basis of historical evidence it is possible to observe that the Greek *tha*-future and the

English *will*-future developed along the same general lines:¹⁷ (i) a volitional verb serving as the main verb was grammaticalized to a future tense marker, with the erstwhile verbal complement assuming the role of the main verb; (ii) this process led to decategorialization (loss of verbal status) and erosion (reduction of form, loss of stress/accent; cf. English: *will* > 'll).

That our reconstruction of the Swahili *-ta*-future is correct is also suggested by language-internal evidence. As we observed in our Swahili example in section 2, the future tense marker retained its full form *-taka-* in relative clauses. Not uncommonly, lexical properties are lost in main clauses but may survive in subordinate clauses. The English *will*-future has retained properties of the erstwhile lexical verb *will* in specific contexts involving subordinate clauses, cf. *Do as you will*, where *will* underwent neither desemanticization nor (optional) erosion. To conclude, without having any historical evidence, and without having to invoke any principle, it would seem justified to hypothesize that the same general process to be observed in Greek and English must have occurred in Swahili.

5 Conceptual Transfer versus Context-Induced Reinterpretation

The process whereby linguistic forms expressing concrete human experiences come to acquire less concrete, grammatical, functions has been described in a number of different ways. One line of research highlights the cognitive foundations of the process; it is based on what may be called the *transfer model*. Underlying the process, it is argued, there are patterns of conceptual transfer leading from concrete to less concrete domains of human experience. For example, as noted in section 3, the concrete body part 'back' has yielded more abstract locative adpositions and/or adverbials 'back, in back of' in many languages across the world, and verbs expressing physical motion ('go to,' 'come to') or volition ('want') have given rise to grammatical markers for future tense in languages that can be assumed to be neither genetically nor areally interrelated. Furthermore, concepts relating to the domain of space, such as demonstrative attributes, are commonly employed to express grammatical functions within the domain of text (see Frajzyngier 1991), for example, by turning into definite articles and relative clause markers. Such processes have been described as being metaphorical in nature, involving a transfer from concrete domains of human experience (physical objects and physical motion, respectively) to more abstract domains of spatial, temporal, textual, and other relations. According to Heine et al. (1991: 48ff), a prominent pattern of metaphorical transfer underlying many grammaticalization processes has the structure of an ontological domain shift as described in (4) (where domains to the left of the arrow are less abstract than domains to the right):

- (4) PERSON > OBJECT > ACTIVITY > SPACE > TIME > QUALITY

Such transfers can be, and have been, described as metaphorical processes, for the following reasons: first, they involve a transfer from one domain of human conceptualization to another, for example, from the domain of the human body to that of spatial relations, or from physical actions to that of temporal or aspectual concepts. Second, metaphor is based on predications that, if taken literally, are false. For example, a predication on physical motion that actually denotes future tense instead of physical motion can be said to be literally false (cf. *Peter is going to come soon*). These are not the only criteria that have been used to define grammaticalization as a metaphorical process (for additional parameters, see Claudi and Heine 1986; Heine et al. 1991; Sweetser 1990; Heine 1997b).

Another line of research emphasizes the pragmatic component of the process, whereby grammaticalization (i) requires appropriate contexts to take place, (ii) subsequently leads to an increase in contexts where the grammaticalized item is used and, consequently, (iii) leads to an increase in the frequency of use of that item (cf. Bybee, this volume). We will refer to approaches highlighting this component as using a *context model*. Key notions relating to this model are context-induced reinterpretation, pragmatic inferencing, invited inference, conversational implicature, metonymy, and the like (cf. Traugott and König 1991; see also Dahl 1985: 11). Describing the development from a motion verb 'go to' to a future tense marker as metaphorical, it is argued in this tradition, highlights epiphenomenal properties of the process; what characterizes this development is a gradual extension where each context constitutes a new locus of change. Accordingly, the development from lexical verb to tense marker, or from body part noun to locative adposition, involves thousands of different contexts and centuries to be conventionalized.

