TOWARD A MORE RESTRICTIVE CHARACTERIZATION OF GRAMMATICALIZATION

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1. Introduction

A great number of papers and books have been published since the pioneering work by Meillet (1912) forged the notion of grammaticalization. Insightful surveys and analyses are found in studies such as Lehmann (1995), Hopper (1991), Traugott and Heine (1991), Fischer et al. (2000), Hopper and Traugott (2003), Akimoto ed. (2001), Akimoto et al. (2004), and Gelderen (2004). Despite the massive publication of these studies, we should give a special status to the book under review. This is because it is the first serious study of grammaticalization within the theoretical framework of the Minimalist Program.¹ The argumentation in the book is well organized and its coauthors make consistent claims throughout the five chapters, in addition to the Introduction, by citing interesting examples of grammaticalization from many European

* I have benefited from suggestive discussions with Sumio Shimizu, Sumio Yoshitake and Tomoyuki Tanaka while I was reading the book under review and writing the present review article. I would also like to thank two anonymous *EL* reviewers for their valuable comments. The remaining inadequacies and errors are of course mine.

¹ Gelderen (2004) also refers to some principles of the Minimalist Program, but the overall theoretical framework is not necessarily important to her study.

languages, including Latin and Greek. Putting many theoretical and empirical details aside, we might say that there are four important points made in the book. First, grammaticalization is caused or accompanied by morphological reduction and/or semantic bleaching of words involved. Second, it leads to categorial reanalysis of the words affected. Third, it is in general a process whereby an item in a lower position in an X-bar theoretic structure is relocated in a higher position; grammaticalization is directed upward. Fourth, it results in structural simplification.²

However, there seem to be some examples of grammaticalization that are not compatible with the four points made by the coauthors. We put forth the following four claims in the present review. First, semantic changes, such as semantic bleaching, rather than phonological or morphological reductions of words, whether lexical or functional, are the causes of grammaticalization, and phonological reductions are usually resultant phenomena. Second, although there are instances of grammaticalization in which categorial reanalysis does not take place in an earlier stage, it is a critical characteristic of grammaticalization, as argued by the coauthors. Third, at least some instances of grammaticalization are not directed upward, especially when an item in a higher clause is restructured into a lower clause. Fourth, the notion of structural simplification proposed in this book is untenable or infeasible, as it stands.

This book deals with 18 cases of grammaticalization altogether, only two of which are from English: the historical developments of modal auxiliaries and the infinitive *to*. The other examples are drawn from European languages other than English. Here we focus on the English examples and related examples from other languages, and add some examples that are not discussed in the book to see if they fit in with the coauthors' central claims.

2. Characteristics of Grammaticalization

The general conception of grammaticalization that has recurrently appeared in the literature is rather clear. It is stated by Hopper and

² The term structural simplification is used here in the sense defined in Longobardi (2001), to which we return below.

Traugott (2003: xv), for example, that “we defined grammaticalization as the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, continue to develop new grammatical functions.” In most studies which adopt the standard traditional approach, it is assumed that grammaticalization proceeds along the sequence of changes in (1), which is often called a cline.

- (1) content item > grammatical word > clitic > inflectional affix
(Hopper and Traugott (2003: 7))

This sequence suggests that grammaticalization is a historical process whereby analytic forms gradually change to synthetic ones, and phonological reduction of lexical items is the most transparent symptom of grammaticalization. It might be relevant to note that such phonological reduction is happening even in a language like present-day English which is highly analytic and prefers periphrastic forms to synthetic ones. Let us consider the examples in (2) cited from Hopper and Traugott (2003).³

- (2) a. Let us go (i.e., release us).
b. Let's go to the circus tonight.
c. Lets give you a hand (i.e., let me give you a hand.)
d. Lets you and him fight. (Ibid.: 10–11)

Here the personal pronoun *us* is an independent free morpheme in (2a). Interesting are the three examples in (2b, c, d). We might say that it

³ Since the gradual change in (2) is not common in English, it might be objected that (2) is simply an exceptional case which does not have to be classified as a change of cline type. Considering the facts that *let's* and *lets* are phonologically identical, virtually indistinguishable, in spoken English, and the *s* of *lets* can not necessarily be regarded as an affix, we have to be very careful in claiming that (2) is a change of cline type. It seems to me, however, there is no denying the possibility that English also follows a diachronic “pathway” along which linguistic forms evolve in general.

Incidentally, if the genitive marker *-s* was derived from the *his*-genitive in early ModE, as argued in Taylor (1996: 128), who depends on Baugh and Cable (1978), the development of the genitive marker could be another English example of the cline type of grammaticalization. One might object that the genitive marker has not yet developed into an affix in this language. However, genitive forms such as *mans shop*, *St Pauls*, *Harrods*, etc., which do not bear the apostrophe, could be precursors of the genitive marker as affix. See Declerck (1991: 258), for a deeper discussion. The reader is referred to Rosenbach (2002) for an overall discussion on the origin of *-s*, including arguments against the view mentioned here.

is a clitic on *let* in (2b) and an affix on *let* in (2c, d). Hopper and Traugott state that the continuous phonological reduction is accompanied by gradual semantic changes of *let* or the whole construction. In (2a) the understood subject is 'you,' so this construction is often called second-person imperative and *us* is interpreted as the object of *let*. (2b) is sometimes referred to as "adhortative," or first-person imperative by Quirk et al. (1985: 829), and the understood subject of *let* is 'I.' Hopper and Traugott note that this sentence means something like 'I suggest that you and I ...' and the cliticized *us* is the subject of *go* rather than the object of *let*. In very colloquial English *let's* has been spreading to the first-person singular, and a kind of affixation of *us* often happens, as in (2c). Furthermore, *lets* is extending beyond the first person subject of the dependent verb, as in (2d).

The coauthors of the book under review do not deny the traditional conception of grammaticalization and the existence of a cline like (1). They also emphasize the importance of semantic change which is observed in most examples cross-linguistically. It is well known that grammaticalized words usually are subject to the semantic change which is known as semantic bleaching. Both phonological reduction and semantic bleaching have been regarded as causes or results of grammaticalization in the literature. But since few English examples show the phonological symptom of grammaticalization, if we put too much emphasis on it, we will run the risk of arriving at a rather ridiculous conclusion that grammaticalization is a rare phenomenon in English, and presumably many other languages.

