

## The hypothesis of unidirectionality

### 5.1 Introduction

Grammaticalization as viewed from the diachronic perspective is hypothesized to be prototypically a unidirectional phenomenon. In this chapter we elaborate further on some general principles of unidirectionality, with particular attention to such diachronic issues as generalization, decategorialization, increase in grammatical status, and renewal. We will also discuss synchronic issues such as the resultant variability and “layering” arising from those diachronic processes. The hypothesis of unidirectionality is a strong one, and has been the subject of vigorous debate since the 1990s; in Section 5.7 we summarize this debate, and conclude that the counterexamples to unidirectionality that have been adduced so far are sporadic, whereas the evidence for unidirectionality is systematic and cross-linguistically replicated. In Chapter 6 we will discuss in more detail some well-known kinds of unidirectionality found in morphological change, that is, in the later stages of grammaticalization. In Chapter 7 we will suggest that similar types of unidirectionality also occur in morphosyntactic change, especially the development of complex clauses.

Once grammaticalization has set in, there are certain likely paths along which it proceeds. One path discussed by Meillet is that whereby a lexical item becomes a grammatical item, summarized as:

lexical item > morphology

As mentioned in Section 2.2, one of Meillet’s examples was the Modern Greek future particle *tha*, as in:

- (1) Tha tēfonēsō tou patéra mou.  
 FUT telephone DEF:ACC father:ACC my:ACC  
 ‘[I] will telephone my father.’

Meillet said that the source of *tha* is the Classical Greek *thelō hina* ‘I wish that.’ In the preceding chapters we have discussed examples that suggest this formulation of the path of grammaticalization is not quite right. The path is not directly from

lexical item to morphology. Rather, lexical items or phrases come through use in certain highly constrained local contexts to be reanalyzed as having syntactic and morphological functions. Schematically, this can be characterized as:

lexical item used in specific linguistic contexts > syntax > morphology

The lexical items that become grammaticalized must first be semantically general and serve commonly needed discourse functions. They then become syntactically fixed (they become constructions), and may eventually amalgamate morphologically, say, as stem and affix. The basic assumption is that there is a relationship between two stages A and B, such that A occurs before B, but not vice versa. This is what is meant by unidirectionality.

Before proceeding, it should be mentioned that the unidirectionality in question is not the same as what E. Sapir called “drift,” although it has some similarities. In a famous statement, he said: “Language moves down time in a current of its own making. It has a drift” (1921: 150). Even if we were to emend this statement to acknowledge that it is not language that changes, but rather language users internalize different rules of grammar over time (see Section 3.2), there would still be a fundamental difference from what is meant by the unidirectionality of grammaticalization. Sapir was interested in the fact that English was losing case inflections on its pronouns (e.g., the *who–whom* distinction was losing ground), and that English was also becoming more periphrastic, for example, the possessive genitive was being replaced by *of*.<sup>1</sup> While Sapir was thinking of language-specific changes, and, within languages, of highly specific phenomena, other linguists later showed how the separate phenomena he discussed for English were in fact part of the same thing (case loss and periphrasis go hand in hand), and indeed part of larger typological shifts. R. Lakoff, for example, focused on drift “defined . . . very loosely as historical fluctuation between syntheticity and analyticity” (1972: 179), that is, on fluctuation between bondedness and periphrasis, while Vennemann (1975) focused on shifts from OV to VO order. Lakoff’s summary of Sapir’s notion of drift as “a metacondition on the way in which the grammar of a language as a whole will change” (R. Lakoff 1972: 178) serves well to differentiate “drift” from unidirectionality. Drift has to do with regularization of construction types within a language (see also Malkiel 1981), unidirectionality with changes affecting particular types of construction. Unidirectionality is a metacondition on how particular grammatical constructions will change.

## 5.2 Generalization

Among characterizations of grammaticalization, the following statement is typical: “It is often observed that grammatical meaning develops out of lexical

meaning by a process of generalization or weakening of semantic content [Givón 1973; Fleischman 1982; and many others]. It can be further hypothesized that . . . this semantic change is paralleled over a long period of time by phonetic erosion” (Bybee and Pagliuca 1985: 59–60). As we showed in Section 4.5, early stages of grammaticalization do not show bleaching. Rather there is a balance between loss of older, typically more concrete, meanings, and development of newer, more abstract ones that at a minimum cancel out the loss. Many are the result of pragmatic strengthening, and increase in informativeness with respect to grammatical function. We will not repeat these arguments here. Instead, we will focus on the notion of generalization. Generalization is a process which can be characterized, in part, as an increase in the polysemies of a form, and in part as: “an increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status” (Kuryłowicz 1976 [1965]: 69).

### 5.2.1 Generalization of meaning

We start with issues of generalization of meaning. Here the question is not whether the meanings become less distinct in the process of grammaticalization (as the hypothesis of bleaching suggests), but whether there are constraints on what meanings are subject to grammaticalization, and on how the meanings of lexical items that become grammatical may change.

When we think of the lexicon, we assume that it includes not only syntactic and phonological characterizations, but also characterization of such semantic relations as take part in fields (e.g., color terms, or verbs of saying: *say, tell, claim, assert*), relational terms (e.g., kinship terms), taxonomies (hierarchies such as *creature, animal, dog, spaniel*, including part–whole hierarchies, such as *finger–hand–arm–body, keel–boat*), complementaries (non-gradable pairs, with excluded middle, e.g., *true–false*), antonyms (gradable pairs, e.g., *slow–fast*), directional oppositions (e.g., *go–come, teach–learn*), synonyms (e.g., *fiddle–violin*), polysemies (e.g., *mug* [of tea, usually with a handle] and *mug* [of beer, often without a handle]), and so forth. General accounts of lexical semantics can be found in Ullmann (1962), Lyons (1977), Cruse (1986), Levin (1993) and the reader is referred to them for details.

As we have noted in previous chapters, the lexical meanings subject to grammaticalization are usually quite general. For example, verbs which grammaticalize, whether to case markers or to complementizers, tend to be superordinate terms (also known as “hyperonyms”) in lexical fields, for example, *say, move, go*. They are typically not selected from more specialized terms such as *whisper, chortle, assert, squirm, writhe*. Likewise, if a nominal from a taxonomic field grammaticalizes into a numeral classifier, it is likely to be selected from the following

taxonomic levels: beginner (e.g., *creature*, *plant*), life form (e.g., *mammal*, *bush*), and generic (e.g., *dog*, *rose*), but not from specific (e.g., *spaniel*, *hybrid tea*), or varietal (e.g., *Cocker*, *Peace*) (Adams and Conklin 1973). In other words, the lexical items that grammaticalize are typically what are known as “basic words.” In some cases, a formerly fairly specific term can be grammaticalized, but only after it has become more general. An example is provided by Latin *ambulare* ‘walk’ > French *aller* ‘go’ > future auxiliary. As these already general lexical items take on grammatical functions, they are generalized in so far as they come to be used in more and more contexts, that is, they gain wider distribution and more polysemies. This follows naturally from the fact that former inferences are semanticized.

To the extent that there is a difference between lexical and grammatical meaning changes, grammatical meaning changes are a subset of lexical ones. Most notably, grammaticalization does not provide evidence of narrowing of meaning. By contrast, although many lexical changes involve broadening (generalization) of meanings, there are also well-known cases of narrowing, typically of a higher to a lower taxonomic level. Examples of narrowing in lexical change include the restriction of *hound* to a special type of dog, in an avoidance of synonymy (the generic OE *hund* became narrowed to specific rank when Scandinavian *dog* was borrowed). Occasionally, narrowing may involve the restriction to a subtype, in which case the integrity of the lexical item and its components may become blurred. Examples include *raspberry*, *strawberry*, where *rasp* and *straw* have virtually lost their original independent meaning, but together with *berry* identify different varieties of berries. One lexical domain in which narrowing is particularly likely to occur is the domain of terms for dispreferred entities, especially those associated with taboo, social prejudice, or unpleasantness, however these are defined in a particular culture. Examples include *stink* (originally ‘to smell/have an odor’), *cock* (now restricted in some registers to ‘penis,’ with the term for the bird replaced by *rooster*), *mistress* (originally ‘head of household,’ now restricted to female lover, or ‘kept woman’) (for a fuller study, see Allan and Burridge 1991).

One constraint on lexical change that is often noted in the literature is “avoidance of homonymic clash,” in other words, avoidance of what might be dysfunctional ambiguity from the perspective of “one meaning one form” (see especially Geeraerts 1986). Well-known examples are the loss and replacement of one lexical item by another when two or more formerly distinct lexical items undergo regular phonological changes that make them potentially homonymous. Probably the most famous case is that of the replacement of the term for ‘rooster’ in southwestern France by forms such as *faisan* ‘pheasant’ when Latin *gallus* ‘rooster’ and *cattus* ‘cat’ fell together as *gat* due to regular sound change

(Gilliéron 1902–10). In England OE *letan* ‘prevent’ and *lettan* ‘permit’ merged in ME as *let*. The first was replaced by *forbid* and *prevent*, and the potential problems of ambiguity between opposite meanings were avoided (Anttila 1989 [1972]: 182).

The majority of examples of avoidance of homonymic clash are lexical, and even in the lexical domain they are infrequent. In PDE the noun *sanction* is used in two meanings: ‘permission’ and ‘penalty’, and the verb *rent* is used in the senses ‘rent out to’ and ‘rent from’, with little sign of one member of the pair being ousted by the other. In acronyms such potential ambiguities are even more likely to be tolerated, cf. *PC* ‘personal computer’, ‘police constable’, ‘politically correct.’ Syntactic as well as other contextual clues tend to allow for disambiguation. Avoidance of homonymic clash is even more infrequent in the grammatical domain. If it does occur, it does so almost exclusively in connection with relatively independent morphemes. For example, it has been suggested that the idiosyncratic development of the Old Spanish prepositions *faza* ‘toward’ (< Latin *facie ad* ‘with one’s face to’) and (*fata* ‘until’ (< Arabic *hatta* ‘until’) into Middle Spanish (*h)acia* and *fasta* respectively may be attributed to “the powerful urge to differentiate homonyms despite semantic similarity” (Malkiel 1979: 1). Similarly, the borrowing in Middle English of the Northern English feminine pronoun form *she* and of the Scandinavian plural pronoun *they* have been attributed in part to the merger in ME of OE *he* ‘masc.sg.pro.’, *heo* ‘fem.sg.pro.’, *hie* ‘pl.pro.’ (For a detailed study, including possible evidence for regulation of a new homonymic clash that developed between *thai* ‘they’ and the less frequent *thai* ‘though,’ see Samuels 1972.) However, as we have seen, grammatical items are characteristically polysemous, and so avoidance of homonymic clash would not be expected to have any systematic effect on the development of grammatical markers, especially in their later stages. This is particularly true of inflections. We need only think of the English *-s* inflections: nominal plural, third-person-singular verbal marker;<sup>2</sup> or the *-d* inflections: past tense, past participle. Indeed, it is difficult to predict what grammatical properties will or will not be distinguished in any one language. Although English contrasts *he, she, it*, Chinese does not. Although OE contrasted past singular and past plural forms of the verb (e.g., *he rad* ‘he rode,’ *hie ridon* ‘they rode’), PDE does not except in the verb *be*, where we find *she was/they were*.

In sum, as grammaticalization progresses, meanings expand their range through the development of various polysemies. Depending on one’s analysis, these polysemies may be regarded as quite fine-grained. It is only collectively that they may seem like weakening of meaning. The important claim should not be that bleaching follows from generalization, but rather that meaning changes leading to narrowing of meaning will typically not occur in grammaticalization.