Both the transfer model and the context model capture significant properties of grammaticalization, and both are required to understand why grammatical categories arise. Consider the following example: the German item *während* 'during, while' is a temporal conjunction in (5a), while in (5b) it may be interpreted as either a temporal (i) or a concessive conjunction (ii). In (5c), a temporal interpretation can be ruled out, and *während* functions exclusively as a concessive subordinator:

(5) German:

- a. Während er vor dem Fernseher sitzt, trinkt er Kaffee
 while he in:front to:the TV:set sits drinks he coffee
 "While he is watching TV, he is drinking coffee"
- b. Während sie ihn um Hilfe bittet, bleibt er vor dem
 while she him for help asks remains he in:front to:the
 Fernseher sitzen
 TV:set sit
 - (i) "While she asks him for help, he remains seated in front of the TV set"
 - (ii) "Although she asks him for help, he remains seated in front of the TV set"

- c. Während sie gestern noch krank war, kann sie heute schon
 while she yesterday still sick was can she today already
 wieder lachen
 again laugh
 "Although yesterday she was still sick, today she can laugh already"

We are dealing here with a common grammaticalization process according to which temporal markers are grammaticalized to conditional, causal, adversative, or concessive conjunctions introducing adverbial clauses (for another example involving English *since*, see Hopper and Traugott 1993). By using a transfer model one might argue that this is an instance of a process whereby concepts of the domain of time (cf. (5a)) are transferred to another domain relating to "logical" relations between clausal propositions (cf. (5c)). Proponents of a context model, on the other hand, would claim that there is no leap from one domain to another, rather, there is a gradual transition from temporal to concessive uses of *während*, involving, and being triggered by, intermediate contexts such as the one exemplified in (5b), which allow for both a temporal and a concessive interpretation (= the overlap model; cf. section 2, see also example (6) below). On account of such observations, Heine et al. (1991: 113) propose what they call the metonymic-metaphorical model of grammaticalization, which treats both the transfer and the context models as integral parts of the one and the same overall device.

6 Structural Properties

The framework described in section 2, especially the four mechanisms distinguished there, have a number of implications for the linguistic structures arising from grammaticalization. For example, Lehmann (1985) proposes the following concomitants of the process (with the exception of (iii), which concerns erosion, all these factors are effects of decategorialization):

- i paradigmization, that is, the tendency for grammaticalized forms to be arranged into paradigms;
- ii obligatorification, the tendency for optional forms to become used obligatorily;
- iii condensation, the shortening of forms;
- iv coalescence, the collapsing together of adjacent forms;
- v fixation, whereby free linear ordering becomes fixed.

Another effect of these mechanisms is that linguistic items belonging to open-class paradigms, such as nouns or verbs, turn into closed-class items, such as adverbs, adpositions, conjunctions, inflections, etc. Finally, these mechanisms have a number of more general effects, the most salient of which are described

by Hopper (1991) in terms of a catalog of principles of grammaticalization, which are:

- i layering, whereby older layers of language use are not necessarily discarded when new layers emerge, but may remain to coexist and interact with the newer layers;
- ii divergence. Divergence (or split; see Heine and Reh 1984: 57) results when a form undergoes grammaticalization and the original form continues to be used as an autonomous element so that the grammaticalized and the ungrammaticalized forms coexist side by side;
- iii specialization. As grammaticalization proceeds, the variety of formal choices narrows and an ever-smaller range of forms assumes a more general (grammatical) meaning;
- iv persistence. Some of the traces of earlier meanings of an item undergoing grammaticalization are likely to survive in the form of the grammatical distribution of the item concerned;
- v decategorialization (see section 2).

For further structural properties involved in grammaticalization, see Hopper and Traugott (1993: 113ff).

The development from less grammatical to more grammatical forms has been described as a continuous process, and various notions have been proposed to describe the structure of linguistic forms undergoing grammaticalization. To this end, Hopper and Traugott use the term “cline”:¹⁸

For example, a lexical noun like *back* that expresses a body part comes to stand for a spatial relationship in *in/at the back of* and is susceptible to becoming an adverb, and perhaps eventually a preposition and even a case affix. Forms comparable to *back of (the house)* in English recur all over the world in different languages. The progression from lexical noun, to relational phrase, to adverb and preposition, and perhaps even to a case affix, is an example of what we mean by a cline. (Hopper and Traugott 1993: 6)

Bybee et al. (1994: 14ff) and Bisang (1996), respectively, use the terms “path” and “pathway” instead, while Heine (1992, 1993) proposes the term “grammaticalization chain,” which is characterized in the following way: (i) it can be interpreted alternatively as a diachronic or a synchronic structure; (ii) it forms a linear structure where one end of the chain is both older and less grammaticalized, while the other end is younger and more strongly grammaticalized; (iii) it can be described as a linearly structured family resemblance category (Heine 1993: 53). The main reason for using the term “chain” rather than “cline” is that grammatical change exhibits an overlapping structure that is described by Heine (1993: 48–53) in terms of an overlap model (see section 2). According to this model, sketched in (6), the development of grammatical forms does not lead straight from the source meaning (or form) A to the target meaning (or

form) B but invariably involves an intermediate stage where A and B coexist side by side, thereby creating a situation of ambiguity (see (5b) for an example):