The coauthors of the book are more interested in a covert aspect of grammaticalization: categorial reanalysis of a lexical item into a functional head and further reanalysis of the functional head into another functional head. Therefore, we should keep in mind at least the following three processes in conducting a study of grammaticalization.⁴

- (3) a. phonological or morphological reduction
- b. semantic bleaching
- c. categorial reanalysis

⁴ We cannot enter into discussion on other important processes associated with grammaticalization, such as layering, persistence, divergence, specialization, subjectification, renewal, etc. For inspiring introductory discussions on them, the reader is referred to Akimoto et al. (2003).

It can be said that by putting emphasis on categorial reanalysis, the coauthors provide us with an innovative picture of grammaticalization. They also emphasize that as opposed to other historical changes, grammaticalization is characteristically cyclic, in that “once Y has been reanalysed as X, it can further be reanalysed as an even higher functional head Z (p. 202).” We will return to a more detailed discussion on differences between grammaticalization and other historical changes in section 8.

There is no doubt of the importance of categorial reanalysis, but it might be in order here to point out a case in which it has not yet happened or is very difficult to discover.

- (4) a. Bill is going to go to college after all.
b. Bill’s gonna go to college after all.
- (5) a. Bill’s going to college after all.
b. *Bill’s gonna college after all.

(Hopper and Traugott (2003: 1))

Hopper and Traugott (2003) observe that *be going to* in (4) is more grammaticalized than that in (5) both semantically and morphologically, or even syntactically.⁵ While the interpretation of immediate future is very conspicuous in (4), it is not so conspicuous in (5). Conversely, while *go* in (5) still preserves the original meaning of concrete locomotion, it has almost lost the meaning in (4). In other words, *go* in (4) is semantically more bleached than the one in (5). Turning to the morphological aspect, while the three morphemes, *go*, *-ing*, and *to*, cannot be reduced to *gonna* in (5), this reduction is allowed in (4), implying that there is no longer a phrasal boundary between *-ing* and *to* in (4). Based on these facts, Hopper and Traugott argue that the structure in (6a) was rebracketed as in (6b), and the phonological reduction is a result of the structural reanalysis.

- (6) a. [I am going [to marry Bill]]
b. [I [am going to] marry Bill] (Ibid.: 3)

Their argument might not be incorrect. However, a question which arises here is: What is the syntactic category of [*am going to*]?⁶ It

⁵ Hopper and Traugott (2003: 3) state that the grammaticalization of *be going to* originates in the 15th century or even earlier. This is a good indication that grammaticalization is a change that sometimes takes a very long time.

⁶ Although *am going to* is bracketed as a single unit in (6b), Hopper and Traugott (2003) provide no pieces of evidence for their bracketing. As is shown immediately below, this is a very problematic analysis.

cannot be an auxiliary because this function is still performed by *am*. It is just *am* rather than the whole phrase that is raised to C in the corresponding interrogative sentence. It may not be implausible to claim that *am* is auxiliary verb, *going* is verb, and *to* is infinitive marker both in (6a) and (6b).

Notice also that the rebracketing, or phonological reduction, in (4) and (6) involves the process of *to*-contraction which is usually applicable to the infinitive maker *to*. Thus we might say that the same process is illegitimately applied to the preposition *to* in (5b). If this is the case, we cannot exclude the possibility that the rebracketing itself has nothing to do with the ungrammaticality of (5b), casting doubt on the pertinence of this example.

Thus it is very difficult to see what kind of categorial reanalysis has happened or is going to happen in examples like (4), though we agree that some kind of grammaticalization is happening in this kind of example. A possible compromise, if not very promising, is that the process of grammaticalization is still in an immature stage and categorial reanalysis will happen at some time in the future. It might not be implausible to argue that only semantic bleaching has happened to *am going to* in (4) up to now, and it will trigger a syntactic reanalysis whenever it reaches a stage in which the bleached meaning is totally incompatible with the original syntactic category.⁷ As is claimed below, semantic change, rather than phonological change, in general operates as a trigger for categorial reanalysis.

One might object that the argument just above is not convincing, since the semantic change illustrated in (4) already started in the 15th century or even earlier. Thus there has been enough time, more than five hundred years, for the expected categorial reanalysis to take place.

⁷ This point was suggested by an *EL* reviewer, who also notes that semantic change tends to take place earlier than categorial reanalysis, because the former is less salient than the latter. He or she further suggests that the temporal precedence of semantic change might be somehow associated with the principle, originally proposed by Naro and Lemle (1976) and further advanced in Warner (1982: 150), that requires language change to occur first in contexts in which it is "least noticeable" or "least salient." If the principle is amplified in an appropriate way, it might be able to account for the temporal precedence of semantic change in (6). In particular, we will have to show that syntactic change is more salient than semantic. This might be possible, since syntactic change is often morphologically or phonologically visible, while semantic change is not.

This is a very reasonable objection, but notice that some historical changes take an extraordinarily long time to reach a mature stage. There might be other important reservations than this, but we claim with the coauthors that categorial reanalysis is one of the properties truly characteristic of grammaticalization. Otherwise, an extravagantly large number of historical changes would be regarded as grammaticalization, and it becomes quite difficult to formulate any reasonably restrictive definition of it.⁸

3. Theoretical Backgrounds and Related Matters

In the Introduction and Chapter 1, the coauthors outline theoretical backgrounds and discuss related matters such as parameters, functional heads and language change. Then they introduce some theoretical devices, such as Merge and Attract/Agree, that have been developed in studies of the Minimalist Program, such as Chomsky (1995, 2000, 2001).