### 5.2.2 Generalization of grammatical function

It follows from the preceding discussion that, in so far as grammatical forms have meanings, they will come to serve a larger and larger range of meaningful morphosyntactic purposes. Bybee and Pagliuca (1985) refer to the development of progressives into imperfects. A clear example in English is the spread of an originally highly constrained progressive structure *be V-ing*, that was restricted to agentive constructions, first to passives (*the house was being built* is a later eighteenth-century construction, replacing the earlier *the house was building*), and later to stative contexts, where it serves a “contingency” function, as in *There are statues standing in the park*.

Another example of the generalization of grammatical function is the development in Finnish of the genitive case morpheme to signal the underlying subject of a non-finite clause, for example, a clause introduced by a verb of cognition such as *uskoa* ‘think, believe’ (Timberlake 1977: 144–57). What is at issue here is reanalysis of the genitive in one inflectional context, and spread of the new use to an increasing number of new contexts. It can perhaps best be explained through an English example. In a sentence such as (2) there is a certain ambiguity at the surface level in the function of the word *Jane*:

- (2) We watched Jane dancing/dance.

From one point of view, *Jane* is the person we are watching, and is therefore the object of *watch*. From another perspective, the event (Jane’s dancing) is the object of *watch*. From yet another perspective, *Jane* is the subject of the verb *dance*. For example, we say:

- (3) a. What we watched was Jane dancing/dance.  
b. Who we watched was Jane dancing/dance.

However, in a language that has a system of cases that overtly distinguish between subjects and objects, it is possible to resolve the potential surface ambiguity in different ways, and there may be a diachronic shift from the one to the other. This is essentially the kind of change that occurred in Finnish.

In Finnish, in both older and modern periods, there is no single case for objects; instead, objects are indicated in several different ways (Comrie 1981: 125–36):

- (a) with the accusative case if there is an overt subject, and the matrix verb is active  
(b) with the nominative if there is no overt subject  
(c) with the partitive if the verb is negated, or if the object is partially affected.

Subjects in non-finite clauses in Modern Finnish are indicated with the genitive case:

- (4) Näen poikien menevän.  
 I-see boy:GEN:PL go:PART  
 'I see the boys going.' (lit. 'I see the going of the boys.')
- (Anttila 1989[1972]: 104)

The genitive case for subjects of non-finite clauses in the modern language replaces an earlier case-marking system in which other cases were used. The following examples are from older Finnish texts:

- (5) a. **Accusative**  
 Seurakunnan hen lupasi psysyueisen oleuan.  
 congregation:ACC he promised long-lasting:ACC being:ACC  
 'He promised that the congregation would be long-lasting.'
- b. **Nominative**  
 Homaitan se tauara ia Jumalan Lahia poiseleua.  
 observed it goods:NOM and God:GEN gift:NOM being-lacking:NOM  
 'It is observed that the goods and the gift of God are lacking.'
- c. **Partitive**  
 Eike lwle site syndi oleuan.  
 Not think this:PARTIT sin being:PART  
 'Nor does one think this to be a sin.'<sup>3</sup>
- (Timberlake 1977: 145)

These three cases comprise the set of cases that signal objects, and suggest that in earlier Finnish the whole event was construed as the object. Therefore the change to constructions such as are illustrated by (4) has been one of reanalysis whereby a noun that was once construed as the object of a main-clause verb comes to be construed as the subject of a subordinate-clause verb. The participle in the non-finite clause has also changed: in the earlier type of sentence it is inflected and agrees with the object case (partitive, nominative, or accusative) of the noun. But in the later type of sentence the participle is not inflected – it remains invariant. While it has not acquired any new verbal properties such as tense, it has shed its noun-like properties of inflection (that is, it has become decategorized; see next section).

How did this come about? Timberlake (1977), following Anttila (1972: 103a), suggests that the reanalysis originated in very local contexts: specifically those constructions in which the case morpheme was ambiguous. The original accusative *\*m* and the genitive *\*-n* of singular nouns became homophonous as a result of a phonological change in which word-final nasals merged as *n*. As a consequence, those constructions with singular nouns (e.g., 'boy') serving as objects with participial attributes could be reanalyzed as partitive attributes of a verbal noun (that is, as surface subjects of non-finite verbs).<sup>4</sup>

It appears that a reanalysis that occurred in one very local construction (with singular agentive nouns) was then generalized through a number of new environments

via the following historical stages: first-singular NPs and pronouns; then, in addition, plural pronouns and plural agentive NPs; and finally plural non-agentive NPs. Timberlake suggests that among other things these stages reflect a spread along a functional hierarchy from noun phrases that are more subject-like to less subject-like noun phrases. The highest on the hierarchy are entities that are agentive, and individuated (a singular noun or pronoun), and therefore are prime candidates for being subjects. Next come those that, if not singular, are most likely to initiate actions, that is, personal pronouns and nouns denoting an agent. Finally come non-singular nouns that are less likely to be subjects or to initiate actions, such as inanimates. The syntactic reanalysis is therefore driven by a hierarchy of semantic contexts rather than by strictly syntactic structure.

It would be remarkable to find a hierarchy of this kind reversed. We are unlikely to find, for example, that subjects of verbs (whether finite or non-finite) could originally comprise a broad class of all nouns and pronouns, but that the class of possible subjects of verbs progressively narrowed to exclude, first, inanimate plural nouns, then plural pronouns and animate nouns, and so finally became restricted to singular pronouns and nouns. Nor would we expect to find subject case marking beginning with abstract, inanimate, and plural nouns and only later spreading to animate, anaphoric pronouns.

### 5.3 Decategorialization

Another perspective on unidirectionality presents it as a spread of grammaticalization along a path or cline of structural properties, from a morphologically “heavier” unit to one that is lighter, that is, from one that tends to be phonologically longer and more distinct (e.g., with stressed vowels) to one that tends to be less distinct and shorter. It is from this structural perspective that we approach unidirectionality in this section, with particular attention to the issue of the correlation between increased grammatical status and decategorialization. Important factors in our discussion will be the tendency for relatively prototypical members of Noun, Verb, and Adjective categories to become less prototypical in their distribution, in at least one of their uses. Another will be frequency: the more frequently a form occurs in texts, the more grammatical it is assumed to be. Frequency demonstrates a kind of generalization in use patterns.

In the standard view of grammatical categories, linguistic forms are classified in advance according to criteria that may vary quite widely from language to language. If morphological criteria are available, these usually play a role in the assignment of a form to a category. In the Indo-European languages, for example, “nouns” are typically identified through properties such as case, number, and gender, and



“verbs” through properties such as tense, aspect, and person/number agreement. If morphology is lacking, as is largely the case in Chinese, categories are usually identified through functions such as (for “nouns”) ability to be a topic (e.g., ability to be referential, unavailability for questioning), or (for “verbs”) ability to serve as certain kinds of predicates. When a form undergoes grammaticalization from a lexical to a grammatical form, however, it tends to lose the morphological and syntactic properties that would identify it as a full member of a major grammatical category such as noun or verb. In its most extreme form such a change is manifested as a cline of categoriality, statable as:

major category (> intermediate category) > minor category

In this schema the major categories are noun and verb (categories that are relatively “open” lexically), and minor categories include preposition, conjunction, auxiliary verb, pronoun, and demonstrative (relatively “closed” categories). Adjectives and adverbs comprise an intermediate degree between the major and minor categories and can often be shown to derive straightforwardly from (participial) verbs and (locative, manner, etc.) nouns respectively. At least two major categories – noun and verb – are identifiable in almost all languages with some consistency (see Hopper and Thompson 1984, 1985; Croft 1991, however, argues for three major categories: noun, verb and adjective), whereas the minor categories vary from language to language, being manifested often only as affixes. Given the hypothesis of unidirectionality, it can be hypothesized that diachronically all minor categories have their origins in major categories.

A clear case of shift from major to minor category is seen in the conjunction *while*, as in *while we were sleeping*. As we saw in Section 4.3.2, historically, *while* was a noun (OE *hwil*) meaning a length of time; this meaning is still preserved in PDE (*we stayed there for a while*). As a conjunction, however, *while* has diverged from this original lexical function as a noun, and is grammaticalized as a signal of temporal organization in the discourse. Among the changes involved in the grammaticalization of *while* to a conjunction is a loss of those grammatical features that identify *while* as a noun. When it is used as a conjunction, *while*:

- (a) cannot take articles or quantifiers
- (b) cannot be modified by adjectives or demonstratives
- (c) cannot serve as a subject or as any other argument of the verb
- (d) can only appear in the initial position in its clause, and
- (e) cannot subsequently be referred to by an anaphoric pronoun.

It will be noted that these categorial changes are here presented as negative qualities or losses. This structural characterization contrasts with the pragmatic one in Chapter 4, which focuses on the fact that *while* has “gained” an ability to

link clauses and indicate temporal relationships in discourse in a way that was not possible for it as an ordinary noun. In ascribing “decategorialization” to a form, we are not tracing the decay or deterioration of that form, but its functional shift from one kind of role to another in the organization of discourse. Because this new role is one that does not require overt expression of the linguistic properties associated with discourse reference, such as articles and adjectives, speakers cease to signal these expressions overtly, but such discontinuance of use should not be identified with simple loss, as if somehow a conjunction were a “degenerate” noun.

Similarly, as they become grammaticalized, verbs may lose such verb-like attributes as the ability to show variation in tense, aspect, modality, and person-number marking. In the following pair of sentences, the initial participial “verb” can still show some verb-like features when it is understood literally as in (6), but loses this ability when it is understood as a conjunction (see Kortmann and König 1992), as in (7):

- (6) Carefully *considering*/Having carefully considered all the evidence, the panel delivered its verdict.
- (7) Considering (\*having carefully considered) you are so short, your skill at basketball is unexpected.

In (6), the participle *considering* can take an adverbial modifier, can have a present or past tense form, and must have an understood subject that is identical with the main clause subject; it therefore in a sense has a (recoverable) subject, like a verb. In (7), none of these verb-like attributes are available to *considering*.

Two typical paths of development have been much discussed in the literature. One is a path for nominal categories, another for verbal. These are “grammatical clines,” in the sense that they make reference to hierarchical categories relevant to constituent structure. They are also clines of decategorialization, in that the starting point for the cline is a full category (noun or verb) and the intermediate points are characterized by a loss of morphological structures associated with the full category.

Some caveats should be noted in any discussion of unidirectionality along a cline. Firstly, as mentioned in Section 1.2.2, clines should not be thought of as continua strictly speaking. Rather, they are metaphorical generalizations about likely functional shifts, “paths” along which certain grammatical properties cluster around constructions with “family resemblances” (Heine 1992) (e.g., constructions resembling auxiliaries, or articles, or prepositions). These cluster points should not be thought of as rigid “resting spots.” A metaphor for linguistic forms in these clusters might be chips in a magnetic field; over time fewer or more of the chips in the clusters may be pulled magnetically to another field. Secondly, because there is always a period of overlap between older and newer forms and/or functions

of a morpheme, the cline should not be thought of as a line in which everything is in sequence. As we indicated in Chapter 1, Heine and his colleagues use the term “chaining” to emphasize the non-linearity of relations on a cline. We prefer the term “layering” (see Section 5.5 below) because that metaphor allows more readily for multiple origins of a grammatical form. But here, as in other matters, the metaphors are only partly helpful.

A further caveat is that because the particular course of events in any cline that is presented is not predetermined, once an item has been reanalyzed, continued grammaticalization is not inevitable, but may be suspended indefinitely at any point. Indeed, it is typically suspended at the pre-affixal stage in situations of language death (Dressler 1988). Furthermore, we cannot logically work backwards from some given point to a unique antecedent on the same cline. Absent a historical record, we cannot, for example, uniquely conclude from a cline on which prepositions occur (see Section 5.3.1) that any given preposition must once have been a certain noun, although we can state that it might have been. This is because other sources for prepositions, such as verbs, are possible. For example, the preposition *during* was once the *-ing* form of an obsolete verb meaning ‘to last, endure.’