(6) $A > A, B > B$

Example (7) illustrates this model. It involves the grammaticalization of the Swahili verb of volition *-taka* 'want' to a marker of the proximative aspect ('be about to,' 'be on the verge of'; Kuteva 1998; Romaine 1999). (7a) is an instance of the lexical source meaning (A) of the verb. The overlap situation arises in contexts where a human subject referent cannot really be assumed to 'want' what is described by the relevant predication; such contexts involve verbs like 'die,' 'fall down,' or 'break (one's leg).' The meaning arising in such contexts is that of a proximative aspect ('be about to'); still, an interpretation in terms of volition is possible. Hence, (7b) is an instance of the overlap stage (A,B), also referred to as the bridging stage, where the utterance can be interpreted with reference to both the source meaning (A) and the target meaning (B) (= optional desemanticization). A clear instance of (B) is found in examples like (7c), where instead of a human referent there is an inanimate referent: In such contexts (= extension), the source meaning 'want' can be ruled out¹⁹ – with the result that we are now dealing with an aspectual marker:

(7) Swahili (Bantu, Niger-Congo):

- a. A- na- taka ku- ni- ita
C1- PRES- want INF- me- call
"He wants to call me"
- b. A- na- taka ku- fa
C1- PRES- want/PROX INF- die
i "He wants to die"
ii "He is about to die"
- c. M- ti u- na- taka ku- anguka
C3- tree C3- PRES- PROX INF- fall
"The tree is about to fall"

The presence of such overlap stages suggests that grammaticalization chains cannot be described appropriately in terms of discrete categorization (but see Newmeyer 1998).

It may happen that one and the same source form gives rise to different grammaticalization clines or chains and, hence, to more than one grammatical category. The Swahili examples discussed above are suggestive of such a situation. On the one hand, the verb *-taka* 'want' has become a future tense marker (*-ta-*; see example (2)); on the other hand, it has developed into a proximative aspect marker (example (7)). Such cases, called polygrammaticalization (Craig 1991), are cross-linguistically quite common; a worldwide survey of grammaticalization processes shows, for example, that some lexical items, such as verbs

meaning 'come,' 'get,' 'go,' or 'say,' have given rise to seven or even more different kinds of grammatical categories (Heine and Kuteva 2002).

Conversely, one and the same grammatical function may be derived from two or more different source forms. Future tense markers, for example, can be traced back to a number of different lexical forms, in particular to verbs of motion ('go to,' 'come to') or verbs of volition ('want,' 'desire'). English offers an example: it has one future tense category (*be going to*) derived from a motion verb and another one (*will*) derived from a volitional verb.

Another issue concerns the semantic development in the process of grammaticalization (desemanticization), where three main models have been proposed. According to the most prominent model, the development entails a loss in semantic content of the item concerned; nouns and verbs lose most or all of their lexical meaning when they are pressed into service for the expression of grammatical functions, demonstratives lose their deictic meaning when they turn into definite articles or third person pronouns, and the quantifying component of a numeral for 'one' is bleached out once it is grammaticalized as an indefinite article, etc. Adherents of the "bleaching model" argue that all, or at least most, instances of grammaticalization can be described in terms of semantic change as sketched in (8), whereby one component of meaning (a) is lost while the second component (b) is retained:

(8) $ab > b$

Other students of grammaticalization emphasize that in addition to semantic loss there are also gains. For example, when a verb of motion 'go to' gives rise to the development of a future tense marker then the semantics of physical motion is bleached out. At the same time, however, the semantics of the more abstract domain of tense is added, whereby the erstwhile verb of motion acquires a new sense of prediction or futurity within the cognitive space of tense. In a similar fashion, the development from demonstrative modifier to definite article does not only involve a loss of deictic content, but may also be described as leading to a gain of discourse-referential properties within the domain of text. Accordingly, adherents of this model (Traugott 1980: 47, 1988: 49; Sweetser 1990) argue that while one component of meaning (a) gets lost, another component (c) is added, which means that the loss-and-gain model, as it has been called (Heine et al. 1991: 110), has a structure as sketched in (9):

(9) $ab > bc$

A third model, called the implicature model (Heine 1993), is based on the assumption that grammaticalization may not only involve the addition of a new component but also the loss of the original component; cf. (10). A paradigm case can be seen in the development of the early French negation marker *ne*, which was strengthened by the noun *pas* 'step' (or a few other nouns), thus giving rise to a discontinuous marker *ne ... pas* in modern French. In some

modern uses, *ne* is dropped so that *pas* can be interpreted as having led to a development from a noun 'step' to a negation marker, where the two meanings do not seem to have any component in common:

(10) $ab > bc > cd$

The three models tend to be portrayed as being mutually exclusive, but as a matter of fact they are not; rather, the bleaching model can be said to be contained in the loss-and-gain model, which again is contained in the implicature model, as is suggested by (11).