Although there are many important claims or assumptions in the book, we focus here on a point that the coauthors make: diachronic grammaticalization of lexical or functional items over years is always directed 'upward' in the X-bar theoretic phrase structure. They also claim that the functional structure itself is intact after grammaticalization; what changes is the way of realization of syntactic features associated with a functional head that is involved in the change. This means that grammaticalization always causes reanalysis of features of at least one functional category, and a novel realization of the features takes place after grammaticalization. For formalization of feature realization, they develop a notation, which is given in (7).⁹

- (7) A functional feature F is notated as F* if it requires a PF realization. (p. 29)

This notation is supposed to express a parametric alternation: if the dia-

⁸ As argued in Akimoto (2002), idioms also might be created by grammaticalization. If so, it should be noticed that there are many idioms, such as *take advantage of*, that still retain original syntactic structures and in which categorial reanalysis is yet to happen, as can be seen by grammatical passives like *Advantage was taken of John*. and *John was taken advantage of by his teacher*.

⁹ Here and henceforth, the page number in the parentheses indicates the page of the book under review in which the citation appears.

critic * is assigned to F in the lexicon of a language, it must be realized at PF, and if not, it does not have to.

Closely connected with feature realization is the notion of structural simplification, which is claimed to be determined by the simplicity metric developed by Longobardi (2001: 294).¹⁰

- (8) A structural representation R for a substring of input text is simpler than an alternative representation R' iff R contains fewer formal feature syncretisms than R'. (p. 201)

The coauthors claim that the metric is applicable to all the 18 cases of grammaticalization they discuss in the book. Their conceptual characterization of structural simplification is very clear: a lexical item that phonetically realizes two formal features X and Y is more complex than one that realizes only one of them. If the relevant item realizes too many features, it is suffering from feature syncretism, and thus it needs to shed some of the features. Then grammaticalization comes into play to help the suffering item shed features that allowed it to merge in its original position. After this, it starts to merge directly in a higher functional head to which it used to move for checking of another feature F that once triggered its movement. In this way, a cycle of grammaticalization is completed and the relevant parameter of grammar is reset from F*_{Move} to F*_{Merge}. Thus the coauthors have successfully reduced grammaticalization to an instance of parametric change.

This is certainly one of the most interesting characterizations of grammaticalization. In their actual description or explanation of the 18 cases, however, the coauthors do not apply the metric in (8) to them. Thus it is very difficult to evaluate the explanatory or descriptive adequacy of the metric in an appropriate way. A possible counterexample to the metric may be the historical reanalysis of the preposition *for* as a complementizer. Probably in ME or earlier, it obtained a new feature to become a complementizer, but it did not shed its old Case-checking feature as a preposition and has retained it until today. Thus it has been suffering from a feature syncretism for many centuries, and nobody knows when it will be cured of the grammatical disorder.

¹⁰ It is also suggested in the book that movement operations are adjunctions, as claimed in Kayne (1994), and thus Move creates a more complex representation than Merge, since adjunction is a structure-building operation. But the coauthors do not explain how this is connected with the metric in (8).

More problems with the metric are pointed out in subsequent sections, calling into question its feasibility.

Since the system of functional categories plays a critical role in the book, there must be a universal inventory of functional categories. To cope with this problem, the coauthors have recourse to the set of functional heads proposed by Chinque (1999), who eventually postulates a 32-head structure on the basis of the distributions of adverbs. Although Chinque's study is certainly important, the number of functional heads seems to be very dubious, as the coauthors also note. However, all the postulated functional heads are not needed for the empirical study in this book, because we can study a given case of grammaticalization in a limited area of phrase structure that contains only well-established functional heads. Thus let us continue to assume that there is a system of functional categories that is universally motivated.

4. T Elements

Chapter 2 is devoted to discussions of T elements, i.e. lexical items that are reanalyzed to be directly merged in T. It is generally agreed that the verbal items known as modal auxiliaries in present-day English underwent a sort of grammaticalization in ME, so that they now form a very special verbal class that has only finite forms without any agreement inflections. The coauthors formulate the change as in (9), in which it is assumed that earlier English had V-to-T raising until at least the 16th century.

(9) English modals

- i. Structural change: $[_{TP} V+T [_{VP} t_v TP]] > [_{TP} T VP]$
- ii. Parametric change: $T^*_{Move} > T^*_{Merge}$
- iii. Cause: loss of infinitive marker (p. 195)

Notice that this is a type of grammaticalization that does not involve a complete cline type of phonological reduction of the relevant items.

(9i) means that a biclausal structure like (10a) changed into a monoclausal structure like (10b) in the 16th century when pre-modals were reanalyzed as auxiliaries.

- (10) a. $[_{TP} \text{Sone } [_{TP} \text{hit } mæi [_{VP} t_{mæi} [_{TP} T [_{VP} \text{ilimpen}]]]]]$ (p. 40)

- b. $[_{TP} \text{Soon } [_{TP} \text{it may } [_{VP} \text{happen}]]]$ (p. 41)

Before the reanalysis the features of T were realized through V-to-T

movement of the pre-modal *mæi*, but after the reanalysis they came to be realized by direct merge of it in T. The parametric change in (9ii) is intended to be a summary of this change. Turning to (9iii), this means that the structural change was triggered by the loss of the infinitive marker *-e(n)*, which is supposed to be clear evidence for the lower T. A preliminary impression of (10) is that it involves some unmotivated assumptions or stipulations that make it appear rather suspicious.

In the first place, the coauthors present no evidence for their basic assumption that the infinitive marker *-e(n)* had been a realization of T until the 16th century. Considering the historical fact that *-e(n)* derived through leveling from both the nominative case marker *-an* and dative case marker *-enne* (*-anne*) which were attached to infinitives as nominals in OE, it would be implausible to assume that *-e(n)* was an element of T. This is simply because *-e(n)* was historically associated with the case inflections, but never with tense. Thus we might say that the biclausal structure in (10a) is untenable.¹¹ Secondly, the causal relation between (9ii) and (9iii) is unclear. If pre-modals are directly merged in T after grammaticalization, it is quite difficult to see why this parametric change must be caused by the loss of the infinitive morphology on nonfinite verbs appearing in the lower clause. It might be much more plausible to argue that some morphological or semantic change of pre-modals themselves was the cause of the parametric change. Thirdly, we cannot overlook the historical fact, observed by Warner (1983, 1993), that some OE pre-modals, like *mot*, *dearr*, *sceal*, etc., did not have non-finite forms, strongly suggesting that they started to merge directly in T much earlier than the sixteenth century when the infinitive morphology disappeared. The coauthors also notice this problem and try to solve it by supposing that the relevant OE pre-modals did not have argument structure in certain interpretations such as ‘necessity,’ ‘obligation,’ and ‘futurity,’ and thus were able to be merged directly into suitable functional heads. This solution sounds convincing and presumably correct. It should be noted, however, that the proposed solution undermines the basic idea stated in (9iii), because we cannot now exclude the possibility that all pre-modals were grammaticalized

¹¹ Rather, it should be noticed that English infinitives have developed into clausal structures since the infinitive *to* started to be merged directly in T. As argued in Martin (2001), among others, there are good reasons for associating *to* with T.

whenever they lost their argument structure. In other words, the loss of infinitive marker had nothing to do with grammaticalization of pre-modals and the real cause was rather the loss of argument structure. We will see below that semantic change should be more emphasized as the cause of grammaticalization.

