

Time over Matter

edited by Miriam Butt
and Tracy Holloway King

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LFG as a Model of Syntactic Change

NIGEL VINCENT

1.1 Introduction

In this chapter I will seek to develop a general case for the contribution that a lexically-based, correspondence model of grammar such as LFG can make to our understanding of morphosyntactic change. I will do this by highlighting a number of general issues that have arisen in the literature on syntactic change and showing how the studies collected in the present volume take the debate forward.¹

1.2 Recent Trends in Historical Syntax

Research in historical syntax has increased exponentially over the last quarter of a century or so. Unfortunately, at the same time it has bifurcated into two different camps between which there is relatively little communication and exchange of ideas. The key moment seems to have been the end of the 1970's. Earlier in that decade there had been a flurry of interest in the application of Greenberg's typological method to the study of language change and reconstruction (Lehmann 1973, Venne-mann 1974), but that line of work petered out as people began to realize its inherent methodological flaws (see Smith 1981 for a very cogent dis-

¹I will also intersperse allusions to and brief summaries of some of my own recent research in this area, though I will not present detailed supporting arguments and evidence here, but instead I refer the reader to the relevant papers at the appropriate point in the discussion. I am grateful to Kersti Börjars for discussing a number of points with me, and to the editors, Miriam Butt and Tracy Holloway King, for their unremitting charm and forbearance in the face of the long delay in the delivery of this chapter.

cussion). Instead the late '70's and early '80's saw on the one hand the publication of Lightfoot's important monograph on the principles of diachronic syntax (Lightfoot 1979a) and on the other the first trickle of publications—subsequently to become a flood—in which the 19th-century concept of grammaticalization was rediscovered, explored and extended (Givón 1971, Vincent 1980, Lehmann 1982, Traugott 1982).

Lightfoot's (1979a) contribution was to articulate the consequences for the diachronic domain of the Chomskyan view of language, and builds conceptually on the classic distinction between 'abductive' and 'deductive' change drawn by Andersen (1973). Many of the technical details of the approach have altered in the twenty years since this work first appeared (see Lightfoot 1991, 1999) but two fundamental aspects of his position remain unchanged. First, data from language change are as relevant as any other kind of data to issues in general linguistic theory; second, the necessary discontinuity of language transmission means that the locus of change must be the language learner with the essential mechanism of change being reanalytic or abductive. On this view there thus arises a logical problem of language change to put beside the logical problem of language acquisition familiar since the earliest days of the Chomskyan enterprise: how can change arise when different learners with a fixed UG are exposed to (more or less) the same data?

It follows from Andersen's and Lightfoot's diagnosis of the nature of language transmission and change that any signs of apparent continuity and direction in change must be illusory. The same charge of teleology which had already been raised—not least by Lightfoot himself (Lightfoot 1979b)—against the idea of a long-term typological drift has also therefore been levelled against the proponents of grammaticalization, who see change as the diachronic movement of individual constructions along apparently predetermined pathways. While Lightfoot criticizes grammaticalization theorists for their insistence on continuity and directionality in change, they in turn criticize him for ignoring the challenge that grammaticalization data seem to pose to discontinuous models. Whatever else one might say, these are at least reasonable grounds for debate since the problem of change in linguistic systems is precisely that of apparent continuity within necessary discontinuity (at least at the level of the individual; cf. Janda 2001). However, the reason this debate is no longer engaged and both groups by and large go their own separate ways is that larger philosophical issues have become polarized in this dispute. Thus, Lightfoot's position is linked to key tenets of the Chomskyan approach to language such as: innatism, the view that the proper object of study is I-language not E-language (Hale 1998), a transformational-derivational model of grammar, the insistence on formalism and formalizability in

linguistic analysis, the autonomy of syntax, the comparative neglect of the social context of language, of discourse and of the pragmatic function of language.²

The belief that grammaticalization constitutes a fundamental mechanism of morphosyntactic change has become the nucleus of so-called ‘Grammaticalization Theory’, a position which espouses a functional view of language as a tool for human communication. This in turn leads to a focus on pragmatics and discourse, to semantically based ‘prototype’ definitions of linguistic categories and hence to ‘fuzzy’ models of grammar such as that developed under the name Cognitive Linguistics. Much freer rein is also given to the rôle of sociolinguistic factors in the origin and spread of change.³ Yet as so often with the polarization of views in the academic—as in the political—world, it is not clear that a given position on one issue necessarily commits one to all the policies that form the current party manifesto! I will try in this introduction to disentangle some of these issues, and to show that a model such as LFG can offer a fruitful and original angle of attack on many of these thorny questions. It can, I will suggest, do so not least because of the fundamental design property of LFG, namely that it does not identify position and function and thus can model more easily and transparently the shifts in the surface realization of underlying grammatical relations that are characteristic of so much morphosyntactic change. It can also do so for an important heuristic reason: in and of itself LFG does not come encumbered with the kind of ideological crust that has accreted around much of the current debate on language change. It is not for example wedded to strong innatism and the insistence on I-language as the only coherent object of study (although of course if that is what one independently believes it is perfectly possible to regard LFG as providing as good a model—or even a better one!—of the human language faculty than say Minimalism). Equally, nothing in LFG forces the kind of commitment to the traditional communication-based view of language espoused by most students of grammaticalization, but again it is not

²For collections of work from this perspective, see the published proceedings of some of the biennial Diachronic Generative Syntax (DIGS) conference series: DIGS1, Battye & Roberts (1995); DIGS3, van Kemenade & Vincent (1997); DIGS5, Pintzuk et al (2000a); DIGS6, Lightfoot (in prep.).

³In addition to the manuals of Hopper & Traugott (1993) and Heine et al (1991), one may cite here the papers collected in Traugott & Heine (1991) and Giacalone Ramat & Hopper (1998). For a collection of critiques of grammaticalization from various perspectives, see the special issue of *Language Sciences* Vol 23.2 (2001). For work from a mix of theoretical perspectives, see the special issue of *Linguistics* 37.6 (1999).

inconsistent with such a view, and its adoption would add a welcome formal rigor to some of the analyses proposed from this perspective.