(11) $ab > b$ Bleaching model
 $ab > bc$ Loss-and-gain model
 $ab > bc > cd$ Implicature model

While the implicature model offers the most comprehensive basis for understanding semantic change in the development of grammatical forms, there are many instances of grammaticalization that suggest that the bleaching model is the most basic one, which is the *sine qua non* for grammaticalization to happen.

7 Terminological Issues

A plethora of terminological distinctions has been proposed to describe grammaticalization.²⁰ Some of these distinctions have turned out to be useful while others have become the subject of controversy, to the extent that we decided not to use them in the present chapter. The latter applies, for example, to the term "reanalysis." Since grammaticalization leads to a change from one meaningful unit to another, or from one structure to another, it has been described by some as a process that necessarily involves reanalysis, while others insist that the two notions should be separated (cf. Hopper and Traugott 1993: 48–56; Newmeyer 1998; Haspelmath 1998; Campbell 2001a: 143–51). There are four conceivable positions on the relation between these two notions, namely:

- i The two are coextensive, that is, all instances of grammaticalization are instances of reanalysis and all instances of reanalysis are also instances of grammaticalization.
- ii There is an inclusion relation, in that all instances of grammaticalization involve reanalysis but not all instances of reanalysis involve grammaticalization.
- iii The two are disjoint classes of phenomena, but some instances of grammaticalization are also instances of reanalysis, and vice versa.
- iv The two are mutually exclusive phenomena.

To our knowledge, neither (i) nor (iv) has ever been maintained by students of the subject matter. (ii) is the position taken in particular by Hopper and Traugott (1993: 61–2), Newmeyer (1998), and Campbell (2001a), while (iii) is maintained, for example, by Heine and Reh (1984) and Haspelmath (1998). Since these different uses of the term “reanalysis” have given rise to a number of (as we think, unnecessary) misunderstandings, we propose to avoid it in future discussions on grammaticalization, in spite of the usefulness it has, for example, for describing syntactic change (see especially Harris and Campbell 1995). It would seem that these misunderstandings are to some extent due to differences in theoretical orientation. For example, for Campbell (2001a: 151) “reanalysis (also sometimes extension) is the determining mechanism that explains grammaticalization and without appeal to these mechanisms, grammaticalization has no explanatory power of its own.” This theoretical assumption is not shared by some students of grammaticalization, for whom syntax does not provide an explanatory parameter; for them, syntax itself is in need of explanation, and grammaticalization provides one parameter for explaining syntax (see, e.g., our Teso example in section 8). According to the latter view, which is also held in this chapter (see section 2), grammaticalization is explained more profitably with reference to the functions that language serves, and the term (syntactic) reanalysis is not viewed as having any explanatory power in grammaticalization studies.²¹

Like reanalysis, the term “analogy” has experienced a wide range of uses, referring to sometimes disparate phenomena of grammatical change. Meillet (1912) treated analogy and grammaticalization as mutually exclusive; others again (Hopper and Traugott 1993: 61–2) argue that grammaticalization does not occur without analogy.²² As we see it, both are right; analogy is a ubiquitous strategy that can be invoked for many different phenomena, to the extent that its use is sometimes not very helpful for describing and/or understanding the specifics of grammaticalization.

Much the same applies to the term “degrammaticalization”: it has received contrasting uses, and been employed, for example, to refer to mirror image reversals of grammaticalization,²³ or to a process whereby a more grammatical item assumes a less grammatical status (cf. Lehmann 1982: 19–20), or to describe the final phase of grammaticalization where an item loses its grammatical status, or else where a grammatical item loses its meaning or function (see especially Norde 2001: 236–7 for a discussion). In view of such a confusing variety of definitions, “degrammaticalization” is not further used in this chapter.