It is both difficult and unnecessary to illustrate the whole of any one cline with a single form. It is difficult because historical records are rarely long enough to permit the recovery of the entire sequence of events, and so usually we must either posit reconstructed forms for past stages, or else indulge in speculation about future stages. And it is unnecessary because what is at issue is the directionality between adjacent forms on the cline, not the demonstration of the complete sequence of events for a given form. Furthermore, at any one stage of a language, the historical unidirectionality may be obscured by synchronic evidence of renewal of old forms (see Section 5.4.3 below). And, very importantly, different languages tend to exemplify different clusterings on a cline. In other words, not every position on a cline is likely to be equally elaborated at any particular stage. For example, English and Romance languages have fairly elaborated clitic structures, and minimally elaborated inflectional structures, while some other languages, such as Slavic languages, have highly elaborated inflectional structures. Last, but not least, evidence for clines is historical. Ultimately it is the historical record alone that gives us evidence for a cline. Nonetheless, certain facts can point to a cline even when no direct documentation exists. Typical pathways of change identified through cross-linguistic diachronic study can be seen in the synchronic system, for example when we find the same verb used both as a full contentive and as an auxiliary, or a definite article that is clearly cognate with a demonstrative. Differences in the speech community, such as those of dialect, register, speech tempo, etc., may also reveal forms at different points along the same cline.

### 5.3.1 A noun-to-affix cline

We will first consider a cline whose starting point is a full noun, specifically a relational noun (to be defined below). The cline has been presented as follows (C. Lehmann 1985: 304):

relational noun >  
 secondary adposition >  
 primary adposition >  
 agglutinative case affix >  
 fusional case affix

These five points should not be taken as strictly discrete categories, but as marking, somewhat arbitrarily, cluster points on a continuous trajectory. In other words, most forms that are locatable on this cline will not fit unambiguously into one or the other of the named categories, but will be seen as moving toward or away from one of them in a direction that we can call “from top to bottom,” following the writing conventions adopted above.

A relational noun is one whose meaning is a location or direction potentially in relation to some other noun. *Top*, *way*, and *side*, and many body parts such as *foot*, *head*, and *back* often assume a relational meaning, and in doing so may enter this cline (Heine, Claudi, and Hünemeyer 1991b). The relational noun usually appears as the head noun of a phrase, such as *side* in *by the side of* (> *beside*), or as an inflected noun, such as German *Wegen* ‘ways [dative plural]’ > *wegen* ‘because of,’ as in *wegen des Wetters* ‘because of the weather.’

The term “adposition” is a cover term for prepositions and postpositions. Secondary adpositions are usually forms (words or short phrases) that define concrete rather than grammatical relationships. They are typically derived from relational nouns, e.g., *beside the sofa*, *ahead of the column*. Primary adpositions are thought of as the restricted set of adpositions, often monosyllabic, that indicate purely grammatical relationships, such as *of*, *by*, and *to*. However, primary adpositions may themselves be characterized by a cline in meaning in so far as some may have a relatively concrete spatial meaning, for example, *by* in *a hotel by the railway station*, while others do not, for example, *by* in *arrested by a plain clothes policeman*. While the distinction between concrete and grammatical meaning is often not easy to define, the spatial meanings of primary adpositions are always very general. The spatial meanings are moreover likely to be recovered by some kind of reinforcement, e.g., *by the railway station* > *down by the railway station*; *in the house* > *within/inside the house*.

Primary adpositions are easily cliticized, and may go one step further to become affixes. Locative suffixes of various kinds can often be traced back to earlier

postpositions (and, still further back, to nouns). In Hungarian the suffix *-ban*, as in *házban* ‘house-inessive/in the house,’ was once the locative case of a relational noun meaning ‘interior.’ Similarly, the elative, meaning ‘away from,’ as in *házból* ‘from the house,’ shows a suffix *-ból* that goes back to a different case of the same word. The final *n/l* segments of the two suffixes are themselves relics of the two case endings on the relational noun (Comrie 1981: 119).

The Hungarian suffixes *-ban* and *-ból* are examples of agglutinative suffixes: they are joined to the stem with a minimum of phonological adjustments, and the boundary between stem and suffix is quite obvious. By contrast, fusional affixes show a blurring not only of the stem/affix boundary, but also of the boundaries among the affixes themselves. In Latin *militibus* ‘to/from the soldiers,’ *-ibus* is a dative/ablative plural suffix which cannot be further analyzed, and in *miles* ‘soldier:NOM:SG’ the *-t-* of the stem *\*milet* has been lost through assimilation to the nominative singular suffix *-s*.

### 5.3.2 A verb-to-affix cline

A parallel cline has a lexical verb as its starting point which develops into an auxiliary and eventually an affix (verbal clines have been the subject of several cross-linguistic studies, most notably Bybee 1985; Bybee and Dahl 1989). There are a number of points on this cline which can be characterized as follows:

- full verb >
- auxiliary >
- verbal clitic >
- verbal affix

On this cline, we typically find that verbs having a full lexical meaning and a grammatical status as the only verb in their clause come to be used as auxiliaries to another verb. Auxiliary verbs typically have semantic properties of tense, aspect or mood, and show specialized syntactic behavior (e.g., in PDE, auxiliary *will* cannot occur in certain temporal and infinitival clauses; hence the following are ungrammatical: *\*Let's wait till she will join us*, *\*I would like her to will join us*). There are numerous examples of the shift from main to auxiliary verb. From PDE we have cited *go* in *be going to*. Other examples include *have*, which is a full verb in *have a book*, but a partial, or “quasi-auxiliary” in *have a book to read* and *have to read a book*, and a full auxiliary in *have had a book* (here auxiliary *have* precedes main verb *have* in its past-participial form). Another example is *keep*, which is a full lexical verb in *she keeps indoors on cold days*, but an auxiliary in *she keeps watering the tomatoes*. Auxiliaries may historically become clitics, like English *have* in *we've built a new garage*. And such clitics may become affixes. As

discussed in Section 3.3.1, this happened in the French future-tense paradigm, as in *ils parleront* ‘they will speak,’ where *-ont* reflects a former cliticized auxiliary ‘have.’

An additional position intermediate between main verb and auxiliary verb has been proposed by Hook (1974, 1991). Presenting data in which a clause may contain a complex of two verbs known as a “compound verb,” Hook has argued that in Hindi and other Indo-Aryan languages there is a class of “light verbs” which, following Slavic terminology, he calls “vector verbs.” One of these verbs, the “main” or “primary” verb, carries the main semantic verbal meaning of the clause, and is non-finite. The other, the “vector” verb, is a quasi-auxiliary which is finite, and therefore carries markers of tense, aspect, and mood. Semantically, it adds nuances of aspect, direction, and benefaction to the clause. In modern Indo-Aryan languages vector verbs are homophonous with main verbs meaning ‘go, give, take, throw, strike, let go, get up, come, sit, fall,’ etc., and are derived from them (Hook 1991).

Since Hindi is a verb-final language, the order of the two verbs in the “compound” construction is main-vector:

- (8) māī ne das baje aap ko fon kar liyaa  
 I AGT 10 o'clock you DAT phone make VECTOR/brought  
 ‘I telephoned you at 10 o'clock.’
- (9) māī ne use paise de diye.  
 I AGT him:DAT money give VECTOR/gave  
 ‘I gave him the money.’ (based on Hook 1974: 166–7)

The vector verbs are in the past tense, and, as is indicated by the glosses, are homophonous with past tenses of verbs meaning ‘bring’ (*lenaā*) and ‘give’ (*denāā*). The main verb in (8) is *kar* ‘make,’ and in (9) *de* ‘give.’ In (9), then, ‘give’ appears as both the main verb (*de*) and the vector verb (*diye*). The semantic force of the vector verb is hard to specify, but in general it expresses perfectivity. Both of the sentences could be phrased with the main verb alone, as in:

- (10) māī ne das baje aap ko fon kiya.  
 I AGT 10 o'clock you DAT phone make  
 ‘I telephoned you at 10 o'clock.’
- (11) māī ne use paise diye.  
 I AGT him:DAT money give  
 ‘I gave him (the) money.’

However, (10) leaves open the question of whether the call was successfully put through, while (8) would definitely suggest that the call was completed. (9) implies that all the money was given, while again (11) leaves this open. In other words, the compound verb has all of the semantic complexities of perfective aspect, such as

Table 5.1 *Approximate proportion of compound verbs in Indo-Aryan languages*

Language	Proportion
Shina (Gilgit)	0
Kashmiri	1
Marathi	3
Gujarati	6
Bengali	7
Marwari	8
Hindi–Urdu	9

*Source:* based on Hook (1991: 65)

emphasis on completion, full affectedness of the verb's object, and involvement of an agent. It should also be noted that there are certain types of construction where it is mandatory.

Hook argues that we have here a movement toward grammaticalization of a set of verbs which are becoming specialized as vector verbs. In his view, vector verbs therefore represent an intermediate stage between full verb and auxiliary. From this perspective it is interesting to trace the trajectory of the change to vector status by looking both at earlier texts and at other Indo-Aryan languages closely related to Hindi in which the change has not proceeded so far. This latter strategy is a highly convenient one because the languages are fully accessible and texts in the various cognate languages are available which are thematically similar or identical. Consider first the relative textual frequency of simple versus compound verbs in Hindi and some of the related languages (Hook 1991: 65). Table 5.1 shows the approximate proportions of compound verbs in texts among various languages of the group. That is to say, in comparable texts there are about nine times as many compound verbs in Hindi–Urdu as in Kashmiri, and twice as many in Gujarati as in Marathi. Textual frequency is often considered *prima facie* evidence of degree of grammaticalization (see, e.g., Heine, Claudi, and Hünemeyer 1991a; Bybee, Perkins, and Pagliuca 1994; also Section 5.6 below).

Textual frequency is accompanied by differences in the kinds of main verbs which may be accompanied by one of the vector verbs. In Marathi, which represents a less advanced stage from the point of view of the grammaticalization of vector verbs, there is a preference for them to be used only when the main verb is inherently unspecified for completedness; in other words, they add aspectual information. In Hindi–Urdu, where vector verbs are more frequent, they have spread to environments in which they are redundant, that is, to inherently completive verbs, including communication verbs, which, in context, tend to be completive (as, for

Table 5.2 *Ratio of compound verbs in Marathi and Hindi–Urdu according to semantic class of main verb*

Semantic class of main verb	Marathi	Hindi–Urdu
Displacement or disposal	10%	44%
Creation/change of state	8%	30%
Change of psychic state	8%	8%
Sensation or perception	4%	8%
Mental action	4%	10%
Communication	2%	20%

Source: based on Hook (1991: 68–9)

example, *she said*) (Hook 1991: 69–70). Table 5.2 shows the difference between Marathi and Hindi–Urdu with regard to the ratio of compound verbs to the total verb forms for certain classes of main verbs. This suggests that, as grammaticalization proceeds, the semantic range of the emergent grammatical morpheme expands or generalizes. The difference between Hindi and Marathi is a statistical one, not a categorical one. Challenging Hook, Butt (Forthcoming) argues that since light verbs are highly stable and are historically a dead end, they are not intermediate and should not be included in the verb-to-affix cline; they arise out of reanalysis of main verbs, but not out of grammaticalization, since they do not involve phonological loss, or any clear trajectory toward auxiliaries. However, even if they do not belong on the cline, they do suggest grammaticalization – phonological attrition is not a prerequisite, as the development of auxiliary *must* and *might* in English demonstrate, and passage through a complete cline is never necessary or expected for grammaticalization. In this case, the decategorialization of the main verb and the frequency patterns suggest strongly that grammaticalization is involved.