My strategy in what follows, therefore, will be to develop the general argument in favor of LFG as a model which allows a reconciliation of the legitimate, twentieth-century concern for linguistics to be a formal discipline—subject to some if not all the constraints of objectivity and public verifiability associated with the natural sciences—with the inevitable fuzziness that comes from the anchoring of language at least in part in the pragmatically and semantically determined goals of language use.⁴ I will start with more general conceptual issues and gradually narrow down to more specific matters of theory and analysis.

1.3 Formalism vs. Functionalism

One way in which the debate between generative and grammaticalization views of change has been stated is as the historical projection of a larger methodological and theoretical polarization between formalist and functionalist approaches to natural language (Croft 1995, 2000; Newmeyer 1998; Darnell et al 1999). Despite occasional protests that the whole debate is misconceived (e.g., Chomsky 2000b:142, note 22), the two basic positions seems clear enough. Formalists typically prefer to look for system-internal explanations for linguistic effects and regard their work as done when they have identified the mechanisms within their system that are involved in change—parameter resetting (Lightfoot 1991, Roberts 1993a), the identification of ‘robust cues’ (Lightfoot 1999:ch 6), etc.⁵ Functionalists by contrast prefer to raise questions about links between aspects of linguistic structure and the external context of language, and the way these may alter with the passage of time. But there is no real incompatibility here. If one has produced a formal account of a phenomenon, it is perfectly reasonable and natural to ask whether it is motivated externally in social and/or psychological terms. The principal justification for formalism is still—as Chomsky (1957:5) classically noted—that “precisely constructed models for linguistic structure can play an important role, both negative and positive, in the process of dis-

⁴Inevitably, given the scope and thrust of the studies of the present volume, I will limit my remarks to LFG as a model of change and contrast it, among the formalist camp, with the dominant Principles & Parameters paradigm. However, much of what I will argue goes for other models which share a commitment to non-derivationalism (e.g., HPSG) or to parallel correspondence (e.g., Role and Reference Grammar). The body of literature on change within alternative frameworks is regrettably small. For HPSG one may cite Miller (1997) and Warner (1993).

⁵Matthews (2001:ch 6.3) draws an insightful parallel here with the system-internal mechanisms of phonological change that were explored by diachronic structuralists such as Jakobson and Martinet.

covery itself". However, once one has discovered a formal principle, say subadjacency or c-command, it still remains to say why languages should be organized in this way. It is here that the Chomskyan commitment to innatism and the autonomy of the language module gets in the way, since it gives researchers a vested interest in stopping at that point. Typically, only a token effort is made to show that the effect in question is not driven by semantic or processing considerations and then recourse is had to UG as the 'explanation' for the principle in question (see Lasnik 1999 as a good example of this strategy). However, as Newmeyer (1999:473) observes, even if one principle is innate, it does not follow that all are.

If Chomskyans commonly give up once they have established the existence of the formal principle, many functionalists stop as soon as they discern a link between an aspect of structure, say word order, and a communicative goal such as the expression of topicality or an afterthought. Yet once again, the proper attitude should be caution, and other hypotheses and alternatives need to be checked out. In particular, one needs to allow for the possibility that certain patterns are without motivation in the external world, either because they indeed reflect a genuine internal principle or because they are the fossilized remains of an earlier pattern (Evans 1995, Simpson 2001). As many contributors in Darnell et al (1999) note, the only real incompatibility arises if one takes the evidence of grammaticalization and change as (part of) a fundamental challenge to the notion of languages as organized structural systems. Some in the 'functionalist' camp undoubtedly would go that far (Bybee et al 1994, Noonan 1999), and with them, as Anderson (1999:118) says, it is much harder to see grounds for a productive interaction and exchange of ideas. In what follows we take it as already proven by many decades of linguistic research within many different frameworks that languages have structure, that such structure has mental reality, and that a core task of linguistic theory is to model structure. Correspondingly, core tasks of diachronic linguistics are (a) to model the way structure can change with the passage of time, and (b) to seek to establish links between structural, system-internal changes and the many external factors that impinge on language use. From the particular perspective of contributors to the present volume, the question is how to embed the synchronically conceived model that is LFG into the fabric of language change.

To choose LFG as a model for investigating language change is thus (a) to accept that languages have structure; (b) to commit oneself to the basic formalist belief in explicit models couched in language independent notations; (c) to seek in the first instance to provide a clear account

of the data under investigation in formal terms; (d) to then ask what other factors may be involved in accounting for the pattern so revealed. Here, the parallel correspondence architecture of LFG is a great benefit. Since no prior assumption is made that all aspects of language are to be modelled in terms of a single set of primitives such as Merge and Move, LFG leaves open the possibility of treating not just syntax but all aspects of language as autonomous and representable as different types of structure. In any given instance it then becomes a matter of rational analysis, experimentation and debate how to link two or more sub-structures and whether the seeds of change might exist at such an interface point (Butt 1997a).

At this point it is perhaps worth just saying something about the word ‘functional’ in the name LFG. In addition to what Noonan (1999) broadly labels West Coast Functionalism, the label functional has been incorporated into the name of at least two other grammatical theories, namely Halliday’s Functional Grammar and Simon Dik’s Functional Grammar (for a useful comparison between the two see Butler 1991 and for a recent assessment of different functionalist approaches Newmeyer 2001a). In all these approaches, the term ‘functional’ is to be understood as a synonym of ‘functionalist’ and proponents of these views are committed to seeing language primarily in its socio-communicative dimension. By contrast, Kaplan & Bresnan (1982:182) state: “There is a systematic ambiguity in our use of the word function: an f-structure is a mathematical function that represents the grammatical functions of a sentence”. Is there just accidental homophony between the two uses of ‘functional’? By and large, the answer must be ‘yes’, but occasional remarks in the LFG literature suggest a desire for something more. Thus, Bresnan (2001b:92):

Economy of expression may be viewed as a special case of the functionalist economy principle articulated by Haiman (1985:158–9) as the avoidance of syntagmatic redundancy . . . Although not articulated explicitly in these terms, something like this principle has been implicit in analytic work in LFG, which has always avoided empty categories or structures empirically unmotivated by overt forms. Another way to think of the principle is to see that it requires each c-structure node to contribute to the overall f-structure; from this point of view it may be better to regard it as a *principle of functionality of c-structure* (emphasis in original).