Grammaticalization begins with concrete, lexical forms and constructions and ideally ends in zero (see example (1), section 1); that is, grammatical forms increasingly lose in semantic, morphosyntactic, and phonetic content and, in the end, they may be replaced by new forms. Grammaticalization has therefore been described as a cyclical process (Givón 1979; Heine and Reh 1984; Croft 1990: 230). In fact, cyclicity can frequently be observed, but it is neither a necessary nor a sufficient property of grammaticalization: there are many examples suggesting that grammatical forms which lose their functions and/or phonetic

substance are not necessarily replaced by new forms. Hence, cyclicity is not used as a central term of grammaticalization theory.

8 Some Findings

Research carried out in the course of the past three decades has produced a number of generalizations on the evolution of grammatical categories. The following is a brief summary of the kinds of findings that have been made; the reader is referred to the publications cited for exemplification as well as for further grammaticalizations (see, e.g., Heine and Kuteva 2002).

Within the domain of tense, aspect, and modality, the following is a catalog of commonly observed processes. In more general terms, these processes suggest that verbal aspect categories can give rise to tense categories, or tense categories can be used for the expression of epistemic modality, while processes in the opposite direction are unlikely to happen:

- i Present tense and imperfective markers are frequently derived from progressive markers.
- ii The primary source of future tenses is provided by motion schemas (*X goes to/comes to Y*) and volition schemas (*X wants Y*).
- iii Progressives are most commonly derived from location (*X is at Y*), action (*X does Y*), and companion schemas (*X is with Y*).
- iv Perfect (anterior) markers tend to be derived from resultative or completive markers.
- v Completive markers again are perhaps most commonly derived from verbs meaning 'finish.'
- vi Iterative aspect markers tend to have verbs meaning 'turn' or 'return' as their lexical source.
- vii Markers for deontic (agent-oriented) modality commonly develop into markers for epistemic modality.
- viii Epistemic modality may also be expressed by means of future and past tense markers.

Within the nominal domain, developments such as the following can be observed in the languages of the world:

- ix Definite articles are almost invariably derived from demonstrative modifiers, and indefinite articles from numerals for 'one.'
- x Relative clause markers are also frequently derived from demonstratives, less commonly also from interrogative markers.

Another area of regular grammatical change is that of case marking, where generalizations such as the following have been made:

- xi Allative case markers are the source for a variety of case functions, including benefactive, dative, and purpose markers.
- xii Purpose markers may develop into infinitive forms or markers of cause.
- xiii Cause markers again can be derived from a variety of case forms, such as locative and temporal markers.
- xiv Accusative markers have dative case markers as one of their historical sources.
- xv Comitative markers are likely to give rise to instrumental case markers and coordinating conjunctions ('and').
- xvi Instrumental markers tend to acquire uses as manner markers.

As has been demonstrated in a number of studies, case markers are not functional primitives; rather, wherever there is historical evidence, they can be shown to ultimately go back to lexical items, most of all to terms for body parts, environmental landmarks, and process verbs. Thus, for locative case markers denoting concepts of deictic orientation, generalizations such as the following have been proposed:

- xvii Grammatical markers for FRONT ('in front,' 'ahead') tend to be derived from body part nouns for 'face,' 'eye,' less commonly also for 'breast' or 'head.'
- xviii Markers for BACK ('behind,' '(in) back (of)') are in most cases derived from body part nouns for 'back.'
- xix In the case of markers for DOWN ('below,' 'down,' 'under') the most likely lexical source are nouns meaning 'earth,' 'ground,' and the like, while body part nouns (e.g., 'foot,' 'buttocks,' etc.) are less commonly recruited for this purpose.
- xx Case markers also commonly give rise to markers of clause subordination, in that their function is extended from nominal to clausal participants.

Since the items undergoing grammaticalization are part of the constructions in which they are used, grammaticalization can also be held responsible for many kinds of syntactic changes. For example, if a verb for 'give' is grammaticalized to a benefactive or dative adposition, then this is likely to lead to a syntactic change from verb phrase (V + NP) to adverbial phrase (PREP + NP). In addition, it not uncommonly happens that the grammaticalization of a morphological item may result in the rise of a new word order arrangement. For example, in a number of Niger-Congo languages the introduction of new markings for verbal aspects has given rise to new periphrastic constructions which again appear to have triggered new word order patterns (Claudi 1993, 1994).