### 5.3.3 Multiple paths

So far our examples in this chapter have arguably been of changes along a single cline. Not all cases of grammaticalization are of this kind, however. Some show development along two or possibly more different clines. Craig has given the name “polygrammaticalization” to such multiple developments, where a single form develops different grammatical functions in different constructions. Her example is from Rama. As alluded to in Section 4.3.2 in connection with example (23), *\*bang* ‘go’ in Rama developed into: (i) a temporal marker in the verbal



domain; (ii) a purposive adposition in the nominal domain, and then a conjunction in the complex sentence domain (conjunctions are analyzed as adpositions to clauses, see Section 7.3). Givón (1991b) shows that relative-clause morphology, specifically Biblical Hebrew *‘asher* (probably derived from *‘athar* ‘place’), spread both into adverbial clause domains such as causatives, and also into complementizer domains. Lord (1976, 1993) shows that ‘say’ complementizers generalize in different languages to causal clauses in languages such as Yoruba and Telugu, and to conditionals in Gã. Development along such multiple paths into different grammatical domains conforms to unidirectionality in that the later forms are more grammatical (abstract, reduced, generalized) than the earlier ones.

Not all multiple paths show split, however. Just as in phonology we find split and merger or convergence, so in grammaticalization we find that sometimes forms from several slightly different domains may converge on one grammatical domain, provided that there is pragmatic, semantic, and syntactic appropriateness. The phenomenon of convergence from various subpaths of grammaticalization is often described in terms of the metaphor of convergence in “semantic space.” One example is provided by Kemmer (1993b), who charts the domain of reflexives and middle voice. In her characterization of these domains, the reflexive construction expresses situations where the initiator and endpoint of the event refer to the same entity, but are conceived as conceptually different, as in *hit oneself*, *see oneself*. Middle-voice constructions such as *wash (oneself)*, *dress*, *get angry*, *think* are similar in that they express situations where initiator and endpoint in the event are the same entity, but they are different in that the conceptual difference is less than that in reflexive situations. Kemmer (1992) shows that the generalization of reflexives into middles is very common cross-linguistically (see also Faltz 1988), but other sources are evidenced too, such as passive and reciprocal (the ‘each other’ construction). Other semantic maps with multiple subpaths have been suggested for evidentials (L. Anderson 1986) and conditionals (Traugott 1985b).

## 5.4 Some processes participating in unidirectionality

Several processes typical of grammaticalization contribute to semantic and/or structural generalization and decategorialization. They may, however, at first glance appear to complexify the process, and to raise questions about it. We will discuss three typical processes: specialization, whereby the choice of grammatical forms becomes reduced as certain ones become generalized in meaning and use; divergence, whereby a less grammatical form may split into two, one variant maintaining its former characteristics, the other becoming more grammatical; and

thirdly, renewal, whereby old forms are renewed as more expressive ways are found of saying the same thing.

#### 5.4.1 *Specialization*

In considering textual frequency and semantic generalization of the sort discussed in connection with Indo-Aryan compound verbs above, we might imagine that this textual frequency and semantic generalization could in theory proceed with exactly the same set of vector verbs at each stage. However, as the semantic range of individual vector verbs becomes greater and more general, the chances of overlap and ambiguity on the fringes are bound to increase, and some of the vector verbs will become redundant and fall out of use. Consequently, while the text frequency of some of the vector verbs increases, the number of different vector verbs decreases. This exemplifies specialization, the process of reducing the variety of formal choices available as the meanings assume greater grammatical generality (Bréal 1991 [1882]: 143; Hopper 1991: 22). Hook (1991: 75) notes that:

(a) In both the Hindi–Urdu and the Marathi text samples, the most frequently occurring vector verb was the one meaning *GO*. But in Hindi–Urdu *GO* accounted for 44% of all vector verbs in the sample, while in Marathi it accounted for only 32% of all vector verbs.

(b) The five most frequent vector verbs in the Hindi–Urdu text sample accounted for 92% of the total number of vector verbs; while in Marathi the five most frequent vector verbs accounted for only 82% of the total number.

(c) In the Hindi–Urdu text sample, only 10 different verbs were used as vector verbs; in the Marathi sample, 14 different verbs were used as vector verbs.

These statistics suggest that in Hindi a handful of verbs is gaining the ascendancy in the competition for auxiliary status. Here again we see a major difference between lexical and grammatical items. In any domain of meaning the number of lexical items will vastly exceed the number of grammatical morphemes. Moreover, lexical items form an open class, which can be added to indefinitely, while the inventory of grammatical morphemes is added to only very sparingly, by items originating in the lexical class. If we compare, for example, the number of tense and aspect distinctions which are expressed grammatically in a given language with the number of ways of modifying actions and events available through lexical adverbs, we can see immediately that the process of grammaticalization is a selective one in which only a few lexical forms end up as grammatical morphemes. However, old forms may continue to coexist (see especially Section 5.5 on “layering” below); therefore specialization does not necessarily entail the elimination of alternatives, but may be manifested simply as textual preferences, conditioned by semantic types, sociolinguistic contexts, discourse genres, and other factors.

Another good example of specialization is the Modern French negative construction, which in the written language consists of a negative particle *ne* before the verb and a supportive particle, usually *pas*, after it:

- (12) Il ne boit pas de vin.  
 he NEG drinks NEG PARTIT wine  
 'He doesn't drink wine.'

As indicated in Section 3.6, at earlier stages of French, predicate negation was accomplished by *ne* alone placed before the verb. This *ne* was itself a proclitic form of Latin *non*, Old French *non*. Already in Old French, a variety of adverbially used nouns suggesting a least quantity (Gamillscheg 1957: 753) could be placed after the verb in order to reinforce the weakened negation. These reinforcing forms included; among others:

*pas* 'step, pace'  
*point* 'dot, point'  
*mie* 'crumb'  
*gote* 'drop'  
*amende* 'almond'  
*aresta* 'fish-bone'  
*beloce* 'sloe'  
*eschalope* 'pea-pod'

They seem originally to have functioned to focus attention on the negation itself, rather than on the verb being negated; without the reinforcer, the focus of attention would fall on the verb (Gamillscheg 1957: 755). By the sixteenth century, the only ones still used with negative force were *pas*, *point*, *mie*, and *goutte*, all of them more general terms than those which were no longer used. Even in the sixteenth century, *pas* and *point* predominated, and by the modern period these were the only two which were still in use. Of the two remaining, there is a clear sense in which *pas* is the only "unmarked" complement to *ne* in negation. It is by far the more frequent in discourse, it participates in more constructions than *point*, and is semantically more neutral, *point* being an emphatic negator. *Point* today denotes only emphatic negation contradicting a previous assertion (though there is some possibility that this semantic distinction between *pas* and *point* was originally an artifact of French grammarians). In other words, *point* cannot be relatively negative, perhaps because of the operation of persistence (see Section 4.5) – a 'point' is not relative. Therefore in a sense *pas* is the only form which has become fully grammaticalized out of an array of forms which could reinforce negation in Old French. It has also become a negative morpheme in its own right in a number of contexts (*pas moi* 'not me,' *pas plus tard qu'hier* 'not later than yesterday,' etc.), and in the spoken language

the *ne* of ordinary verbal negation is usually dropped (*je sais pas* ‘I don’t know’), leaving *pas* as the only mark of negation.

This thinning out of the field of candidates for grammaticalization as negators is accompanied, as usual, by a shift of meaning, in this case from the lexical meaning ‘step, pace’ to the grammatical meaning of negation. There is in this instance no phonological change peculiar to the grammaticalized form, and no fusion with neighboring words. The original noun *pas* lives on in its earlier meaning of ‘step, pace,’ and it remains completely homophonous with the negative particle.

Before leaving the example of French negators, it is worthwhile to consider its implications for the discourse motivations of grammaticalization. The origins of the use of concrete nouns as reinforcers of negation cannot be documented, but it is reasonable to surmise that they were once linked to specific verbs. Presumably *mie* ‘crumb’ was once collocated with verbs of eating, i.e., ‘he hasn’t eaten a crumb,’ or perhaps – in a milieu where food was scarce and bread a common means of payment for services rendered – giving, and so on: ‘they didn’t pay/give me a crumb.’ Similarly with *goutte* ‘drop’: ‘he hasn’t drunk a drop.’ With *pas* ‘step,’ the verb must have been a verb of motion: ‘he hasn’t gone a step.’ We may compare the vernacular English use of ‘drop’ and ‘spot’ in (13), where the context of *drop* has similarly been expanded in a way that suggests incipient grammaticalization:

(13) He didn’t get a drop (spot) of applause.

*Bit* (i.e., a small bite, cf. German *bißchen*) is of course normal in such contexts for all dialects.

There is nothing strictly conceptual (semantic) about nouns such as ‘peapod,’ ‘crumb,’ ‘step,’ and the others which would predict that they would become negators. They are not all intrinsically “minimal quantities” of things, but they assume that meaning when combined in discourse with negators. However much in retrospect we see semantic commonalities in the ways in which forms evolve, it is important to keep in mind that ultimately their roots and motivations are in real speech and real collocations, and that the study of how forms are distributed in discourse is indispensable in understanding grammaticalization.

#### 5.4.2 *Divergence*

When a lexical form undergoes grammaticalization to a clitic or affix, the original lexical form may remain as an autonomous element and undergo the same changes as ordinary lexical items (Hopper 1991: 22). This characteristic of “divergence” is a natural outcome of the process of grammaticalization, which begins as a fixing of a lexical form in a specific potentially grammatical environment, where the form takes on a new meaning (the same phenomenon is called “split” in Heine and Reh 1984: 57–9). Since the context of incipient grammaticalization is

only one of the many contexts in which the lexical form may appear, when the form undergoes grammaticalization, it behaves just like any other autonomous form in its other, lexical, contexts, and is subject to semantic and phonological changes and perhaps even to becoming obsolete.

Consider, for example, the English indefinite article *a/an*. In OE this word was *an*. Its vowel was long, the same as the vowel in the word for ‘stone,’ *stan*. It meant ‘one, a certain,’ and was not used in the general non-specific sense that we might use it in today, as in *I caught a fish*, but was chiefly used to “present” new items, as in *There was once a prince of Tuscany*.

The normal phonetic development of this word in PDE would have been [own], rhyming with ‘stone.’ While in Scottish English the two words continue to have the same vowel ([eyn], [steyn]), in most other dialects a phonological development peculiar to this word occurred yielding the PDE full form [wʌn]. The cliticized form of this same word became de-stressed, and formed a single accentual unit with the following noun or constituent of the noun phrase (adjective, etc.), resulting in its PDE form and distribution: the vowel [ə], and retention of the [n] when followed by a vowel. The divergent histories of the stressed and unstressed forms can be seen in alternations such as the following:

- (14) Would you like *a* Mai Tai? – Yes, I’d love *one*.