Once again the architecture of LFG, with its clear separation of different types of structure, opens up the possibility that functional in the

sense of functionalist considerations might be involved in the principles which dictate the correspondence between structures; see our discussion of iconicity in section 1.13.

1.4 I-language vs. E-language

The Chomskyan commitment to linguistics as the study of I-language is well known (see Chomsky 2000a for extended reflections on this central concept in his thinking) and induces the tendency to avoid externalist explanations for change alluded to in the last section. This argument has both a positive and a negative aspect. The positive reasons for focussing on I-language—where ‘I’ suggests internal, individual and intensional (Chomsky 2000a:169)—are familiar: the speed of language acquisition, its untutored nature, the poverty of the stimulus all suggest that humans have a special capacity for language unparalleled in other species and that acquisition is therefore an interactive process involving an innate UG and external ‘triggering’ data. Hale (1998) draws out for historical linguists the consequences of this view, arguing that historical syntax should only concern itself with I-language.

For a historical linguist, the negative part of Chomsky’s argument—that any externalist or extensional notion of language is so incoherent as to be unstudyable—is more troubling, since intuitively at least it seems clear that much language change arises in the external world through language contact, social pressures or simple fashion. Are our intuitions wrong on this point? The evidence of a vast body of sociolinguistic research would suggest not (see now the *summa* in Labov 2001 and pace Hale 1998). Admittedly, the majority of evidence for the Labovian program derives from the domain of phonetics/phonology, and there are genuine conceptual problems in extending the notion of a linguistic variable to syntax. Nonetheless, the fact remains that patterned variation can be found in syntax and changes can be plotted in the historical dimension, as Anthony Kroch and his colleagues have shown in a long string of papers starting with the classic Kroch (1989) and most recently Kroch & Taylor (2000). Indeed, it is hard to see how any account of change could get off the ground without taking into consideration the changes in the external community (e.g., language contact, Lightfoot 1999:11) or the communicative goals of the speaker (e.g., expressiveness, Lightfoot 1991:126). In sum, it may be difficult to understand the way in which change in the external community feeds into change in the internalized linguistic system, but the conceptual problem is a genuine one, and must be faced and not avoided by an arbitrary delimitation of the domain of

inquiry (cf. Pintzuk, Tsoulas & Warner 2000b:9–12).⁶ In particular, it is important to challenge the standard Chomskyan assumption that the language module is hermetically sealed off from other modules and thus cannot draw on general cognitive resources or be influenced by language-external reality, and to pursue inquiry based on other assumptions about the nature of the relationship between language, the individual and society.

LFG by contrast includes no doctrinaire insistence that the object of study is purely I-language. Talking of non-derivational models in general and LFG in particular, Bresnan (2001b:4) notes: “These newer theories are compatible with different linguistic epistemologies drawing on structuralist and functional/typological ideas that have both predated and coexisted with generative grammar.”

1.5 Gradualness

At the same time as calling for clarification of the core term ‘language’, Mark Hale also reminds us of the need to be clear about what we mean by change: “the technical definition of ‘change’ is also seriously inadequate in the existing scholarly literature” (Hale 1998:2). He argues that on the Lightfootian view, change is the set of differences between the grammars (= I-languages) at two consecutive and highly idealized stages, G1 and G2. Change “therefore has no temporal properties . . . change is, by definition, instantaneous. . . . The notion of a given change being ‘more rapid’ than some other change is thus not coherent” (ibid:3). By the same token the debate over the gradualness or otherwise of change ‘seem[s] irrelevant’ (ibid:note 8). If the matter were so simple, one might ask why scholars of so many different persuasions could have thought change was gradual. The obvious response is that they had something different in mind when they used the word ‘change’.

A similar view to Hale’s is expressed by Andersen (1989:11): “in linguistics the word ‘change’ has come to be more of a liability than an asset”, and he proposes therefore to substitute the term ‘innovation’. It is worth quoting the relevant passage in full:

In order to describe effectively the reality of diachronic developments, I use the term ‘innovation’ to refer to any element of usage (or grammar) which differs from previous usage (or grammars). The notion of innovation make it possible to break down any diachronic development (‘change’)

⁶Matthews (2001:113–117; in press) once again draws a parallel with the dilemma that faced structuralist models of change in the 1950’s and Coseriu’s attempt to resolve them.

into its smallest appreciable constituent steps. The notion has sufficient flexibility to allow ad hoc qualification—we can recognize passive innovations, in decoding competence, along with active ones, speak of collective as well as individual innovations, or consider a train of cumulative innovations as a single innovation—without losing sight of the term’s ideal, minimal extension. (Andersen 1989:13)

Andersen here seems at once to agree and disagree with Hale. His reference to ‘the term’s ideal, minimal extension’ appears to imply that a true innovation is, like Hale’s change, an instantaneous difference between grammars. Yet he contrasts innovations with changes, and allows that the latter have their ‘constituent steps’.