That word order change and other syntactic phenomena are frequently epiphenomenal products of such changes²⁴ can be illustrated with the following example from Teso, a Nilotic language spoken in eastern Uganda. Teso has verb-initial (VSO) basic word order, cf (12a); in negative clauses, however,

there is verb-medial (SVO) order, that is, the verb follows the subject but precedes the object, as illustrated in (12b). The VSO-order of (12a) illustrates the earlier pattern, while (12b) is suggestive of an innovation which can be explained in the following way: the negative marker *mam* is historically a verb **-mam* meaning 'be absent, lack, not to be.' Historically, (12b) consists of two clauses which can be reconstructed as in (12c), and the basic order of (12c) can be reconstructed as in (12d). Now, the erstwhile verb **-mam* was grammaticalized to a negation marker (desemanticization) and lost most of its verbal properties (decategorialization), such as the ability to inflect for person or tense-aspect, and it became an invariable particle. But the clausal syntax remained the same, that is, *mam* still occurs in clause-initial position followed by its erstwhile complement (*petero*), which was reinterpreted as the subject of the following clause. Thus, the structure sketched in (12d) was replaced by (12e). Since positive sentences like (12a) were not affected by this development, they retained the original VSO word order:

(12) Teso (Western Nilotic; Nilo-Saharan):

- a. ekoto petero ekinok
wants Peter dog
"Peter wants a dog"
- b. mam petero ekoto ekinok
NEG Peter wants dog
"Peter doesn't want a dog"
- c. *e- mam petero ekoto ekinok
3- not:be Peter wants dog
"It is not Peter (who) wants a dog"
- d. *Verb + complement + verb + object
- e. NEG + subject + verb + object (Heine and Reh 1984: 185–6)

9 Historical Reconstruction

Grammaticalization has some attributes in common with orthodox methods of historical linguistics. Like the comparative method, it is based on the exploitation of regularities in the development of linguistic forms for reconstructing earlier states of language use. In the case of the comparative method, these regularities are manifested, for example, in sound correspondences; in the case of grammaticalization, they consist in the regular behavior underlying desemanticization, extension, decategorialization, and erosion.

But unlike the comparative method, work on grammaticalization is not confined to comparisons across languages or dialects; it may also concern language-internal analysis. In this respect, grammaticalization theory resembles internal reconstruction. Compared to the latter, however, which concentrates on unproductive/irregular alternations, grammaticalization studies are not

restricted in such a way: they deal in much the same way with regular and with irregular patterns, and they are concerned with morphological, syntactic, semantic, and pragmatic problems; it is only in the domain of phonology where they have not much to contribute. Their main contribution lies in the reconstruction of grammatical forms but, as we saw in section 8, it is also of help in analyzing syntactic change.

Semantic change constitutes a problem area in orthodox methods of historical linguistics; it is considered to be irregular, and Anttila concludes "that there are no exact rules for handling semantic change; the final factor here is necessarily the common sense and the experience of the individual scholar" (1989: 229). No wonder that semantics is not considered to be a priority area in the application of the comparative method. Findings on grammaticalization provide a systematic access to semantic change, at least as far as grammatical meaning is concerned.

While grammaticalization theory constitutes an enrichment of historical linguistics, since it offers an additional instrument for diachronic reconstruction, it may at the same time challenge already existing reconstructions. Suppose there are a number of genetically related languages sharing the same typological property. For the historical linguist this fact may be, and has been, taken as evidence that that property can be traced back to the proto-language concerned. For example, a number of Indo-European languages have used the goal schema (*Y exists to/for X*) for predicative possession (*X has/owns Y*), that is, a construction where the verb is 'be, exist,' the possessee is encoded as the subject and the possessor as a dative complement. This fact has been taken as evidence to argue that the goal schema can be reconstructed back to Proto-Indo-European (cf. Meillet 1923; Löfstedt 1963; Isačenko 1974). Grammaticalization studies suggest that such a procedure needs to be reconsidered in light of the fact that the goal schema has not only been used in Indo-European languages but constitutes worldwide one of the common means of grammaticalizing expressions for predicative possession (Heine 1997b). Rather than being a characteristic of Proto-Indo-European, the goal schema may have evolved later, being used independently in various Indo-European languages.