We turn now to a more detailed example of divergence, from Malay. Nouns in certain discourse contexts in Malay must be preceded by a classifier (Hopper 1986b). Classifiers occur in many languages in association with number words; they are comparable to the word ‘head’ in ‘ten head of cattle’ (see Schachter 1985: 39–40). The following examples are from a Malay narrative text known as the *Hikayat Abdullah* (CL stands for (nominal) classifier):

- (15) Ada-lah kami lihat tiga *orang* budak-budak kena hukum.  
 happen we see three CL boy-PL get punishment  
 ‘We happened to see three CL boys being punished.’ (Hopper 1986b: 64)
- (16) Maka pada suatu pagi kelihatan-lah *sa-buah* kapal rendah  
 and on one morning was: seen-PARTICLE a:CL ship low  
 ‘Then one morning a CL low ship was sighted.’ (Hopper 1986b: 77)
- (17) Mati-lah tiga *ekor* tikus.  
 dead-PARTICLE three CL rat  
 ‘Three CL rats were killed.’ (Hopper 1986b: 144)

The italicized words *orang*, *buah*, and *ekor* are classifiers. In Malay they indicate that the noun which is classified is new and relatively important to the discourse. They are not interchangeable: *orang* is used before human nouns, *buah* before objects of a bulky size, and *ekor* before nouns which denote animals of any kind. There is in addition a more general classificatory word *suatu* (also found as *satu*), used before singular objects (in the sense of ‘things’) and competing with *buah*:

- (18) Maka di-beri-nya hadiah akan Sultan itu *suatu* kereta bogi.  
and he-gave as-gift to Sultan the a:CL carriage buggy  
'And he gave a CL buggy carriage to the Sultan as a gift.'

(Hopper 1986b: 166)

The classifiers themselves are preceded, as in these examples, by a number word such as *tiga* 'three,' or the singular clitic *sa-* 'one, a.' However, *suatu* is only singular and is not preceded by *sa-* or any other number word or quantifier; the reason for this, as we shall see, is that the *s-* of *suatu* is itself historically the same singular morpheme *sa-* that is found with the other classifiers when the classified noun is singular.

In Malay, as in other classifier languages, most of the classifiers double as autonomous nouns. *Buah* means 'fruit,' *orang* 'person, man,' and *ekor* 'tail.' There is thus a divergence between a lexical meaning and a grammaticalized meaning. On occasions when the two come together, a sort of haplology (contraction of adjacent identical material) occurs; while the word for a Malay person is *orang Melayu*, one instance of *orang* stands duty for both the classifier *orang* and the head noun *orang*. Consequently, 'five Malay men' is:

- (19) lima *orang* Melayu  
five CL/men Malay

rather than

- (20) \*lima *orang* orang Melayu

Similarly, with *buah*: a pomegranate is *buah delima*, but if the expression is classified, in place of *sa-buah buah delima* 'a pomegranate,' *sa-buah delima* is used.<sup>5</sup> The constraint against *orang*, *buah*, etc. occurring with homophonous lexical items shows that grammaticalization has not proceeded so far that these classifiers and their cognate lexical noun are sensed as being formally unrelated.

With *suatu* the situation is quite different. While this form competes with *sa-buah* as the classifier for bulky inanimate objects, it is often used with abstract nouns in contexts where *sa-buah* would not be appropriate, e.g., *suatu khabar* 'a piece of news,' *suatu akhtiar* 'an idea.' The form *suatu* is in the modern language somewhat archaic and literary; it is generally pronounced and written *satu*, and has, significantly, become something like a strong indefinite article. It is also the numeral 'one' when counting 'one, two, three, etc.,' and in this sense often corresponds in the texts to English 'one' in 'one day, one morning,' etc. The older form with *u* (*sautu*) suggests a reconstruction \**sa watu* 'one stone,' with a noun \**watu* 'stone' having cognates in Javanese *watu* 'stone' and Malay *batu* 'stone.' The phonological change from initial *w* to initial *b* before *a* has several

parallels in Malay. However, *batu* does not serve as a classifier in modern Malay, although it would not be at all strange if it did. There is a classifier *biji* whose corresponding lexical noun means ‘seed,’ and which is used for smallish round objects; larger objects, as we have seen, are classified with *buah*. Presumably *\*watu* as a classifier once covered a similar range, classifying three-dimensional objects of an indeterminate size. The older form *\*watu* ‘stone’ continues as a frozen classifier embedded in an indefinite-article-like quantifier meaning roughly ‘a, one.’ It is distributed in the texts much like the complex *sa-* + classifier, referring to new and prominent things in the discourse, but it occurs preferentially with nouns which do not belong in an “obvious” category for one of the established classifiers. Interestingly, in the texts it is often used with abstract nouns, many of them of Arabic origin, and with nouns denoting concrete objects which are not part of traditional Malay culture.

The evolution represented by *\*watu* ‘stone’ > *\*sa watu* ‘a (classifier for smallish objects)’ > *\*sa watu* ‘a (classifier for every kind of object)’ > *suatu* ‘one/a (with abstract or non-traditional objects)’ > *satu* ‘one/a (with any noun)’ is a paradigm case of grammaticalization. It exemplifies persistence, that is, the grammaticalized construction is constrained by its origins: a real classifier is not also used if a noun is quantified with *s(u)atu*, e.g., *\*suatu buah rumah* ‘one house’ is excluded: only *suatu rumah* or *sa-buah rumah* are permitted. This constraint against *\*suatu buah rumah* can be explained by the fact that *suatu* itself historically already contains a classifier. It is also an example of divergence. A form assumes two distinct functions (lexical noun and classifier). One of these functions (that of lexical noun) is found in an environment where it is exposed to a phonological process (initial *w-* > *b-* before *a*) from which the other function is insulated (when protected from initial position by the proclitic *sa-*, *w-* did not undergo the change). The result is that the two forms *satu* and *batu* are no longer felt as cognate by speakers of the language. For example, *satu batu* ‘a/one stone (= one mile)’ is unobjectionable, whereas, as we have seen, *sa-orang orang* ‘a/one person,’ or *sa-buah buah* ‘a/one fruit’ are avoided.

It should be added that phonological (allomorphic) split of the kind we have described for Malay *batu/suatu* is not necessary for this kind of divergence to occur, nor is it a required outcome of the process. In many instances the autonomous lexical item and its grammaticalized counterpart may cooccur quite happily in the same construction; e.g., the English auxiliary verb *do* frequently occurs with *do* as main verb (*do do it!*; *they do do that*).

As mentioned in Section 3.2.4, there has in the past been a tendency to think of change in terms of “A uniformly > B.” Given such an approach, divergence might seem to be an unlikely characteristic. However, as we have noted, change must always be seen in terms of variation, and the formula for change should therefore



be  $A > A/B > B$ . Even so, it still needs to be stated that it is by no means inevitable that A will disappear. A and B may instead each go their own ways and continue to coexist as divergent reflexes of a historically single form over many centuries, even millennia. An example is the development and persistence from Middle English on of constructions of the type *The more he complains, the angrier he gets*. This construction originated in a comparative introduced by *þy*, the instrumental form of the demonstrative. The new form has coexisted with the demonstrative *that* from which it derives, and with the article *the* which it resembles in form, but does not have the syntax of either. The formula should ideally therefore be further modified to  $A > B/A (> B)$ .

### 5.4.3 *Renewal*

In divergence existing forms take on new meanings in certain contexts, while retaining old meanings in other contexts. We turn now to a process whereby existing meanings may take on new forms: renewal. Renewal results primarily in alternate ways of saying approximately the same thing, or alternate ways of organizing linguistic material. Often, but not always, these new ways are periphrastic, i.e., phrasal.

If all grammaticalization leads to decategorialization and ultimately to minimal, compacted forms, how is it that language users can ensure that languages continue to serve their purposes of organizing cognition and achieving communication? This question is in part answered by the hypothesis of competing motivations of increasing informativeness versus routinization. But does this mean that unidirectionality is a chimera? The answer is that new structures keep being grammaticalized through the process that Meillet termed “renouvellement” or “renewal,” and that instances of renewal consistently show evidence of unidirectionality once the renewal has set in.

A vivid example of renewal is the recent history of English intensifiers (words such as *very* in *very dangerous*). At different times in the last two centuries the following among others have been fashionable: *awfully*, *frightfully*, *fearfully*, *terribly*, *incredibly*, *really*, *pretty*, *truly* (cf. *very*, which is cognate with French *vrai* ‘true’) (Stoffel 1901). Even in the written language, *very* often alternates with such words as *most*, *surprisingly*, *extremely*, *highly*, *extraordinarily*. Over time, however, we can expect the choices to be reduced, owing to specialization.

Intensifiers are especially subject to renewal, presumably because of their markedly emotional function. They are unusual in undergoing renewal especially frequently. But certain other categories, although not as shortlived as intensifiers, are also renewed with some degree of predictability. Negative constructions are one example. In spoken English expressions such as *no way* (cf. *No way we’re taking this stuff*) are replacing simple *n’t*, from *not*, itself a contraction of *na wiht*



'no thing.' Schwegler (1988) writes of a "psycholinguistic proclivity" for the development of negative emphasizees, and shows how they have their starting point in contexts of contradiction, in other words, in emotionally loaded contexts. The example of negative renewal shows that sometimes old forms (in this case *n-*) may be involved in the new structure (but not in exactly the same way as before). Another example is provided by the reinforcement in Surselvan (Rhaeto-Romance) of reflexive *se* by the form *sesez* (Kemmer 1992). In most Romance languages the reflexive *se* serves both reflexive and middle functions. However, in Surselvan the reflexive has been reinforced by an emphatic version of itself (a pattern that goes back to Latin), while the original *se* now serves only middle functions.

The renewal of one form by another may or may not occur in the same constituent position. English intensifiers such as *awfully* and Surselvan *sesez* are simply substitutes, involving no new syntactic or phonological strategy. But sometimes renewal may involve a more strategic overhaul. The spoken English negator *no way* has little in common syntactically with the *n't* with which it competes. The French negative reinforcer *pas*, which is assuming the role of general negator, occurs after rather than before the verb, reflecting a change that could be represented over several centuries as:

ne va 'doesn't go' > ne va pas > va pas

Similarly in English the original negator *ne* preceded the verb, as in (21):

- (21) Ne canst þu huntian butan mid nettum?  
 not know you hunt-INF except with nets  
 'Do you not know how to hunt with anything but nets?'  
 (c. 1000, *Ælfr Coll.* 62)

Being subject to reduction through rapid speech, it could even combine with some verbs, e.g., *ne wæs* 'not was' > *næs*, *ne wolde* 'not wanted' > *nolde*. But the new, phonologically fuller, *not* that replaced it followed the verb, as in (22):

- (22) ... that moves not him: though that be sick, it dies not.  
 (c. 1600, Shakespeare, *Henry IV* Part 2.II.ii.113)

Such differences in syntax between older forms and their replacements or renewals are often subject to word-order changes that are ongoing in the language, or may even contribute to them.

Renewal by a non-cognate item to effect semantic expressiveness probably underlies most examples of the development of innovative periphrasis in the process of word-order changes. This appears to be true of the development of periphrastic markers of modality, such as *will*, *shall*, and *must*, which convey more precise differences of meaning than the older subjunctive inflection, and the development of phrasal case markers such as *to* and *of*, which also tend to convey more differences than the earlier inflectional cases. Langacker has called periphrasis "the

major mechanism for achieving perceptual optimality in syntax” (1977: 105). One way of defining periphrasis is to characterize it as fulfilling the following criteria (Dietrich 1973): the meaning of the periphrasis is not deducible from the constituent elements; the periphrastic construction shows syntactic unity at some level of analysis, where it did not do so before; the new periphrasis competes paradigmatically with other morphologically relevant categories.

Once renewal occurs, the new form may itself be subject to grammaticalization and reduction, through rapid speech and routinization, as in the case of *not* > *n't*. This is one factor that makes grammaticalization a continuously occurring phenomenon. The question is when this renewal is understood to occur. When the same structure is renewed, some speak of “recursive cycles” of grammaticalization. Some think of the cycle as starting with reduction of a form, in extreme cases to zero, followed by replacement with a more expressive form (e.g., Heine and Reh 1984: 17; Lightfoot 1991: 171). This kind of model is extremely problematic, because it suggests that a stage of language can exist when it is difficult or even impossible to express some concept.