Let us now turn to the observation by Warner (1993), among others, that epistemic meanings of pre-modals emerged in ME. The coauthors interpret this semantic change as a further reanalysis of (some) pre-modals, so that they were merged in the Mood_{Epistemic} position in (11), which is a substructure of the functional structure proposed by Cinque (1999).¹²

- (11) Mod_{Epistemic} T(Past) T(Future) Mood_{Irrealis}
 Mod_{Necessity} Mod_{Possibility} ... Mod_{Root} (p. 44)

Here again, what caused the reanalysis was the semantic change that happened to pre-modals in ME. One might claim that the semantic change happened just because pre-modals began to merge in T. This might be true. Then we may well argue that semantic changes and categorial reanalyses come up alternately and constitute a cline of grammaticalization. In addition, if pre-modals really merged directly in Mod_{Epistemic} that is structurally higher than T, this grammaticalization was also upward bound.

There arise problems with the simplicity metric in (8). Since almost all pre-modals already had the root meanings represented by the feature Mod_{Root} when they newly obtained Mod_{Epistemic}, this could be a change that raised the level of feature syncretism on the pre-modals. A possible remedy is to argue that epistemic pre-modals lost Mod_{Root} when they underwent the change in question, and became different items from root modals that did not have epistemic meanings. In other words, modals or pre-modals have just one of the two features, but not both of them. Actually, the coauthors try to classify verbs into three types in present-day English: epistemic modals, dynamic modals and lexical verbs. They hold that while epistemic modals have no argument structure and directly merged in T, dynamic modals participate in the determination of thematic roles of subjects and are merged in *v* in the struc-

¹² Here we have to beg the fundamental question concerning the reality of Mod_{Epistemic}, and probably the other heads in (11).

ture [_{TP} T [_{VP} v [_{VP} V]]] (p. 47). This will lead them to claim that epistemic modals and root modals must be separately registered as different items in the lexicon. In other words, modals are not polysemous. If so, they will have to explain why epistemic modals and dynamic modals cannot co-occur in English in T and v, respectively, and why dynamic modals must always be associated with T, probably by raising them to the higher position from v.

A more general and difficult problem with (8) is that, in principle, it will ban polysemy in language, since it means that there is a sort of feature syncretism on a single item. Even if (8) does not impose such a strong restriction, we will still have to say that polysemy is a temporary phenomenon, which will disappear soon, or an epiphenomenon. But since everything depends on what kind of feature is counted as relevant to the application of (8), we leave this problem open for a future study.

5. More on Phonological Reduction

Phonological or morphological reduction has been treated as a more influential cause of grammaticalization than semantic change in many studies, including this book (p. 209). But there are examples in which grammaticalization takes place without any phonological reduction of lexical or functional items. As noted above, the development of modals might be an example of such grammaticalization, in which semantic change and subsequent categorial reanalysis are significant changes. It might be objected that English modals have lost all inflectional affixes, and thus they also had undergone phonological reduction. But what is meant here by phonological reduction is that of stems or bases of words, as in auxiliary contraction, negative contraction, *to*-contraction, etc. If this is sustainable, we will be able to claim that phonological reduction happens only after an item is raised to or merged in a functional head.

To further motivate this claim, let us turn to a more convincing example of grammaticalization in which phonological reduction does not play any important role: the advent of auxiliary *do* in late ME. Since the ground-breaking study by Ellegård (1953), it has been said that the causative *do*, as in (12), was one of the most possible sources of the auxiliary.

- (12) þe king sende efter & did him gyuen up ðat abbotrice of

Burch. 'The king sent for him and made him give up the abbey of (Peter)borough.'

(Peterb. Chron 1132 [*MED* don 4a])

Notice first that the causative *do* clearly had some argument structure as a main verb in earlier English. Since the auxiliary *do* lacks argument structure in present-day English, we may conjecture that the course of its development was quite similar to that of modal auxiliaries. However, there is a considerable difference between the two changes; while modals have lost person and number inflections, the auxiliary *do* retains all the inflections that its lexical counterpart has in present-day English. Thus it might be concluded that the loss of argument structure, rather than morphological reduction, was the vital trigger for the development of the auxiliary *do*.

Assuming this much, let us proceed to see why English auxiliaries have never reduced into affixes, despite the fact that they can be cliticized on to subjects through phonological reduction. One might expect that they would undergo some kind of affixation if there is an effect coming from the cline type of change given in (1). The coauthors note that there is an example of such affixation in Romance languages, and the future tense affixes in Modern French show this type of development.

- (13) Future: chanter-*ai*, chanter-*as*, chanter-*a*, chanter-*ons*,
chanter-*ez*, chanter-*ont*

avoir: *ai*, *as*, *a*, *avons*, *avez*, *ont* (p. 49)

There are obvious morphological correspondences between the future tense affixes attached to *chanter* 'to sing' and the present tense forms of *avoir* 'to have.' This will constitute strong evidence that the French future tense affixes developed from *avoir*.

In Classical Latin, *habere* 'to have' was a full verb that took the same complements as those of ordinary main verbs, as in (14).

- (14) De re publica nihil habeo ad te scribere.
Of thing public nothing I-have to you to-write
'I have nothing to write to you about the public.'