In other cases, grammaticalization studies may contribute to revising or improving existing lexical reconstructions based on the comparative method. Two examples from the Bantu subfamily of Niger-Congo may illustrate this. For Proto-Bantu, the hypothetical ancestor of the 300-plus modern Bantu languages, a root **-dà* 'intestine(s),' 'abdomen,' 'inside' has been reconstructed. Since body parts provide the most common source for deictic location, and nouns for 'stomach' or 'bowels' are frequently grammaticalized to adverbial or adpositional markers for 'inside' (see Heine 1997b), there is reason to assume that 'inside' is a later development of the meanings 'intestine(s)' or 'abdomen' of Proto-Bantu **-dà*. That the development from body part noun to locative marker happened independently in many Bantu languages after the split-up of Proto-Bantu is suggested by observations in some modern Bantu languages (e.g., Tswana, Sotho), where there are reflexes of the body part meaning ('bowels') but no traces of a locative marker.

The second example illustrates the effect of several mechanisms of grammaticalization in the development of grammatical forms. There are two Proto-Bantu roots having a similar form: **-béédè* 'breast, udder' and **-bèdè* '(in) front.' Once again we are led to hypothesize that the locative meaning '(in) front' is historically derived from the body part meanings. This claim is based, first, on the observation that reflexes of **-bèdè* exhibit traces of decategorialization, in that they lack some of the nominal properties that reflexes of **-béédè* show. Second, **-bèdè* appears to have undergone erosion, in that it has a form that is phonologically reduced vis-à-vis the noun **-béédè*: the geminated vowel *ée* has been reduced to a short vowel, and the tonal contour high-low has been simplified to low-low.

On the other hand, there are some areas of reconstruction where the contribution of grammaticalization theory is severely limited. One such area concerns the dating of historical events. It is possible to establish relative chronologies of grammatical change, of the kind *X must have preceded Y in time*. For example, it is possible to establish that the body part meanings of the Bantu items just mentioned must have been there before the locative meanings arose. But beyond such observations, the potential of grammaticalization theory for dating historical events is limited. Similarly, grammaticalization theory has little to offer in the area of genetic classification or subclassification. With regard to the time depth of reconstruction, grammaticalization theory is similar in scope to the comparative method: both allow for empirically sound historical reconstructions when a time depth of a few centuries or a few millennia is involved, but reconstruction work becomes less reliable the more one goes back in time.

10 On Prediction

Grammaticalization theory is a field that is diachronic in the true sense: it not only allows for historical reconstructions but also makes it possible within limits to predict what is going to happen in the future, or else what is likely to exist in some unknown language (Heine 1995). For example, on the basis of the generalizations summarized in section 8 we may postulate at least weak predictions such as the following:²⁵

- i If in a given language a new definite article arises then it is likely to be derived from a demonstrative modifier.
- ii If a new indefinite article arises then most likely it will have a numeral 'one' as its source.
- iii If a new locative marker for BACK ('behind, (in) back (of)') is developed then the most probable source is a body part noun for 'back,' or, in more general terms, new terms for deictic spatial orientation are most likely to have body part terms as their conceptual source.
- iv If a new temporal marker (adverb, adposition, conjunction) evolves then it is likely to be derived from a locative marker.

While these are examples of predictions that appear to have a universal base, there are also conspicuous grammaticalizations that appear to be areally determined (Heine 1994a). For example, the body part 'tooth' provides a widespread source concept for the locative concept IN ('inside,' 'in') in Oceanic languages, while it is largely irrelevant in Africa, where one might predict that 'belly/stomach' (or 'bowels') is the most likely choice (Bowden 1992; Heine 1997b; cf. section 8 above).

It goes without saying that all these predictions are probabilistic in nature, and we concur with Campbell (2001a: 153) in that "strong claims for the predictive power of grammaticalization are clearly exaggerated." As was observed above, grammaticalization theory is not a theory of language change and, as has been aptly demonstrated in recent work (especially Harris and Campbell 1995; Newmeyer 1998; Joseph 2001a; Janda 2001), grammaticalization constitutes merely one of the factors that determine the history and future development of grammar.

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NOTES

- 1 For a fairly comprehensive list of definitions that have been proposed for grammaticalization, see Campbell and Janda (2001).
- 2 Depending on which aspect of the process is concerned, students of the subject matter have referred to the process variously as evolution, development, chain of development, or simply as change. Note further that the term "process" has frequently been used in a more general sense, referring both to the process as a whole and to individual manifestations of it.
- 3 Some authors (especially Newmeyer 1998 and Campbell 2001a) have rightly pointed out that in previous works it has not been made sufficiently clear whether unidirectionality is an empirical hypothesis or an artifact of the definition of grammaticalization.
- 4 Presumably, this is a reformulation of Hodge's (1970: 3) hypothesis "one man's morphology was an earlier man's syntax."
- 5 In view of this and the preceding assumptions, claims such as the following (see also Newmeyer 1998) are hard to reconcile with what one commonly finds in works on grammaticalization: "it is a salient characteristic in most studies of grammaticalization that they are phrased in terms of implying that morphemes exist apart from mortal speakers [. . .]. That is, the emphasis is not on people but on morphemes" (Janda 2001: 283).