Rather than replace a lost or almost lost distinction, newly innovated forms compete with older ones because they are felt to be more expressive than what was available before. This competition allows, even encourages, the recession or loss of older forms. Textual evidence provides strong support for this view of coexisting competing forms and constructions, rather than a cycle of loss and renewal. The periphrastic future form existed in Late Latin long before the eventual loss of future *-b-* and its replacement by *-r-*. In contemporary French and other Romance languages, the inflectional *-r-* future is itself in competition with a more “expressive” periphrastic construction with *aller*, cf. *j'irai* ‘I will go,’ and *je vais aller* ‘I will/plan to go.’ Furthermore, when the syntactic structures of the older and newer forms differ, they may be used side by side in the same utterance (cf. French *ne va pas*, and Middle English *ne might not*). When the syntactic structure is the same, but the lexical items are different, alternate usages coexist, as in the case of *very* and *awfully*.

## 5.5 A synchronic result of unidirectionality: layering

As we have seen in the context of discussion of persistence and divergence, old forms may persist for a long period of time. The persistence of older forms and meanings alongside newer forms and meanings, whether derived by divergence from the same source or by renewal from different sources, leads to an effect that can be called “layering” or “variability” at any one synchronic moment in time. We turn now to some comments about this characteristic of grammaticalization.

Within a broad functional domain, new layers are continually emerging; in the process the older layers are not necessarily discarded, but may remain to coexist with and interact with new layers (Hopper 1991: 22). Layering is the synchronic result of successive grammaticalization of forms which contribute to the same domain.

In any single language there is always considerable synchronic diversity within one domain. Some of the most obvious cases are those where a full and a reduced form coexist, with related forms and only minimally different functions. An example is the coexistence in Classical Armenian of three demonstratives: *ays* 'close to first person,' *ayd* 'close to second person,' *ayn* 'close to third person,' and three articles *-s*, *-d*, *-n* (Greenberg 1985: 277). In such cases it is a reasonable hypothesis that the reduced form is the later form. In other cases a variety of different forms and constructions may coexist that serve similar (though not identical) functional purposes. A small fragment of the PDE repertoire of tense–aspect–modal indicators suggests the potential range involved:

- (23)
- |                                    |                             |
|------------------------------------|-----------------------------|
| a. Vowel changes in the verb stem: | <i>take, took</i>           |
| b. (Weak) alveolar suffix:         | <i>look/looked</i>          |
| c. Modal auxiliaries:              | <i>will take/shall take</i> |
| d. Have V-en:                      | <i>has taken</i>            |
| e. Be V-ing:                       | <i>is taking</i>            |
| f. Keep on V-ing:                  | <i>kept on eating</i>       |
| g. Keep V-ing:                     | <i>kept eating</i>          |
| h. Be going to V:                  | <i>is going to take</i>     |

(There are, of course, many more.) In cases like this it is a reasonable hypothesis that the most bonded forms have the longest histories in their present grammatical functions, and that the least bonded are the most recent.

Yet another example given comes from Estonian. Relative clauses in Estonian may be formed in two ways, one being a construction with a relative pronoun and a finite verb (24a) and the other with a participial verb and no pronoun (24b):

- (24)
- |    |   |                  |                 |               |               |
|----|---|------------------|-----------------|---------------|---------------|
| a. | Vanake  | silmitse-s       | kaua            | inimes-t      | kes           |
|    | old-man   | observe-PAST:3SG | for-a-long-time | person-PARTIT | REL           |
|    | sammu-s   | üle              | õue             | elumaja       | poole.        |
|    | go-PAST:3SG   | across           | courtyard:GEN   | residential   | building:ILL  |
|    | 'For a long time the old man observed the person who was going across the courtyard to the residential building.' |                  |                 |               |               |
| b. | Vanake  | silmitses        | kaua            | üle           | õue           |
|    | old-man   | observe.PAST-3SG | for-a-long-time | across        | courtyard:GEN |
|    | elumaja   | poole            | sammu-vat       | inimes-t.     |               |
|    | residential   | building:ILL     | go-PRES:PART    | person-PARTIT |               |

(Comrie 1981: 123–4)

The second type in (24b), the relative clause of which is constructed around a present participle, i.e., a non-finite verb, is literally something like ‘The old man watched for a long time the across the courtyard of the residential building going person.’ Such clauses are characteristic of a learned or archaic style (Comrie 1981: 134); the more usual way of forming relative clauses in Estonian is with a relative pronoun and a finite verb, as in (24a).

Typically, grammaticalization does not result in the filling of any obvious functional gap. On the contrary, the forms that have been grammaticalized compete with existing constructions so similar in function that any explanation involving “filling a gap” seems out of the question – there is no obvious gap to be filled. We saw that in Ewe, verbs of saying evolved into new complementizers at the same time as older complementizers – themselves grammaticalized verbs of saying – were still available. Latin periphrastic futures of the kind *cantare habet* ‘he has to sing > he will sing’ coexisted at one stage with morphological futures of the type *cantabit* ‘he will sing,’ and eventually replaced them.

During any phase of coexistence there are some contexts in which the two (or more) types in question involve a clear pragmatic difference. There are other contexts in which the choice between them is less clear with respect to pragmatic difference. Frequently we find that one of the competing forms predominates (specialization), and eventually extends its range of meanings to include those of the construction which it replaces. In this way, historically continuous speech communities may, through repeated renewals, retain categories (such as the future tense) for a considerable length of time while other speech communities have never developed them.

Quite often the newer layers of functionally similar constructions are symptomatic of more global adjustments. As indicated at the end of Section 3.4.1, Estonian, which (like the other members of the Balto-Finnic branch of Uralic) is a language historically of the OV type, has become thoroughly permeated with VO features from its Germanic and Slavic neighbors. The two different ways of forming relative clauses exemplified in (24) are part of this change in type. The older type, in which a participial clause precedes the head noun, is characteristic of OV languages. The newer type, with a finite verb and a relative pronoun, is characteristic of VO languages.

## 5.6 Frequency

As we have seen in Section 5.3.2, statistical evidence for the frequency of forms is a valuable tool in providing empirical evidence for unidirectionality. Textual frequency has long been recognized informally as a concomitant of

grammaticalization, and it has recently assumed an important place in the empirical study of how lexical forms move into grammatical roles.

It is customary to distinguish two kinds of frequency, known as “type frequency” and “token frequency.” Type frequency refers to the number of items that are available to a particular class of forms. For example, the number, and therefore the type, frequency of English nouns that form their plural in *-s* is very high, while that of English nouns whose plural is in *-en* is very low; the type frequency of English verbs that form their past tense with a suffix *-ed* such as *walked*, *stopped* is very high, while the number of English verbs that form their past tense by changing a stem vowel from [ai] to [o] such as *drive/drove* is very low. Most attention to frequency, however, has been focused on token frequency, the number of times a particular form such as *I guess* or *you know* occurs in texts, or the changes in frequency of forms or constructions over time, such as *know not* versus *do not know*.

The kinds of changes that are most deeply characteristic of the grammaticalization of lexical forms – semantic fading, phonological reduction, positional fixing, erasure of word boundaries – are inseparable from the absolute frequency of the forms and the frequency with which they cooccur with other forms. The repetition of forms may lead to their “liberation,” or “emancipation” (Haiman 1994), from their earlier discourse contexts and to increased freedom to associate with a wider variety of other forms, such as when French *pas* ‘step’ used as a negative reinforcer widens its range from physical movement (‘doesn’t walk a step’) to all verbs (‘doesn’t believe (a step)’, etc.). Combinations of forms that occur more frequently tend to be automatized, that is, they are stored and uttered as a block (Boyland 1996), such as *take a chance and*, *get set to*. Because the content of these automatized combinations is predictable, they are uttered more quickly; they are “streamlined” (Bybee and Thompson 1997), the parts of the combinations tend to be slurred and reduced in prominence (Browman and Goldstein 1992), as in *wanna* for *want to*, *betcha* for *I bet you*. At the same time their semantic and functional content becomes vaguer, that is, they can be used in a wider variety of contexts (Heine 1993; Krug 2001; Boyland 2001). Forms that often occur adjacent to one another may even become fused into a single word, for example as stem and clitic (Bybee 1995; 2001), such as *we’ll*, *you’re*.

### 5.6.1 Frequency effects

Bybee and Thompson (1997) identify two major effects of frequency of forms (token frequency) that are especially relevant to grammaticalization. They refer to these two effects as the Reduction Effect and the Conservation Effect. The Reduction Effect points to the fact that frequently used forms are eroded at

a faster rate than less frequently used forms. This effect is manifested in such familiar English contracted forms as *I'll*, *won't*, *you're*, etc. It is also seen in the lost autonomy of the infinitive marker *to* in such forms as *wanna*, *gotta*, *gonna* (from *want to*, *got to*, *going to*) as well as *hafta* (have to), [spostə] (*supposed to*) and [yustə]/[yustə] (*used to*). All of these forms are in varying degrees of grammaticalization as modal auxiliaries (see Krug 2001), and all display both a phonetic and a functional contrast with forms in which the *to* has remained autonomous, as in *We are going to* [\*gonna] *the market*, *She is supposed to* (sΔpozɔ tu/\*[spostə]) *be fabulously rich* (where *supposed* is paraphrasable as *assumed* – not all speakers make this distinction, however.) The contracted forms have a higher frequency than the full forms and are also the more casual register forms.

The Conservation Effect correlates frequency with the retention of irregular forms. Forms that are isolated in a morphological paradigm will tend to conform to the paradigm unless they are especially frequent. Obvious examples of the conservation of highly frequent forms include suppletion, such as *good/better*, *bad/worse*, *go/went*, as well as irregular forms like *strike/struck*. The highly frequent verbs *sleep* and *keep* retain their irregular past-tense forms *slept* and *kept*, whereas the less frequent verbs *creep*, *weep*, and *leap*, with their irregular past tenses *crept*, *wept*, and *leapt*, tend to be assimilated into the regular paradigm and to be produced as *creeped*, *weaped*, and *leaped*.

In syntax, the Conservation Effect of high frequency is seen in the behavior of nouns in contrast to pronouns. Pronouns, which are of very high frequency, retain the case distinctions that have been lost in nouns (*he*, *him*; *she*, *her*, etc.), and may preserve older positional features (for example, in English possessive pronouns must precede the possessed noun, as in *her uniform*, whereas lexical noun possessives can precede or follow the possessed noun: *the officers' uniforms* or *the uniforms of the officers*). The high frequency verbs *be* and *have* and the auxiliaries similarly keep conservative syntactic characteristics that are no longer found in full lexical verbs. In English, *be*, *have*, and auxiliaries, unlike lexical verbs, can invert directly with the subject in forming questions, as in *Have you forgotten anything?* (contrast the ungrammatical *\*Forgot you anything?*). They also form a negative with *not* rather than *do not*, as in *They are not tired*, *They have not left yet*. Both of these characteristics that are in PDE restricted to *be*, *have*, and auxiliaries were once found in lexical verbs also.

### 5.6.2 *Synchronic studies of frequency*

There are both synchronic and diachronic empirical studies of frequency. Quantitative empirical studies usually deal with percentages rather than absolute numbers, and compare either different but functionally similar forms, or the same form in different identifiable contexts.





and the contemporary period, Laury ascertained that the use of the demonstrative *se* (and its case forms) is becoming increasingly obligatory. In the direct object role, for example, the number of lexical nouns that were accompanied by *se* rises from 49% in the nineteenth century, to 60% in the 1930s, to 74% in the modern language. Although Finnish is often characterized even in linguistic descriptions as a language that lacks a definite article, Laury notes that the use of *se* is entirely comparable with the use of the definite article in languages where its existence is universally recognized.