(Cicero; cited in Tekačič (1980))

Thus it should be noticed that *habere* used to have an argument structure, like OE or ME pre-modals. Following traditional studies in Romance philology, such as Bourciez (1967) and Tekačič (1980), the coauthors claim that *habere* was eventually reduced to the future/conditional tense affix in three stages in many Romance languages. The rel-

evant stages in French are given in (15).

- (15) a. [TP [VP [XP amare] t_{habeo} [T habeo]]] >
 [TP [XP amare [T habeo]]]
 b. [TP [XP amare [T habeo]]] > [TP [XP t_{infin}] [T amar+aio]]
 c. [TP [XP [T amar+aio] [VP t_{infin}]]] >
 [TP [XP [T amar+ð] [VP t_{v+fut}]]] (p. 50)

In the first stage, *habeo* was reanalyzed as a future auxiliary in the third century in a way parallel with English pre-modals. This reanalysis made it possible for the future/conditional tense to be realized by direct Merge of a functional free morpheme into T. Thus it was a change characterized as Move > Merge. In the second stage, *habeo* as a free morpheme was reanalyzed as a syntactic affix. The coauthors hold that the second stage was a direct reflex of the first one, and it was a change from Merge to Move+Merge. In the third stage, the syntactic affix was incorporated into V to be a lexical feature of V. Consequently, there was a reintroduction of V-to-T movement in future/conditional sentences.

The development of the future/conditional tense in French is very suggestive and the three stages of the change in (15) might be basically correct, if not perfect. But let us now reconsider the cause of the change in the first stage. The coauthors first discuss a morphological defectivity of the reanalyzed *habere*; it did not have the future participle, though it had the full range of Latin tenses, voices and moods. They claim that the morphological defectivity was directly comparable to that of ME pre-modals.¹³

There seems to be a serious problem with their argument, however. What they should have shown was that *habere* as a full verb was morphologically defective before it was reanalyzed as auxiliary. If it was really defective, we could claim that the morphological defectivity was comparable with that of ME pre-modals, which were morphologically defective before the reanalysis as auxiliaries. It will be relevant to note that *habere* as a full verb did have the future participle form, *habiturus*, in Classical Latin, so it was not morphologically defective.¹⁴ Thus it may be that the morphological defectivity was not the cause of the

¹³ Since Classical Latin and ME had very different conjugational systems, it is very difficult to see what kind of comparability existed between them.

¹⁴ This fact was pointed out to me by Sumio Yoshitake, an experienced expert in Classical Latin.

change in the first stage; rather, it was just a result of the reanalysis.

As a further comparability of *habere* to English pre-modals, the co-authors point out its practical lack of argument structure, as attested by the example in (16) cited from Benveniste (1968: 90).¹⁵

- (16) in nationibus a quibus magis suscipi habebat.
among nations-abl by which-abl most to-be-accepted had
'Among nations by which the most was to be accepted.'

(p. 51)

Following Benveniste, the coauthors note that *habere* in examples like (16) had a (deontic) modal interpretation that implied the notion of futurity. The thematic defectivity allowed it to directly merge in T or Mod_{Necessity} in the substructure of Cinque (1999) given in (11). If this is the case, we no longer have to cope with the problems raised regarding the controversial morphological defectivity. Thus this would be at least a better alternative as the cause of the change in the first stage. One might object that both morphological and semantic causes, rather than one of them, contributed to the commencement of the change. This might be a possible choice. But, as shown above, morphological defectivity cannot account for the historical development of English modals, and the defectivity of argument structure provides a consistent account for both Latin and English historical developments of auxiliaries. Then we should favor the semantic defectivity as the primary cause of the categorial reanalysis.

Once *habere* directly merged in T, its change into an affix, whether syntactic or lexical, in the second and third stages in (15) was presumably a very natural consequence, since it is well known that T elements are typically subject to morphological reduction.

It might be in order here to ask why English modals have never undergone affixation in a way parallel with *habere*. The coauthors advance a very convincing answer to this question, which may be one of the most interesting arguments in the book. For this purpose, they appeal to the difference in word order between Latin and English: while there is a general consensus that the unmarked word order in Classical Latin was OV, that of ME was already VO. Following standard typological generalizations, they assume that auxiliaries were located after

¹⁵ The coauthors claim that *habere* as a main verb had the meaning of possession, implying that it had argument structure, and there was a process like lexical split that led to deriving *habere* without argument structure.

main verbs in Classical Latin. Then they consider two alternative structures, and the one they prefer is given in (17), which is a partial structure of (16).

- (17) [[_{VP} magis t_v] ... [_T suscipi] [_V habebat]] (p. 54)

This structure is produced by moving *suscipi* to T out of VP, bypassing the auxiliary, and preposing the VP remnant [_{VP} magis t_v] to a certain position. If this is the case, there was a chance for *habebat* to immediately follow *suscipi*, allowing the former to be phonetically reduced and become the future affix adjoined on the latter. In contrast, English did not have this vital chance, since it was already a VO language when pre-modals were reanalyzed as auxiliaries in ME.

Here again, however, we should notice the possibility that at least a few pre-modals had already altered, at least semantically, from main verbs to auxiliaries earlier than ME, and thus probably even in OE. Nawata (2004) points out observations by Nakao (1972: 352) and Warner (1993: 147) that both epistemic and root pre-modals, especially *mot* and *shal* of necessity or obligation, were used only as finite forms in ME. Let us consider the example in (18) which is from OE.

- (18) gif men ferlice wyrde unsofte, oððe sprecaþ ne
 if one suddenly speak uncomfortably or speak not
 mæge
 may (8c Durham Admon. in O.E. Texts 176/OED)

In this case, *mæge* with the root meaning of ability is positioned after the main verb *sprecaþ*, and there is a negation between them. It would not be implausible to assume here that *ne*, whether as a negative adverb or a functional head, is outside VP or vP and *sprecaþ* is inside VP in (18). Thus it is very likely that *mæge* is directly merged in T as a tensed auxiliary, on which *ne* is presumably cliticized. Regrettably, however, there is no knowing whether or not examples like (18) affect the above argument by the coauthors, though they could be serious problems. Thus we leave this problem open, just noting their presence.¹⁶

¹⁶ The coauthors point out that the perfect *habeo* did not change into an affix despite the fact that it was grammaticalized earlier than its future counterpart. Based on the observation that it took a participial complement, they stipulate that it was not thoroughly grammaticalized when Latin was an OV language. This stipulation might turn out to be correct, but the perfect *habeo* suggests that word order was not the sole reason for the difference between Latin and English discussed in the text.