If we agree with Hale and Lightfoot that the only object of inquiry for the diachronic linguist, as for the synchronic linguist, is I-language, then the debate over gradualness may well disappear in a puff of terminological smoke. If on the other hand we take the view that the phenomenon of natural language has both an ‘I’ and an ‘E’ aspect, that it is at the same time both internal and external, individual and social, then the question of gradualness is back on the table. The Hale-Lightfoot response is to argue that the activation of a change is abrupt but its diffusion is gradual; and that the ordinary language term ‘change’ unhelpfully collapses these two logically and temporally distinct phases into one. Compare here Pintzuk, Tsoulas & Warner’s (2000b:1) remark: “What is normally identified as language change in the most general sense is in fact the result of diffusion as well as acquisition”. There is reason to believe that things may be a bit more complex than that, however. In particular, even when we restrict our focus to a change in a piece of linguistic structure, that is to say to an internal change, we may still find that a change can take many years to work itself out. Allen in this volume shows how the creation of the English dative passive construction—as in *He was given a book*—was the product of a series of shifts working item by item through the lexicon. The point about this example is that if by change we are allowed to mean the emergence of a new construction such as the dative passive, then we must in turn allow for gradualness in the sense of a step-by-step coming into existence of a new pattern or construction. A similar view had already been expressed by Lichtenberk (1991) vis-à-vis certain types of grammaticalization. Not the least of the merits of Allen’s chapter is to show that independently of the issue of grammaticalization (to which I return in sections 1.8, 1.9 below) it is coherent to talk of a change as building up by a series of lexical steps, and it is the existence of exactly this kind of possibility that a model such as LFG

predicts should be possible. Lightfoot's protestations about the excessive power of features in the lexical modelling of shifts (1991:126–127; 1999:85–87) sound hollow when placed beside careful and empirically detailed studies of the kind that Allen has undertaken.

Butt's contribution to this volume illuminates the question of gradualness from a different angle. She takes it for granted that much or even most change is gradual "in the sense that bits and pieces of language may change without cataclysmically affecting the rest of the language, or only bringing about a complete paradigmatic revision over a long period of time" (this volume). She then goes on to show how even an apparently cataclysmic change such as the shift from accusative to ergative marking in Indo-Aryan in fact can, indeed must, be treated as a cumulative shift in the lexically driven casemarking patterns associated with different predicates. Again the attention to the detail of individual constructions is crucial and contrasts favorably with the oversimplifying schematicity of the account of a similar shift offered by Lightfoot (1999:136–141).

It does not follow from either Allen's or Butt's papers that all change is gradual, any more than it follows from Lightfoot's and Hale's arguments that all change is non-gradual. The difference is rather that Butt and Allen allow for different types of change according both to the inherent properties of the items changing and to the construction that emerges. This differential granularity of change is what is missing in much of the generative polemicization about change. Once it is recognized, it follows that we need a model that allows space for both the large-scale and small-scale shifts. LFG is just such a model.

1.6 Abduction and Reanalysis

One concept that has linked the generative and the grammaticalization literature has been reanalysis, whereby a given string is subject to two potentially conflicting bracketings and change occurs when one generation adopts a different bracketing from that of its predecessors. For Lightfoot and others in the Chomskyan tradition, reanalytic change has the advantage of being both abrupt and, apparently, directionless. If the core mechanism of change is reanalysis, then the requirements laid down by Hale (1998) and discussed above are easily met. Given a string [X Y Z], there is no reason why it could not be analysed first as [X [Y Z]] and then reanalysed as [[X Y] Z] or vice versa, or indeed first one and then the other. Change could thus in principle seesaw back and forth. In the dramatic phrasing of Battye & Roberts (1995:11), "change is essentially a random 'walk' through the space of possible parameter settings".

If reanalysis is so central to the generative enterprise in change, one question that springs naturally to the lips is: how come so much stress is laid on it in seminal works on grammaticalization such as Hopper & Traugott (1993:section 3.4)? Are the two groups of scholars in fact talking about the same thing? Reanalysis is also seen as one of the three key mechanisms of change, alongside extension and borrowing, in Harris & Campbell (1995), and this in a book one of whose authors has elsewhere been trenchant in his criticisms of the project of grammaticalization (Campbell 2001). One conclusion then would be, very much as Harris & Campbell intend, that reanalysis is a basic, pre-theoretical term which characterizes the kind of change in which the components of a construction are somehow re-categorized by a succeeding generation of speakers. This could involve a rebracketing but also a reassignment of features, as when the Latin noun *corpus* is treated as masculine singular in the Romance languages since its ending /us/ is that of the predominantly masculine second declension, even though in fact it is third declension and neuter. The evidence that the reanalysis has taken place in such instances is not new syntactic groupings but the fact that the modern plural say in Italian is *corpi* and not *corpora* as it would be if it had continued as a neuter. This example is also consistent with the definition given by Langacker (1977:59) to which most modern users of the term have recourse:⁷ “[a] change in the structure of an expression of class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation”. A framework like LFG is one in which it would be important to stick to Langacker’s definition rather than the usual generative recasting of it in constituency terms since whether the f-structures map onto c-structure or m-structure will depend on the particular instance being studied. Indeed, one might go so far as to argue that Langacker’s is at bottom an f-structure definition of reanalysis (albeit *ante litteram*), and that it takes a model such as LFG to make clear the essential unity of the phenomenon. Haspelmath (1998), although also departing from Langacker’s definition, is keen to demonstrate that reanalysis in this sense is not an integral part of changes which are properly called grammaticalization. He tabulates the difference between the two as follows (1998:327):

⁷The basic idea of a change in which an item is historically miscategorized is in fact one of the traditional sub-categories of analogy, and is sometimes referred to as metanalysis in the older literature.

<i>Grammaticalization</i>	<i>Reanalysis</i>
loss of autonomy/substance	no loss of autonomy/substance
gradual	abrupt
unidirectional	bidirectional
no ambiguity	ambiguity in the input structure
due to language use	due to language acquisition

Croft (2000) also distinguishes structural reanalysis of the kind discussed here from form-function reanalysis, which is a more general concept involving shifts in mapping between the semantic content and the morphosyntactic expression of that content but without even the need for structural ambiguity which characterizes reanalysis in the sense of Langacker (1977). In their different ways, both Haspelmath and Croft are reacting to the centrality of a constituency or configuration based conception of morphosyntactic structure. LFG is one model—though of course not the only one—that accommodates the need to free oneself from a vision of syntax in which configuration is all, and to recognize the separation of form (c-structure, m-structure) from function (f-structure, a-structure).⁸