For diachronic studies, access to texts of comparable genres over a fairly long period is needed. It is only in a few languages that we are fortunate enough to have this kind of textual history. And it is for only a small subset of these languages that we have any statistical studies at all of the development of grammatical items. Sometimes a slowly emerging construction can be seen to take over very rapidly, perhaps at the expense of competing constructions, as in the case of *do*-support discussed by Kroch (1989a,b; see also Stein 1990a). Dramatic changes of this type are often discussed in terms of S-curves, that is, gradual beginnings, rapid spread, and gradual tapering off. To date too few historical studies have been conducted to determine to what extent S-curves are the product of multiple correlated factors contributing to morphosyntactic change or of individual localized changes, but it seems likely that they result from the former. There is a need for additional reliable statistical studies of a variety of phenomena in which early grammaticalization appears to be involved. Among such studies, in addition to Hook (1991), there are Givón (1991a) on the development of relativizers, complementizers, and adverbial clause markers in Biblical Hebrew; the large number of statistical studies of grammaticalization of case-related phenomena (inflections, prepositions, etc.) in Spanish by Company may be illustrated by her recent work on the spread of prepositions (Company 2002); studies on developments in English include Hopper and Martin (1987) on the indefinite article, Kytö (1991) on the auxiliaries *may/might* and *can/could*, Hundt (2001) on the *get*-passive, Mair (1997, Forthcoming) on *be going to*, *be V-ing*, *seeing that* and other constructions. Statistical studies of grammaticalization changes that appear to be occurring in current speech situations include Givón (1991b) on verb serialization in four languages of Papua New Guinea, and Thompson and Mulac (1991) on parenthetical *I think* in English (discussed below in Section 7.5.3).

## 5.7 Counterexamples to unidirectionality

As has been stated frequently in previous chapters, there is nothing deterministic about grammaticalization and unidirectionality. Changes do not have



to occur. They do not have to go to completion, in other words, they do not have to move all the way along a cline. A particular grammaticalization process may be, and often is, arrested before it is fully “implemented,” and the “outcome” of grammaticalization is quite often a ragged and incomplete subsystem that is not evidently moving in some identifiable direction. This observation is in contrast to historical argumentation of a deterministic kind such as is illustrated by: “Before a change is manifested little by little, its end result is already given in the underlying representations” (Andersen 1973: 788). Taken in its strong sense as presupposing a predetermined outcome, even a “goal” for grammaticalization, such statements suggest that once a change has started, its progress is inexorable. However, this hypothesis is not empirically supported. What is supported is the fact that there are strong constraints on how a change may occur and on the directionality of the change, even though we do not yet fully understand all the factors that motivate this directionality.

Therefore the fact that changes do not show stages that can be plotted on a grammaticalization cline does not entail that they are necessarily counterexamples to grammaticalization. Nichols and Timberlake (1991), for example, point out that in the history of Russian there have been changes in the uses to which the instrumental case has been put that are akin to grammaticalization in so far as they involve the coding of grammatical relationships, but are unlike grammaticalization in its prototypical directional sense, in so far as they simply demonstrate a shift in the way relatively stable grammatical networks operate. In Old Russian, the instrumental was allowed only with nouns expressing status or role that could change over time (e.g., ‘tsar,’ ‘secular leader,’ ‘nun’), and only in contexts of entering that status (inception), or continuing in it for a period of time. Later Russian, however, virtually requires the instrumental with such nouns referring to status or role; also quasi-status nouns (agentive nouns such as ‘bribe-giver’) can now allow the instrumental in contexts of durative aspect. There is certainly no case of “more > less grammatical” here. However, as the authors themselves say: “the overall effect has been to fix usage in one domain and develop variation in another” (Nichols and Timberlake 1991: 142). Rather than being a counterexample to the unidirectionality of grammaticalization, the Russian instrumental is an example of rule generalization over a lengthy period of time (about 1,500 years). It also illustrates the potential longevity of certain types of grammatical organization, and suggests that persistence is not limited to the meanings of grammatical items, but is also evidenced by purely grammatical inflections.

As indicated at the beginning of this chapter, the hypothesis of unidirectionality has been a topic of vigorous debate in the last decade. On one end of the spectrum are very strong claims about unidirectionality. The strongest is that all grammaticalization involves shifts in specific linguistic contexts from

lexical item to grammatical item, or from less to more grammatical item, and that grammaticalization clines are basically irreversible (see, e.g., C. Lehmann 1995 [1982]; Haspelmath 1999a). Robust though the evidence of unidirectionality is, nevertheless it cannot be regarded as an absolute principle. Some counterexamples do exist. Their existence, and their relative infrequency, in fact help define our notion of what prototypical grammaticalization is.

Furthermore, a potential problem for strong versions of the unidirectionality hypothesis is that its logical conclusion is that grammatical morphemes cannot arise without lexical origins. To date we do not have compelling evidence that grammatical items arise full-fledged, that is, can be innovated without a prior lexical history in a remote (or less remote) past. Some grammatical items, such as the Indo-European demonstrative *to-*, show enormous longevity, and we cannot look back into their prehistory to find a lexical origin. Proponents of the strong unidirectionality hypothesis would have to argue that *to-* originated in some currently unknown lexical item. We do not at this stage of our knowledge know what that item was. But neither do we know that there was none, or that there might theoretically have been none. (Indeed, a lexical history of demonstratives has been proposed by Frajzyngier (1996b) for Chadic languages, and of definite articles in Siouan by Rankin (1976).) We must leave for future empirical study the question whether grammatical items can arise fully formed, and if so under what circumstances. In any event, we do not need to be concerned as is Lass (2000) that this logical conclusion would entail violation of the uniformitarian principle, since it would require postulating a language state without grammatical items. On the assumption that linguistic evolution was gradual, such a language state is implausible at least for language at the evolutionary stage we have access to.

On the other end of the spectrum from strong claims about unidirectionality are arguments that there are so many counterexamples to unidirectionality that it cannot be considered a defining characteristic of grammaticalization (e.g., Janda 1995, 2001; several articles in Campbell 2001a). In a chapter entitled “Deconstructing grammaticalization” Newmeyer has proposed that “there is no such thing as grammaticalization,” at least as a phenomenon independent of other changes (1998: 226). Many of the researchers who argue from this perspective are concerned that, even if unidirectionality were irreversible, including unidirectionality in the definition (as we have) makes the claim of unidirectionality uninteresting from a theoretical point of view (see Norde 2001 for detailed discussion). Newmeyer (1998), Campbell (2001b), Janda (2001), Joseph (2001), and others use this argument to claim that, although there is extensive evidence for regularly recurring directional changes, grammaticalization should not be thought of as a “theory,” in the sense of an explanation of a subject of study. Instead, they suggest, it should be

thought of as the descriptive name of a frequently occurring epiphenomenon that can be explained by other factors that occur in language change anyhow. Such other factors are variously thought of as reanalysis (I. Roberts 1993a) or “downgrading reanalysis, appropriate semantic change, and phonetic reduction” (Newmeyer 1998: 260).

While such criticisms need to be taken very seriously, several important characteristics of the study of grammaticalization usually get lost in the discussion. One is that grammaticalization is a functionalist theory – a theory about the interaction of language and use; the questions posed in functional and formal theories are not identical (Croft 1995; van Kemenade 1999b). Functionalist theorists seek to account for the relationship between language and use, and for local, gradient phenomena in language. On the other hand, formal theorists have sought until recently to ask about invariant properties of the mind, and about structure independent of context and use; however, at the time of writing a fundamental shift is occurring here too with interest developing in accounting for variation in grammar, as in the literature on Optimality Theory (cf. Archangeli and Langendoen 1997; A. Prince and Smolenski 1997), and most especially stochastic Optimality Theory, which is quantitative (cf., e.g., Boersma and Hayes 2001; Bresnan, Dingare, and Manning 2001). Another point is that grammaticalization is a theory with dual prongs: diachronic and synchronic. From the diachronic perspective, since it is a theory of the relationship between structure and use, not of change in grammar, the fact that many of the changes discussed are tendencies, not rules that operate 100 percent of the time, is irrelevant. Use is usually variable, only occasionally categorical. Newmeyer, however, explicitly says: “I take any example of upgrading as sufficient to refute unidirectionality” (Newmeyer 1998: 263). From the synchronic perspective, too, it is a theory of the relationship between structure and use, and of emergent properties of language. Therefore, characterizing grammaticalization exclusively as an epiphenomenon of reanalysis or of other factors in change fails to address a large subset of the phenomena under consideration in studies of grammaticalization.

Many alleged counterexamples have been included in a discussion of terms that cover very disparate phenomena, such as “degrammaticalization,” “lexicalization,” and “exaptation.” Degrammaticalization is probably the most widely used of these terms, and indeed is sometimes used as a cover term for the other two, and several others not discussed here (for details, see Heine Forthcoming). Despite its name, as Heine points out, “degrammaticalization” is in fact used for many prototypical cases of end-stage grammaticalization, including development into an only partially or totally unanalyzable segment of a morpheme (cf. *h* in Meillet’s example of *heute* < OHG *hiu tagu* ‘this day’), and also for complete loss (see Section 6.5).

However, the term “degrammaticalization” is also used for changes that violate schematic clines like:

phrases/words > non-bound grams > inflection  
(Bybee, Perkins, and Pagliuca 1994: 40)

and “upgrading” of erstwhile inflectional or derivational forms. We will discuss some upgrades at the end of this section. Here we comment briefly on issues in lexicalization and exaptation.

Two main strands of research on lexicalization are relevant here (see Brinton 2002, Traugott Forthcoming, for detailed discussion of the many ways this term has been used). One strand concerns changes that are more properly called “conversion” and what are probably the most often cited putative counterexamples to grammaticalization: changes involving the use of grammatical items, including derivational morphemes, categorially as nouns or verbs, e.g., *to up the ante*, *that was a downer*, *his uppers need dental work*, *I dislike her use of isms* (see, e.g., Ramat 1992, 2001). Similarly, in German and French the second-person-singular familiar pronouns *du* and *tu* are “lexicalized” as the verbs *duzen* and *tutoyer*, respectively, both meaning ‘to use the familiar address form.’ Changes of the type Prep. *up* > V *up*, and most especially of the type derivational morpheme *-ism* > N *ism*, typically involve a quotation or mention of some kind.<sup>7</sup> These kinds of changes are instantaneous – one can take any element of language, including the letter with which it is graphically represented or to which it is iconic, and use it lexically, e.g., *F-word*, *T-square*, *bus* (ultimately from the Latin dative plural *-bus* in *omnibus* ‘with all’), and use it like a noun; given certain semantic constraints, one can take any noun and instantaneously convert it into a verb (e.g., *to calendar*, *to typo*); one can also take phrases like *forget-me-not* and acronyms like *laser* (‘light amplification by the stimulated emission of radiation’) (Norde 2001: 236). Innovations of this type may or may not spread to other speakers, just like other changes. These changes are instances of recruitment of linguistic material to enrich the lexicon and have virtually nothing in common with grammaticalization.