6. C Elements

In Chapter 3, the coauthors discuss various kinds of elements reanalyzed as complementizers, including the development of the infinitive *to* in English. They compare it synchronically and diachronically with the modal or subjunctive particle *na* in Modern Greek and *mu* in Southern Calabrian and North-East Sicilian dialects of Italian. The three particles share interesting diachronic properties: their mood features that had been realized on a lower functional head, i.e. M (Mood), changed to be realized on a higher functional head, i.e. C, after the loss of subjunctive or infinitive morphology.

Following Rosenbaum (1967) and Kayne (2000), the coauthors argue that the infinitive *to* occupies the position of complementizer C. They point out five properties of *to* shared by *na* and *mu* that are claimed to be C elements.¹⁷ It is also claimed that *to*-infinitives are similar to *na*- and *mu*-clauses in that they co-occur with a negation in the C-system.¹⁸ Consider the following examples.

- (19) a. Not *to/to* not leave would be a shame.
 b. **Ton't* leave would be a shame. (p. 98)

The example in (19a) shows that *not* is allowed to appear on either side of *to*, and (19b) is supposed to show that *not* cannot contract onto *to*. The coauthors try to account for these facts by assuming a structure like (20).

- (20) .. not .. [_{IP} .. T .. [_{..} n't .. [_{VP} .. V ..]]] (p. 99)

The impossibility of negative contraction on *to* is accounted for by assuming that *to* is not in T. By emphasizing semantic similarities of *to* to *na* and *mu*, the coauthors claim that it is in M. Furthermore, since *to* can precede the non-contractible *not*, as in (19a), they claim that it optionally moves from M to C, or it is directly merged in C, allowing for *not* to spell out M. In this way, they arrive at the above claim that the infinitive *to* is a C element.

¹⁷ For interesting discussions on the five properties of *to*, the reader is referred to Section 3.3 of the book.

¹⁸ In the C-system proposed in the book, Neg, M and T are closely associated with C and constitute a hierarchical structure like [_{CP} C [_{NegP} Neg [_{MP} M [_{TP} T]]]]. In particular, it is also claimed that M is included in C or even identified with C.

With this much in hand, the coauthors hold that *to* which was originally a preposition was reanalyzed as a complementizer at some time in ME.¹⁹ This process of change is represented as follows.

- (21) English *to*
- i. Structural change:

$$[_{PP} \text{ to } [_{DP} \text{ V+enne}]] > [_{TP} \text{ V } [_{CP} [_{MP} \text{ to } [_{TP} [_{T} \text{ V+enne}]]]]]$$
 - ii. Parametric change: $M > M^*_{\text{Merge}}$
 - iii. Cause: loss of infinitives/subjunctives, change in the category of infinitives (p. 195)

There are many problems with (21), though the basic ideas seem to be essentially correct. We have to first ask a rather serious question: Was the structural change in (21i) really an example of grammaticalization? The syntactic status of *to* certainly changed from preposition to M. In this case, however, it did not change from a lexical category to a functional one; it just changed from a functional category to another functional category. Of course, there are many examples of grammaticalization in which functional categories alter to different functional categories. But it is very difficult to see if we can say that M is a more grammaticalized element than P. Secondly, as often noted above, the coauthors claim that grammaticalization is bound to proceed upward in a tree structure, but we cannot see in what sense *to* came to be merged in a higher head. Since upwardness is a vital characteristic of grammaticalization in this book, the change in (21) would have to be excluded from a set of examples of grammaticalization if we fail to show that it was an upward reanalysis. Thirdly, the coauthors do not explain in what sense the structure was simplified by the change. The simplicity metric in (8) should be applicable to (21), but the question is exactly how it applies to this case.

One might claim that if the infinitive *to* directly merged in T, instead of M, after the reanalysis, this change might well be an instance of grammaticalization. This is simply because while T is realized by the tense affixes in English, M is realized by modal auxiliaries that are free morphemes. In other words, T is more function-oriented than both P

¹⁹ After a long discussion of the syntactic status of the infinitive *to* in OE, the coauthors claim with Los (1999) that it ceased to be a preposition much earlier than OE and was a clitic adjoined on V in OE.

and M which are realized by free morphemes in present-day English.²⁰ Thus if it can be said that *to* changed from P to T, there will be a possibility that the change in (21) should be included in grammaticalization. Since *to* has been treated as a T element in many studies such as Jackendoff (1972), Lightfoot (1991), Bošković (1997), and Pollock (1989), it will not be implausible to adopt this alternative analysis. However, we still have to cope with the problems with upwardness and structural simplification. In particular, upwardness will be one of the most serious problems, because it is a central thesis in this book. In the case of grammaticalization of pre-modals, this problem does not arise, since they were originally merged in V and then reanalyzed upward as T elements and eventually M elements. After all, a tentative conclusion here is that the change in (21) is not a case of grammaticalization in the sense intended by the coauthors.

In connection with this, it might be relevant to point out another problem with the thesis of upwardness: there is a rather clear case of downward grammaticalization in the history of English. It is the development of the complementizer *that* from a demonstrative pronoun in OE. As is well known, the historical steps of this change were roughly like the following (cf. *OED* s. v. *that conj.*):

- (22) a. He once lived here: we all know that.
 b. That we all know: he once lived here.
 c. We all know that: he once lived here.
 d. We all know that he once lived here.
 e. We all know he once lived here.