Amongst contributions to the present volume, the notion of reanalysis is most central to the case study provided by Jane Simpson. This study is particularly pertinent to the foregoing discussion since it deals with a change where a strict linear order (which could, if necessary, easily be reduced to constituency) is part of the outcome of the sequence of changes she describes. Since the change occurs in languages, Warlpiri and Warumungu, which are almost legendary for their free word order, the paradox arises as to how speakers could fix on a given pattern for long enough to gradually transmute it into a piece of bound morphology. Simpson shows how a whole range of factors need to be taken into account if the development is to be explained. First come discourse considerations which give preference to participial constructions in clause margins and particularly in clause initial position. Second, linearization of grammatical relations prioritizes adjunct-verb contiguity. Third, the particular order in which the adjunct precedes rather than follows the verb matches the pattern found in preverb-verb constructions in the language. The outcome of all these factors, whose proper characterization requires all the resources of LFG in terms of a-structure, f-structure, i-structure and c-structure, is the development of a fixed morphologically

⁸For a mapping theory of a different kind but with a similar historically-oriented goal, see Kiparsky (1997).

bound pattern through a reanalysis of the syntactically and discursively preferred string. This is one of the most complex instances of grammaticalization I have ever seen described, and one in which at the same time Simpson's lucid and intricate analysis defies the frequently made claim that the evidence of grammaticalization challenges the formalist program.

1.7 Relabelling

Part of Haspelmath's critique of reanalysis is its use in an unconstrained and imprecise fashion to cover virtually any kind of change. This charge may also be levelled at the more specifically generative use of reanalysis which remains once grammaticalization in Haspelmath's more strictly defined sense has been factored away. Although reanalysis, construed as parameter resetting, is the core mechanism for change seen from the Principles & Parameters perspective, there has been virtually no attempt to impose any constraints on its operation. Indeed, a key point has been that reanalysis is directionless and so the set of possible changes is limited only by what acquirers and speech communities will tolerate. In recent work, however, John Whitman has suggested that reanalyses, whatever else they do, must preserve c-command relations: see Whitman (2000), Whitman & Paul (2001). If true, this is a strong constraint and moreover one that goes to the heart of the debate between lexical-functional and configurational approaches. Since nothing in LFG forces c-command, a successful defence of Whitman's case would constitute a powerful *prima facie* argument against a purely lexical-functional view of change.⁹ Requiring a reanalytic change to preserve the c-command relation allows for three kinds of change. We will illustrate all of these with respect to the category of preposition in Indo-European and Romance (cf. also Whitman & Paul 2001 on the emergence of prepositions in Chinese).

- i. Relabelling: the category label changes but the configurational relations remain the same. This would encompass the commonly attested pattern of grammaticalization in which a verb becomes a preposition (Kortmann & König 1992) or a complementizer (Lord 1976). If a verb meaning 'say' develops into a complementizer, a change which is attested in a number of languages, the string [say + S] will shift from the category VP to the category CP but the

⁹Within the current variants of Principles & Parameters, Whitman's proposal clearly favors the antisymmetry program of Kayne (1994), but that is not a matter that we need pursue in the present context.

internal relations between head and complement will not be disturbed (Vincent 1993:146).

- ii. Pruning: loss of intermediate levels of structure. A case in point would be the development of Latin *de post cenam* ‘lit: from after dinner’ to Italian *dopo cena* ‘after dinner’, where the two Latin prepositions *de* and *post* have fused into Italian *dopo*. Assuming the structure in origin was [*de* [*post* [*cenam*]]] (cf. Vincent 1997:212–3), then a layer of structure has been historically pruned away as a result of the fusion of the two prepositional heads, but without any changes in the c-command relations between the new fused P and its NP (or DP) argument.
- iii. Spec > Head Changes: for example, the development of prepositions in Indo-European languages out of a class of adverbial particles which served originally as specifiers to independent semantic case forms. For instance, Latin *in urbe* ‘in the city’ was in origin the locative case of noun *urbs* ‘city’ with an accompanying adverbial modifier *in* meaning ‘on the inside’. In a configurational model *in* would occupy a specifier position which would be ‘higher’ than the case-phrase. If this specifier then became the head of a new PP it would appear to move ‘down’ the tree but would still c-command the original complement.¹⁰

What is crucially not allowed on Whitman’s view is a change of the type:

- (1) [[X Y] Z] > [X [Y Z]]

In such a change at the input stage X does not c-command Z but at the output stage it does. Whitman (2000) cites as a case of a change proposed in the literature that is ruled out under his account the emergence of the English *for-to* construction by the reanalysis in (2) (Harris & Campbell 1995:62):

- (2) [[it is better for me] [to slay myself]] >
[it is better [for me to slay myself]]

In this instance there is independent evidence against this view since the pattern *for to* VP is earlier by a century or two than the pattern *for* NP *to* VP (Lightfoot 1979a:186–9). The preferable account on empirical grounds whereby *for* comes to take a verbal complement first

¹⁰This particular example is discussed in Vincent (1999), where it is shown that the Spec > Head shift is best seen in functional rather than configurational terms, and an outline LFG account is formulated. Compare van Kemenade (2000) for an analysis in which the Old English negative particle *ne* develops over time from the phrasal category Spec NegP to become the head of NegP, a change interpreted by van Kemenade as morphosyntactic weakening akin to grammaticalization (cf. also section 1.9).

without and later with an overt subject is the only one permitted under Whitman's more restricted view of possible changes.

Whitman's argument is an attractive and challenging one.¹¹ Given the general desirability of more rather less constrained accounts, from an LFG perspective we need to find an equivalent principle. A natural move is to suggest that what must be respected are f-command and not c-command relations (Bresnan 1982:333–340). The two accounts would have equivalent coverage in the case of the *for to* construction. What we need to find—and the search is still on—are crucial cases that would allow us to decide whether it is the functional or configurational structures that are of principal importance.