- That grammaticalization is motivated by human behavior and human aspirations has been pointed out in some way or other by all proponents of grammaticalization studies.
- 6 The fact that grammaticalization involves mechanisms relating to different components of language structure has been used to argue that grammaticalization theory cannot be defined as a distinct process (Newmeyer 1998; Campbell 2001a; Joseph 2001a; see section 2 above). We do not think that this is a valid argument. Many theories of language do exactly the same, combining such diverse phenomena as phonetics, syntax, and semantics within one theoretical framework. An entirely different catalog of mechanisms is proposed by Hopper and Traugott (1993: 61–2): “Reanalysis and analogy are the major mechanisms in language change. They do not define grammaticalization, nor are they coextensive with it, but grammaticalization does not occur without them.” Concerning reanalysis and analogy, see section 7.
 - 7 Harris and Campbell (1995: 3) define extension as “a change in the surface manifestation of a pattern [...] which does not involve immediate or intrinsic modification of underlying structure.”
 - 8 Instead of saying that extension changes “the syntax of a language by generalizing a rule” (Harris and Campbell 1995: 97), we will say that extension changes the use of a linguistic expression by adding one (or more) contexts in which that expression can be used.
 - 9 More research on the interaction between desemanticization and extension is required. Bybee et al. (1994: 6), for example, argue that the former (= semantic generalization in their terminology) correlates with the latter.
 - 10 The item *a-* in (2a) is a portmanteau morpheme consisting of the noun class 1 marker *a-* plus the tense marker *-a-*. Throughout this chapter, C1 = noun class 1, C3 = noun class 3, etc.
 - 11 For a possible exception, see Janda (2001).
 - 12 Note, however, that there are some more general principles that have been invoked to deal with counterexamples of grammaticalization. Perhaps the most important is analogy (see, e.g., Joseph 2001a: 173ff).
 - 13 Campbell (2001a: 129ff) rightly observes that the view expressed in some earlier studies that some counterexamples to unidirectionality involve lexicalization rather than grammaticalization can no longer be upheld.
 - 14 In the following treatment we are confined to the data presented by Joseph (2001a: 178–83); for further details see Tsangalidis (1999); see also Campbell (2001a: 114).
 - 15 It does not become entirely clear when this change occurred.
 - 16 The Swahili future marker *-ta-* lost the ability to be stressed in main clauses, but retained it in relative clauses, where the full form *-taka* survived (see section 2).
 - 17 For more details, see Bybee et al. (1991).
 - 18 The term “cline” had been proposed earlier by Halliday (1961: 249), who defines it as a “continuum carrying potentially infinite gradation” involving “a relation along a single dimension.”
 - 19 Unless there is some metaphorical and/or culture-specific conceptualization to the effect that inanimate participants are, or can be, presented as willful beings.

- 20 For example, roughly a dozen of different terms have been proposed to refer to the mechanism of desemanticization.
- 21 We are ignoring here cases where syntactic change, or reanalysis, does not involve grammaticalization. A wide range of such cases is discussed in Harris and Campbell (1995).
- 22 Hopper and Traugott (1993: 56) observe that when Meillet was writing, there was a rather narrow, local interpretation of analogy.
- 23 Norde (2001: 260) observes that no real reversal of grammaticalization has been observed so far.
- 24 Not all instances of syntactic change, however, are necessarily also instances of grammaticalization; for examples see Harris and Campbell (1995).
- 25 It would seem that the account of predictability proposed by Campbell (2001a: 152–3) is not entirely in line with what has been observed earlier on this subject. It is correct that one lexical or grammatical form can be grammaticalized in different contexts to two or more different new forms (= polygrammaticalization), and conversely that, for example, a given grammatical function can have more than one lexical or functional sources. We doubt, however, whether this observation is sufficient to argue that grammaticalization theory lacks predictability. For example, demonstratives may give rise to a number of different grammatical markers (see Diessel 1999), including definite articles, and Harris and Campbell (1995: 341–2) consider the change demonstrative pronoun > definite article > case marker or gender-class marker “a likely candidate for a unidirectional sequence of changes” since no change in the opposite direction has been observed. On the basis of such generalizations we feel justified in formulating predictions such as (i) in section 10.