In the stages in (22a, b, c) *that* was a demonstrative pronoun, in the stage in (22d) it was a conjunctive particle, and in the final stage in (22e) it became omissible. Following Hopper and Traugott (2003), we might interpret this change as a “cline of clause combining,” which is

²⁰ The hypothetical claim in the text might appear more plausible if we recall that since Chomsky (1970), P has been analyzed in terms of the features [$\pm$ V] and [$\pm$ N] along with V, N and Adj. A real problem seems to be that the simple dichotomy of “lexical” versus “functional” is not sophisticated enough for description of the reality of language. We should develop a scale of “lexicality” on which prepositions, auxiliaries or conjunctions are placed somewhere between real lexical items and functional items.

given in (23).²¹

(23)	parataxis	>	hypotaxis	>	subordination
	–dependent		+dependent		+dependent
	–embedded		–embedded		+embedded

(Hopper and Traugott (2003: 178))

The most important step here would be the one from (22c) to (22d). If the structure of (22c) is hypotactic to some degree, we can say that the righthand clause is somewhat dependent on the lefthand one. If this is the case, it will follow that *that* in (22c) was restructured into a lower clause when the change from (22c) to (22d) took place. Thus we may conclude that the complementizer *that* was introduced into English through downward grammaticalization. If it turns out that the structure of (22c) was still paratactic, it was not upward grammaticalization; rather, it was just a shift across a clause boundary which lay between the paratactically combined clauses. Still it was not upward bound.

Although the coauthors do not discuss this problem in detail, they note that the change in question involved a leftward shift of the constituent boundary, as in (24).²²

- (24) I think that [the earth is round] → I think [that the earth is round] (p. 118)

Essentially following Kiparsky (1995), they argue that the lefthand sentence had a structure similar to that of (25) in that the pronouns, i.e. *that* and *it*, are complements of the higher verbs and the clauses, whether IP or CP, are adjuncts rather than complements.

- (25) I know/regret it [that John is a liar] (p. 117)

They also argue that the shift of the clause boundary in (24) took place after the IP clause of the righthand sentence in (24) obtained the status of complement, which is supposed to be a process of structural simplification. Then, the syntactic status of *that* changed from demonstrative to complementizer.

²¹ Here the terms “parataxis” and “subordination” are used in their traditional senses. “Hypotaxis” is an intermediate stage in which dependent clauses are not completely subordinate to nuclear clauses.

²² The coauthors note that a similar shift happened to *for* NP in [*for* NP *to* V], and thus it is not uncommon.

Their analysis might be an appealing alternative to the one illustrated in (22). We cannot decide instantly which one is the correct, or better, alternative. Even if we adopt the alternative proposed by the coauthors, it is still very difficult to see whether the reanalysis of *that* was upward or downward. We will have to consider at least two courses of change, as in (26).

- (26) a. Incorporation of *that* into the adjunct clause >
 Restructuring of the adjunct clause as complement
- b. Restructuring of the adjunct clause as complement >
 Incorporation of *that* into the complement clause

Assuming the traditional tree structure, let us hold here that complements are located under VP and adjuncts are adjoined to VP. If the change follows the course in (26a), the incorporation of *that* into the adjunct clause will be directed upward in the tree structure. If the course in (26b) is followed, then the incorporation of *that* into the complement is directed downward. The coauthors note that the leftward shift of the clause boundary in (25) took place after structural simplification of the lefthand sentence in (24), i.e. restructuring of the adjunct clause as complement. This might be a plausible assumption, because complements are more likely to require a complementizer than adjuncts. Thus the coauthors would have to prefer the course in (26b) to the one in (26a), and thus admit the existence of downward grammaticalization.

When lexical items are reanalyzed as functional heads within a single clause, upwardness may be an automatic consequence since functional categories such as T, C and M are located in a higher area of the tree structure than that of lexical categories. In this sense, it is definitely an insightful claim. However, when grammaticalization penetrates into a lower clause across a clause boundary, we naturally have to take into account the possibility of downward reanalysis.

7. D Elements

In many European languages, the development of the determiner system might be one of the most intriguing examples of grammaticalization. In Chapter 4, the coauthors discuss grammaticalization of some items into D elements. They begin by considering the development of the definite articles out of demonstratives in Romance languages.

It is noted that a characteristic property of Latin was the lack of articles, as the following example attests.

- (27) Regina rosas amat.
 Queen-nom rose-acc loves
 'The queen loves (the) roses.' (p. 132)

There was a system of demonstrative pronouns in Latin which matched personal pronouns in terms of person features. After a rather complicated historical change of the system, the third person demonstrative *ille* 'that' was eventually reanalyzed as the definite article, as in (28).²³

- (28) Romance determiners:
 i. Structural change:
 [DP [DemP *ille*] D..] > [DP [D (*il*)le]]
 ii. Parametric change: D[+def] > D[+def]*
 iii. Cause: loss of morphological case marking on DP (p. 196)

As is shown below, the development process of the Latin definite article is very similar to that of the English one, though there are some important differences.

Apart from details, the structural change and parametric change in (28) might not be implausible. What seems to be dubious is again the cause of the grammaticalization. In Section 4.1, the coauthors make interesting comments on semantic or syntactic properties of demonstratives in Vulgar Latin. First, demonstratives were able to occur pronominally without bearing an obligatory specification for proximity. Second, thanks to the existence of personal pronouns with the parallel person features, the demonstratives did not have to be specified for person features. Third, *ille* retained the definite feature, so it was able to function as the definite article when it occurred in prenominal position. It seems that the properties, especially the first and third ones, could be credible causes of or motivations for the structural change in (28i). In Chapter 5, however, the coauthors suddenly jump to the loss of morphological case marking on DP and conclude that it was the cause of the reanalysis, as stated in (28iii). This might be a rather hasty conclusion.

To cast a light on this problem, let us turn to the development of the definite article in OE and present-day German. As pointed out by

²³ Since Latin has never lost demonstratives, it should have been explained why DemP disappeared after the change in (28i). But no explanation is given in the book.

Mitchell (1985) and Quirk and Wrenn (1958), it is very difficult to determine whether or not OE had the definite article. It is often said that the unstressed form *se* 'that' of the singular masculine nominative demonstrative *sē* was used in OE as the definite article, and it had the five distinctive case forms, i.e. nominative, genitive, dative, accusative and instrumental. However, since there were no inflectional differences between the stressed and unstressed forms, we have no morphological evidence for the existence of the definite article in OE. *Se* started to lose its declensions in the mid-12th century, lost all of them by about 1400, and eventually *the*, which did not have any declensional variation, was established as the definite article. Thus we have to take into consideration the possibility that the loss of the entire declensional system was the cause of the change that made *se* alter from demonstrative to article. If so, there is no reason for conceiving that the loss of morphological case marking was the sole cause of the reanalysis. On top of everything else, there is no denying that the unstressed *se* was already the definite article in OE.