1.8 Grammaticalization and Lexical Continuity

In discussing Simpson's contribution to this volume we have already had cause to look briefly at the notion of grammaticalization. At the heart of the change she analyses is a lexical motion verb which turns into a suffix indicating the grammatical category 'associated path', a category which expresses the direction of one of the participants in the action identified by the verb to which the suffix is attached. This change fits well with the definition of grammaticalization to which modern writers consistently have recourse, namely that given by Meillet (1912:131): 'le passage d'un mot jadis autonome au rôle d'élément grammatical' (the shift of a formerly autonomous word to the function of a grammatical item).¹² Among the examples he adduced were the emergence of the Modern French marker of negation *pas* from the Latin word *passum* 'a step' and the use of reflexes of the verb *habere* 'to own, possess' in constructions expressing the perfect or the future. In fact, the idea that grammatical markers have their origin in independent items, as Haspelmath (1999:1047) reminds us, goes back to the beginning of the 19th century if not earlier. It would be anachronistic to suggest that earlier scholars had in mind the modern concern for the role of the lexicon in a grammar or our disputes between lexicalist and transformationalist approaches to syntax. Nonetheless, there is a clear and longstanding intuition that languages fall into (at least) a lexical (or open list) part

¹¹ Whitman's argument finds a counterpart in the grammaticalization literature in Tabor & Traugott's (1998) principle of C-Command Scope Increase.

¹² The grammaticalization literature is by now extensive and has many varied aspects which there is not space to treat here. I will thus concentrate on the key idea of grammaticalization as the recruitment of lexical material as the source of new grammatical categories and constructions. In particular, I will leave out of account the important strand of research developed by Traugott and others into pragmatic strengthening, inferencing and subjectivization (Traugott & König 1991, Stein & Wright 1995).

and a grammatical (or closed list) part, and that changes may involve movement of an item from the former to the latter (on the possibility or otherwise of the reverse shift, see section 1.9). Such shifts clearly do not happen overnight, but may take several generations or even centuries to work themselves out. Thus, if real, they challenge the assumptions of the standard generative model of change on three fronts.

- a. because they happen over a long time span, they are not easily reducible to an account of change in terms of intergenerational reanalyses;
- b. because they appear to have a direction, they seem to imply the possibility that the language or the speaker of the language can somehow be aware of past changes and conspire teleologically to perpetuate a pre-existing historical process;
- c. because they suggest a continuity between components of grammar that are normally thought of as discrete.

The generative response has been twofold. Some scholars—such as Lightfoot, Newmeyer, and Janda—have sought to dismiss grammaticalization out of hand, thus in effect refusing the challenge and denying that grounds for serious scientific debate exist. They argue, as does Campbell (2001), first that there are significant counterexamples to the central and epistemologically most problematic claim of grammaticalization, namely that such change has directionality (see section 1.9) and second that in any case what is called grammaticalization can be reduced to independently available and conceptually more primitive categories of change. These critiques are forcefully expressed but not always convincing, largely because they do not in fact remove the principal conundra for theoreticians of language change that grammaticalization data pose: (a) that such changes seem to have direction and that this holds regardless of whether they are considered to be semantic or grammatical; (b) that there is a high, though by no means absolute, correlation between these semantic/syntactic changes and the phonological reduction of the items in question. Other generative theorists, notably Ian Roberts, recognizing the force of these conceptual challenges, have taken up the gauntlet and sought to argue that the generative model can provide an account of these phenomena and indeed one that, precisely because it is underpinned by independently required theoretical constructs, is superior to that offered by the original proponents of grammaticalization theory (see Roberts (1993b, 2001); Roberts & Roussou (1999, 2000)).

Roberts & Roussou in particular argue that the development from lexical to grammatical item can be reconstructed in Minimalist terms as being from a lexical category to a functional category; that a lexical head

and a functional head are standardly linked in the synchronic grammar by movement; that, whenever there is a choice, generating an item *in situ* will be treated by the learner as preferable because more economical than postulating a movement operation; and thus that in the general case learners prioritize Merge over Move. However, eliminating Move comes at a cost, namely that any properties that depend on an item's originally occupying a lexical head position, most notably the power to license theta-roles, must thereby be lost, so an item generated in a functional head position is necessarily semantically weaker ('bleached') than one that has moved there. In effect, looked at from the perspective of a Minimalist model, grammaticalization is grammar simplification (Roberts & Roussou 1999:1035). Given Minimalist assumptions, this is an attractive (no pun intended!) account, but it crucially depends on the proliferation of appropriate functional heads, and on the postulation of an F^* feature, effectively a grammaticalization feature, marking those heads which require overt phonological realization and thus are identified as positions where grammaticalized items are generated. It is therefore not clear how this model avoids the charge of circularity.

Within the Principles and Parameters framework, van Kemenade (2000) takes a somewhat different tack, seeking to show that the negative marker in English has undergone a shift from specifier to head and that this morphosyntactic change precedes the semantic weakening of the negative item. This is an interesting and original line of argument but it crucially depends on assumptions about structure, including functional heads, which are, as van Kemenade freely admits, somewhat underdetermined by the available data. The best that we can say at this point is that the jury is still out. Let us instead turn to some LFG-based studies where functional heads need only be posited if there is strong empirical evidence in support of them; they are not integral to the working of the theory itself as they are within the Minimalist Program, particularly its Kaynean variant which has proved attractive to a number of historical syntacticians.

Several studies in this volume take up the challenge of providing a formal account in LFG terms of changes that fall under the rubric of grammaticalization. They are usefully complementary in that Simpson's study (discussed in section 1.6 above) involves the full progression from independent lexical item to bound morphology which typifies many grammaticalization changes, while Schwarze's study focuses on the development of a new class of auxiliary verbs but without attendant morphologization. Moreover, where Schwarze reworks a dataset that has already been the subject of extensive study, and thus shows how the formal model can shed new light on an old problem, Simp-