However, other examples of lexicalization do have much in common with grammaticalization. For example, Lipka (1990) defines lexicalization “as the phenomenon that a complex lexeme once coined tends to become a single complete lexical unit, a simple lexeme,” a process often call “univerbation.” Lipka goes on to say: “Through this process it loses the character of a syntagma to a greater or lesser degree” (1990: 95). Erstwhile compositional forms like *garlic* (< *gar* ‘spear’ + *leac* ‘leek’), *halibut* (< *halig* ‘holy’ + *butte* ‘flat fish’), *arise* (< ‘on’ + ‘rise’) now function as monomorphemic, non-compositional elements. Since these items belong to the major classes N, V they are considered to be lexical. Likewise *already* derives from *all* + *ready*, *hafta* from *have to*, and *sorta* from *sort of*. They belong

to minor classes – aspectual markers, modals, degree words – and are therefore considered grammatical. Univerbation has occurred in all of them. Furthermore, in many languages what originate as phonologically predictable alternations may eventually be morphologized (e.g., *foot–feet* is the modern reflex of an earlier stage when the plural was *fo*t*-i*; phonetically, the *o* was fronted before the *-i*, and when the *-i* (plural marker) was lost for phonological reasons, the fronted vowel remained as the marker of plurality). These examples and others show that there is a point at which grammaticalization and lexicalization may intersect (see, e.g., Hågège 1993; C. Lehmann 1989a, 2002; Wischer 2000). Indeed, as Lehmann has pointed out, lexical phrases such as *as long as* must first be lexicalized (frozen) before grammaticalization can set in. In many ways lexicalization in the sense of univerbation and grammaticalization are parallel and both “constrain the freedom of the speaker in selecting and combining the constituents of a complex expression.” They “are not mirror images” (C. Lehmann 2002: 15).

Another term that has many interpretations and has been seized on as evidence for counterexamples to grammaticalization is what Lass (1990) called “exaptation,” a term he borrowed from biology to account for what he saw as “the opportunistic co-optation of a feature whose origin is unrelated or only marginally related to its later use” (Lass 1990: 80) as a result of “*bricolage*, cobbling, jerry-building; . . . recycl[ing], often in amazingly original and clever ways” (Lass 1997: 316). The “unrelatedness” is the key to notions that exaptation is a counterexample to unidirectionality. An example he gives is the reanalysis of a Dutch adjectival number–gender agreement marker as a marker of a subclass of morphologically complex attributive adjectives. At about the same time, Greenberg (1991) used the term “re-grammaticalization” to refer to similar phenomena, including changes in the late development of demonstratives. Demonstratives frequently give rise to definite articles (“Stage I”), and then expand their range to include all specific nouns, whether definite or indefinite (“Stage II”). At this stage the article often becomes morphologized as a prefix or suffix on the noun (cf. *The Mississippi*), but it retains some of its article-like functions, in, for example, not being used in generic expressions (compare English *at school*, *on foot*, etc.). In the next stage (“Stage III”), the use of the affix spreads to virtually all nouns, including proper names. This new distribution leads to a situation in which the former demonstrative assumes new functions having to do with a form’s status as a member of the category “noun,” for example they can be used to derive nominalizations, or to mark pluralization (Greenberg 1991: 304–5). Stages I and II can be considered classic cases of grammaticalization, but not so the third stage, according to Greenberg, because there is renewal of an old, marginalized function and “disjunctive” semantic change (1991: 301). One problem with both Lass’s and Greenberg’s examples is that although the changes may be semantically and functionally unexpected, a

detailed study of the discourse contexts for the changes in question is not cited, and therefore it is difficult to assess whether there was or was not semantic and functional discontinuity in the history of the change.

Not all cases of reuse of morphological material for “opportunistic” reasons or “novel” purposes have been seen to pose problems for grammaticalization. For example, Vincent (1995) analyzes the development of the Romance definite article and clitic object (e.g., French *le*) out of Latin *ille* ‘distal deictic pronoun’ as an instance of both grammaticalization and of exaptation. In his view, it demonstrates grammaticalization because there is loss of segmental structure. At the same time it demonstrates exaptation or natural selection after case loss of “discarded variants to ensure that the necessary functions have clear phonological expression” (Vincent 1995: 444). Indeed, as reconceptualized by Croft within the framework of a typology of reanalysis as “hypoanalysis,” exaptation and regrammaticalization are shown to be far from discontinuous semantically or functionally: “[i]n hypoanalysis, the listener reanalyzes a contextual semantic/functional property as an inherent property of the syntactic unit. In the reanalysis, the inherent property of the context . . . is then attributed to the syntactic unit, and so the syntactic unit in question gains a new meaning or function” (Croft 2000: 126–7).

Norde (2001) has interestingly expanded the notion of exaptation in a different way to include such well-known and extremely challenging phenomena as the replacement by a clitic of inflectional genitive in English, Swedish, Danish, and the variety of Norwegian known as Bokmål (an upper-class variety of Norwegian influenced by Danish), the histories of which have been widely discussed but about which there is little agreement (see, e.g., Janda 1980; Norde 2001, and the extensive references therein). For example, Old English inflectional genitive as in (26) shows concord within the possessive NP (Ecgrith the king):

- (26)    ðæs        cyning-es    sweoster    Ecgfrith-es  
          the:GEN   king-GEN   sister:NOM   Ecgfrith-GEN  
          ‘the sister of Ecgrith the king’                    (c. 1000, Aelfric Hom 11, 10 87, 215)

but three hundred and fifty years later we find a clitic in similar constructions:

- (27)    the god of slepes heyr  
          ‘the god of sleep’s heir’                                    (c. 1368, Chaucer, Book of Duchess 168)

The use of the clitic spread gradually to increasingly more varied contexts, and is not a case of instantaneous change, but of generalization across types of NP, including pronouns (cf. *anyone else’s cat*) (see Allen 1997). It is also not a case of significant semantic–functional difference. From these perspectives, it is very much like grammaticalization. On the other hand, the rise of the *-s* clitic does on most analyses show counterevidence for the assumption that there is unidirectionality

in grammaticalization from clitic > affix and not vice versa (see also examples in Janda 1995 and Luraghi 1998).

Another much-cited example of a violation of unidirectionality in grammaticalization has already been mentioned in Section 3.5: the development of an independent “affirmative adverb” *ep* in Estonian (Campbell 1991). Originally the clitic \**-pa* ‘emphatic,’ it underwent vowel harmony in harmony-triggering contexts, as did another clitic \**-(ko)-s* ‘(question)-informal speech.’ After a regular sound change involving the loss of final vowels, the context for vowel harmony with these clitics was lost, the clitics’ morpheme boundaries were lost, and they ceased to be analyzable as independent morphemes. They were reinterpreted as *-ep* and *-es* respectively and “lexicalized” as independent grammatical words (Campbell 1991: 292). Unlike cases of conversion, they do not involve recruitment to a major class, hence we consider them to be legitimate counterexamples to independent word > clitic. Another counterexample to unidirectionality that has been cited is the development in Pennsylvania German of the rounded form *wotte* of the preterit subjunctive *welle* ‘would < wanted’ into a main verb ‘wish, desire’ (Burridge 1998). The latter appears to be the only example cited to date of a mirror-image reversal. As Norde (2001) and Heine (Forthcoming) point out, most alleged counterexamples do not reverse prior history exactly.

The history of *wotte* exemplifies one reason for occasional counterexamples to unidirectionality: preemption of a morphological element for the ideological purposes of the community. Burridge proposes that the lexicalization (more strictly conversion) of *wotte* is a kind of euphemism – avoidance of expressing wish too bluntly, arising from Mennonite religious principles. Another reason for the development of several counterexamples to unidirectionality of this sort is the development of “adaptive rules” (Andersen 1973). A language user who has developed a new rule is likely to find that at certain points Output 2 does not match Output 1. Therefore the individual may be misunderstood, or ridiculed, etc. Such an individual may develop “cover-up” rules that are not integrated into his or her grammar, but which in essence permit output analogous to that of users of Output 1. Hypercorrection (overuse of an item considered to be socially or stylistically salient) is of this kind, as is discussed at length in Janda (2001). For example, the speaker who has not acquired a *who–whom* distinction may attempt to accommodate to users who do make such a distinction and produce utterances such as *Whom did you say was looking for me?* In a study of such rules, Disterheft (1990) suggests that hypercorrections are particularly often found in writing. She cites Stein’s (1990b) study of the replacement in the fifteenth century of the third-singular present-tense marker *-th* by *-s*. The *-s* form spread gradually in different syntactic and phonological environments and increased in frequency until c. 1600. However, just before the turn of the century, *-th* increased in frequency, dropping



off again in the seventeenth century. The resurgence of *-th* is evidence, it is argued, for an adaptive rule which led to overuse of the older form in a written Standard developed from Chancery English owing to association of the *-th* with “high style.” If so, this (and other sociolinguistic data discussed in Labov 1972) suggests that adaptive rules may for the most part be typical of adult rather than child language users. As Disterheft points out, they make the effects of abductive change (i.e., reanalysis) hard to detect. Hence they may give the impression of greater gradualness of change than was actually the case. Furthermore, they may obscure (or even divert) the natural path of change, and so may lead to counterexamples to unidirectionality.

When we review the literature on counterexamples to grammaticalization, a striking fact emerges. They are sporadic and do not pattern in significant ways. However, at the level of a change schema, that is, at the level of linguists’ idealizations and generalizations over changes, unidirectionality is extremely robust cross-linguistically (Andersen 2001; see also Dahl 2000: 13), whether specified in terms of clines, or of claims such as van Kemenade’s that the final stage of grammaticalization is “base-generation as a functional head” (1999b: 1001).

## 5.8 The use of unidirectionality in reconstruction

Counterexamples such as those cited in Section 5.7 should caution us against making uncritical inferences about directions of grammaticalization where historical data are not available, since the possibility of an anomalous development can never be absolutely excluded (Hagège 1993; Tabor and Traugott 1998; Newmeyer 1998). Proponents of the strong version of the unidirectionality hypothesis have argued that one can do reconstruction of non-attested stages of a grammatical form. For example, C. Lehmann has said:

Given two variants which are related by the parameters of grammaticalization . . . we can *always* tell which way the grammaticalization goes, or *must have gone*. The significance of this for the purposes of internal reconstruction is obvious.

(C. Lehmann 1995 [1982]: 19, italics added)

However, it is very important to recognize that, given the number of counterexamples, such a reconstruction can only be a hypothesis. The only viable way of approaching reconstruction is via weaker statements such as:

We would . . . expect grams that are older – i.e., that have undergone more development – to be closer to the stem, more fused and shorter or more reduced in segmental material than younger grams of equal relevance.

(Bybee, Pagliuca, and Perkins 1991: 33)



Too confident a use of assumptions about unidirectionality can lead to wrong conclusions, even with respect to attested data. For example, as shown in Tabor and Traugott (1998), in discussing the “grammaticalization scale” of verbal nouns (*gerunds*), C. Lehmann cites:

- (28) a. John’s constantly reading magazines  
 b. John’s constant reading of magazines  
 c. \*the (constantly) reading magazines  
 d. the constant reading of magazines (C. Lehmann 1995 [1982]: 62)

and comments “we have two stages of our grammaticalization scale embodied in the English *POSS-ing* construction. At the latter stage, the nominalized verb has assumed all the relevant features of a noun; *-ing*-nominalizations are even pluralizable” (C. Lehmann 1995 [1982]: 64). It is actually not clear whether Lehmann is making a synchronic or diachronic claim here, because he usually uses the term “scale” for synchronic clines, but the references to “stages” suggests he is here making a diachronic claim. In any event, the prediction is diachronically incorrect: types (28b) and (28d) are historically earlier than type (28a).

## 5.9 Conclusion

The evidence is overwhelming that a vast number of known instances of the development of grammatical structures involved the development of a lexical item or phrase through discourse use into a grammatical item, and then into an even more grammatical item, and that these changes were accompanied by de-categorialization from a major to a minor category. Typologically, changes of this kind are widespread and show systematic patterning. Counterexamples are sporadic and only rarely cross-linguistically attested; the rise of clitic possessive in English, Swedish, and Norwegian Bokmål is unusual in this regard, but we should note that the languages are related, and the histories are not identical. Reconstructions based on an assumption of unidirectional match (“isomorphism”) between cline and direction of change in a specific instance should be framed as testable hypotheses.