In addition, present-day German seems to provide strong evidence for the claim here. This language has both definite article and demonstratives, and all of them retain declensional systems. As in many other European languages, the definite article is basically the phonetically weak form of the demonstrative pronoun. Thus one might object that the so-called definite article is actually a demonstrative along with *dieser* 'this' and *jener* 'that.' But the definite article and the demonstrative homonym have distinct singular genitive endings and plural dative endings.²⁴ Thus present-day German clearly has both the definite article and almost homonymous demonstrative, despite the fact that neither of them has lost the morphological case endings. This means that the loss of morphological case marking on DP cannot be the cause of the lexical split. There are other indications that native speakers are aware of the existences of the two homonymous forms: the letters of the demonstrative are separated, as in (29a), or italicized, as in (29b), when they want to make it clear that the relevant form is the demonstrative.

- (29) a. d e r Mann b. *der* Mann

²⁴ Sumio Shimizu, professor of German literature, informed me of the important inflectional differences.

These writing devices also strongly suggest that present-day German has the definite article besides the demonstratives.

Essentially the same might hold for the emergence of the definite article in OE and Latin, though there is no clear evidence like (29) in these languages. Thus it might be concluded that the decline of case endings was not the cause of the development.

Then what caused the advent of the definite article in these languages? We might say that the coauthors have already answered this question. It was again semantic properties of a demonstrative variant that commenced the change in question: the non-obligatory specification for proximity and the detention of the definite feature. The first property seems to be more essential here, since the definite article is noticeably neutral with respect to proximity. The homonymous variant with the specification for proximity would continue to be a demonstrative, whereas the variant without the specification would cease to be a demonstrative and become the definite article. Needless to say, the second property was also important. If the [+definite] feature had declined, no demonstrative variants could have come to function as the definite article.²⁵ In other words, the demonstrative with [+definite] was a good candidate for the reanalysis.

Notice here again that the reanalysis in (28) poses a problem for the simplicity metric. Even after the loss of the proximity feature, it had to detain the [+definite] feature, in order to become the definite article. Furthermore, it obtained a new feature to be the article, probably the [+determiner] feature. Thus structural simplification was out of the question in the reanalysis under discussion. More importantly, the English demonstratives, *this* and *that*, were reanalyzed as determiners just by acquiring the [+determiner] feature without losing the proximity feature. Thus we might say that they were grammaticalized by structural complication rather than simplification. Here again, a more feasible definition of structural simplification is required.

²⁵ It should be noticed that the semantic content of demonstratives was already thin enough, so they did not have to undergo semantic bleaching any more to become the definite article.

8. Conclusive Remarks

Chapter 5 is the last chapter of the book which discusses some theoretical consequences of the arguments in the preceding chapters. Many useful clarifications and reconsiderations are provided in this chapter. The most interesting, and perhaps worthwhile, is the insightful discussion of differences between grammaticalization and other syntactic changes. After discussing three syntactic changes in English that are not grammaticalization, schematically given in (30)–(32), the coauthors summarize the differences as in (33):

- (30) *Loss of V2*: [C [T V]] [TP...t_T...] > C...[TP...[T V]...]
- (31) *Loss of V-to-T*: [T V]...[VP...t_V...] > T...[VP...V...]
- (32) *OV > VO*: [_{FP} Obj...[VP...(V)t_{Obj}...]] > [VP...(V)Obj...] (p. 205)
- (33) ‘Downward’ changes, as in (24)–(26) (our (30)–(32)):²⁶
 - a. apply to all members of Y;
 - b. do not change category of Y;
 - c. involve no semantic or phonological changes to Y-roots;
 - d. cannot be cyclic. (p. 208)
- (34) ‘Upward’ changes, as in (30):²⁷
 - a. apply only sporadically or to morphological subclasses of Y;
 - b. change category of Y;
 - c. are associated with semantic bleaching and phonological reduction;
 - d. can be cyclic. (Ibid.)

If a thorough investigation of the three changes in (30)–(32) is carried out, there will emerge some problems with the four properties in (33). However, they seem to be basically on the right track. A generalization of special interest by the coauthors is that the ‘downward’ changes

²⁶ In the changes of (30)–(32), verbs or objects certainly cease to move upward, but the term ‘downward’ seems to be rather problematic. Verbs or objects are merged in their original positions and stay there in (31) and (32). If verbs still move up to T from their original positions in (30), the change relevant here is the historical ending of the further movement of the verbs to C. Thus no ‘downward’ movements are newly introduced in all the changes of (30)–(32). This point would be theoretically important and have to be reconsidered in a future study.

²⁷ (30) is a typical schematic formulation of grammaticalization given as [_{XP} Y+X [_{YP} t_Y]] > [_{XP} Y = X[_{YP} Y]] (p. 207).

have no interface effects; in contrast with grammaticalization, they do not cause any semantic bleaching or phonological reduction of verbs that are affected. This generalization requires an explanation and if we can arrive at any kind of explanation, whether cognitive or psychological, it will enable us to reveal a profound aspect of the linguistic competence of human beings, though we cannot enter into any discussion here. As shown in (34), grammaticalization has the opposite properties. Thus we might say that the last chapter is an attempt to formulate a more appropriately restricted notion of grammaticalization. In this respect, this book should be highly valued.

Let us conclude the present review by repeating the main points that we have made here. It was first shown that a semantic change of a lexical form, such as semantic bleaching, is the main cause of grammaticalization, and phonological or morphological reduction of affected words is just a resultant phenomenon. Second, despite the existence of apparent counterexamples, categorial reanalysis is still a critically important property of grammaticalization. Third, when a linguistic form in a higher clause is restructured into a lower clause, grammaticalization is necessarily directed downward rather than upward. Fourth, the notion of structural simplification proposed in this book is untenable or infeasible, as it stands, though it is very difficult to present any alternative.

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