son explores new territory and extends the reach of the model into a type of construction not widely evidenced within the existing body of historical syntactic research. Toivonen on the other hand examines the way the value of what was already an affix changes as another item in the construction in question changes its status from topic to possessor. She offers an intriguing study of changes in the binding properties of pronominal and suffixal possessors in standard Finnish and Finnish dialects. Her account provides an interesting pendant to the history of English anaphors discussed in Keenan (2000). Keenan notes that the standard binding-theoretic treatment of the contrasting distribution of English *him/her* and *himself/herself* interprets the modern facts as a special case of the universally applicable binding conditions, whereas, as he bluntly puts it, ‘they are just claims about English words; they are not remotely universal. In fact *himself* need not be locally bound in Middle English and doesn’t exist in Old English’ (Keenan 2000:1). Keenan shows how the development of the English *-self* pronoun set forces a restriction in the range of the pronouns *him/her* which lose the power to act as anaphors once the reflexive series has emerged. Toivonen’s is an elegant demonstration of how an exactly parallel effect can arise in a typologically different binding system, namely one in which the reflexive forces co-reference with the local subject and the non-reflexive disjoint reference (cf. the behavior of Danish/Norwegian/Swedish *hans* vs. *sin*). In her Finnish data, however, it is the change in the status of the binder (rather than the bindee) from topic to possessor that forces a change in the lexical entry to be associated with the bindee, i.e. the third person suffix. If the pronoun is a topic then the suffix is bound by it and effectively acts as a pronoun itself; once the pronoun becomes a possessor then the suffix can only act as an agreement marker. These changes follow from a simple adjustment in the lexical entries of the items in question, in particular through the loss of the PRED feature of the suffix. This parallels the analysis of the English third person marker *-s* in some Yorkshire dialects as analysed by Börjars & Chapman (1998).

A distinction between items which have a PRED feature and ones which do not is also at the heart of Schwarze’s analysis of Romance perfect and passive auxiliaries. The origin of a perfect such as French *j’ai écrit la lettre* ‘I have written the letter’, where *ai* ‘(I) have’ is a PRED-less tense auxiliary, lies in a Latin construction *habeo litteras scriptas* ‘I have the letter written’, where *habeo* ‘I have’ is a full lexical verb with its own PRED value and semantic content ‘have, be in possession of’, and which subcategorizes for an XCOMP headed here by the participle *scriptum* ‘written’. The version of LFG he adopts is the original Bresnan & Kaplan one in which lexical entries are expressed in terms of atomic

grammatical relations SUBJ, OBJ, etc. The line of analysis he proposes does however extend naturally into a version of LFG supplemented with Lexical Mapping Theory (LMT), thereby allowing the lexical entries to be encoded in terms of semantic roles. Vincent (1982) provides the basis for such an account by proposing the following analysis of *habere* and *esse* (though not at that time couched in explicitly LFG terms):¹³

- (3) *habere* < LOCATIVE, THEME >
esse < THEME >

Assuming the mapping principles of Bresnan & Kanerva (1989), Schwarze's lexical entries follow naturally:

- (4) *habere* < SUBJ, OBJ >
esse < SUBJ >

More significantly, the LMT analysis predicts the switch of voice in the past participle from Latin, in which the freestanding participle *scriptum* had a passive value, to Romance in which the periphrastic participle has an active value. If we assume the entry for *scriptum* 'written' to be <AG, THEME>, and if we further assume fusion of *habere* and *scriptum* in the way Schwarze suggests, then we have a complex predicate *habere scriptum* < AG, THEME>. Applying LMT to this entry will yield *habere scriptum* <SUBJ, OBJ>, in effect turning the passive participle into an active one. *Esse* by contrast needs a theme subject and so will only work when combined with passive participles or with unaccusatives. A fundamental and traditionally observed link between passive and perfective is thus neatly captured.

Schwarze also shows how an LFG account can be formulated to cover two other passive auxiliaries in Italian: *venire* 'come' but also an alternative auxiliary passive (with no motion meaning) used principally with agentive verbs, and *andare* 'go', which likewise loses its motion sense but acquires a deontic meaning. Thus Italian *il libro va letto*, literally 'the book goes read' comes to mean 'the book must be read'. The analysis makes clear too how the process of grammaticalization involves a given lexical item developing within a given construction. The crucial role of the construction emerges in fact in different ways in all the papers in this collection and underscores the message of Traugott (in press).

¹³I gloss over substantive differences in the analysis of the origins of the Romance 'have/be' alternation between the two accounts. As Schwarze notes (footnotes 25 and 26), his account differs from that usually assumed in which the grammaticalization of the 'be' auxiliary is later than and complementary to the grammaticalization of 'have' (Vincent 1982). Whatever the outcome of this controversial issue, he is surely right to dismiss Tekavčić's areal argument (cf. already Vincent 1982:87) in favor of the priority of the 'have' construction.

1.9 (Uni)directionality

As we have said, modern grammaticalization studies take their lead from Meillet (1912), who saw in the process of grammaticalization the principal means by which new exponents of grammatical categories, and indeed new grammatical categories themselves, could emerge over time, and he contrasted it with analogy which was responsible instead for the extension of existing patterns. If the perspective on a change is its endpoint—say periphrastic rather than inflectional exponence of future tense or perfective aspect—then it is natural to view such changes as having a direction, as leading from the point of origin of the grammatical marker as an independent lexical item to its current function as an auxiliary or an inflection. From a theoretical point of view, however, the key question is whether things have to be that way. Could an item zigzag from lexis to grammar and back again? Could an item start to move in the direction of greater grammatical function and then retrace its steps? Is it even legitimate to talk about the separate stages in such a development as forming some larger change, given that each stage is an autonomous event, mediated through the discontinuous mechanism of language acquisition, which cannot have any knowledge of other stages, let alone of the direction in which those other stages might be leading? These are all questions that are raised by the claim, made strongly in early work on grammaticalization, that this kind of change is unidirectional. On this view grammaticalization changes can only go in the direction main verb > auxiliary verb, verb > preposition, and so forth. As Newmeyer (1998:ch 5, 2001b:section 4) and Campbell (2001:section 3.3) note, it is useful to distinguish whether this frequently observed directionality is built into the definition of grammaticalization or whether it is an empirical hypothesis thrown up by research within this framework. If the former, then any instance of a change that appears to be going the other way will be an instance of something else, which may perhaps be called lexicalization, and we will then need a theoretical account of how the two processes interact. If the latter, then the hypothesis needs to be checked out and potential counterexamples need to be probed in detail. Either way there is work to be done.

Interestingly, the seeds of a negative answer can be found in Meillet's own writings. In his seminal work on semantic change he identified two contrasting ways in which words might change their meaning: generalization and specialization (Meillet 1904–5). The former is instanced by changes such as Latin *adripare* 'to reach the shore' (cf. Latin *ripa* 'shore, bank') which gives French *arriver*, Italian *arrivare*, first with the more general meaning of 'to arrive' regardless of whether the point of origin

is on land, sea or air, and later with the even more general meaning ‘to happen’, i.e. as it were to arrive on the scene of events. Other examples are Modern English *bit* ‘piece (of any kind)’ < ‘a piece bitten off’; *bunch* originally of flowers, etc. (i.e. things bound together) then of any count noun (e.g., *a bunch of people*) and more recently of at least some mass items (*a bunch of bullshit*). Changes in the converse direction are found in French *traire* ‘to milk’ < Latin *trahere* ‘to drag’ (cf. Italian *trarre* ‘to pull’) or in English *lust* ‘sexual desire’ beside the original Germanic meaning of delight or desire of any kind (cf. German *Lust* or Danish *lyst*). It is easy to see semantic generalization as the precursor of grammaticalization—cf. Hopper & Traugott 1993:96ff. And indeed the passage from the meaning ‘arrive’ to the meaning ‘happen’ is already a partial grammaticalization on the assumption that *happen* can be treated, in one of its senses, as a raising verb and therefore one whose subject argument has been semantically vacated (cf. Barron, this volume). But if items can also specialize their meanings, what would stop say *arriver* going back to its earlier use? The alternative, ‘random walk’ view of change would predict just such a possibility. One semantic domain where it was originally thought that there was a clear directionality evidenced in change is modality. Modal verbs in many languages typically have both deontic and epistemic meanings and the hypothesis was advanced (e.g., by Sweetser 1990) that deontic meanings are historically prior to epistemic ones. More recently however van der Auwera & Plungian (1998) have shown that what they call the ‘semantic map’ of modality has many more attested routes than this and that changes of direction are possible not only within the modal domain but even back out of it, so that for example Modern Swedish *må* ‘feel’ is a later development from a verb that originally meant ‘may’ (and indeed is cognate with English *may* < OE *mæg*). In similar vein, Beths (1999) documents a reversal in grammatical status within the history of English *dare*. One possibility is that modality is a semantic domain which lies between the fully lexical (as in say the expression of knowledge, belief and desire) and the fully grammatical (as in say the expression of time), and it is only once items have moved into a fully grammatical function that they cannot shift back. However, before such large questions can be sensibly addressed what are required are more studies of the detail of changes that can be considered as intermediary between semantic and grammatical change. The paper by Barron in this volume is a welcome beginning (see also section 1.10 below), and brings new light to these questions not least by virtue of formulating them within a formally defined system.

The foregoing then represents one potential type of counterexample to the strong unidirectionality hypothesis. Another commonly cited type

involves shift from a minor category such as preposition or conjunction to a major class such as verb or adjective. The cliché examples here are English verbs like *to down* (*a beer*), *to up* (*the ante*) and adjectives like *iffy*. However, the phenomenon is more widespread (see now Plank 2001 for a rich collection of examples). The principal mechanism at work here seems to be morphological conversion, well attested between verbs, nouns and adjectives in either direction and hardly surprising in itself. Nor does there seem to be any reason to be surprised if this process is extended to other categories. What one does not find in these cases is gradual shift, with semantic bleaching, of the kind so frequently described for the core cases of grammaticalization. It is legitimate to think therefore that a change say of preposition to verb is different in kind from a change from verb to preposition and hence that there is not a reversal of directionality involved in such circumstances. Something similar also seems to be involved when an ending is detached and used as an autonomous lexical item, as in English *isms* or *teens*. Speakers of all language show great enterprise in adding to the lexical stock of their languages, and anything including the written form (as in acronyms like *laser*) or the spoken form (as in delocutives like French *crier* ‘to shout’ < Latin ‘*Quirites!*’ ‘citizens’) is grist to their mill. This is simply a different phenomenon and not pertinent to the debate over the directionality of grammaticalization.

It is also well known that there are many instances of affixes of various kinds which change their status apparently in an unexpected direction: from affix to clitic, or from inflectional to derivational (cf. the papers in *Language Sciences* 23 for an extensive compilation). In some instances these involve simple morphological resegmentation but in others there does appear to be a genuine shift from a bound form to a free form of the kind which grammaticalization theory would not predict. Whatever else one might say, however, it is clear that among the documented body of changes there is a clear preponderance that go in the direction predicted by the unidirectionality hypothesis. Even allowing therefore all the proposed counterexamples to be genuine and to count against the hypothesis, there is still an asymmetry that needs to be explained. As Newmeyer (2001b:213) phrases it, we need to explain ‘why unidirectionality is almost true’.

From within grammaticalization theory, the answer is that the semantic directionality is simply an instantiation of the cognitive priority of the concrete over the abstract, so that extensions of meaning (metaphors) preferentially go from the latter to the former, with hearers drawing out extended meanings by a process of inferencing (metonymy). Grammaticalization increases the scope of an item, both structurally

(Tabor & Traugott 1998) and informationally (Hopper & Traugott 1993:99), and this is why it never accompanies semantic restriction, which is rather driven by the special social contexts in which such restrictions arise (cf. Meillet's 1904–5 theory of the social mechanisms underlying semantic change). Ultimately, then, grammaticalization is the way it is because that's the way our minds work. The generative answer provided by Roberts & Roussou and sketched in the previous section is not totally dissimilar, except that the view of mind is different and involves the usual Chomskyan conception of the autonomy of the language faculty. Newmeyer's (2001) least effort account is at first sight closer to the proposal by Roberts & Roussou: 'Less effort is required on the part of a speaker to produce an affix than a full form. . . . All other things being equal, a child confronted with the option of reanalyzing a verb as an auxiliary or reanalyzing an auxiliary as a verb will choose the former.' (Newmeyer 2001b:213–4). But put this way such a response begs the question, and clashes with another principle, dubbed Inertia by Keenan (2000), that *ceteribus paribus* things don't change! Least effort, therefore, only works on the assumption that things are going to change just as Roberts & Roussou's account is driven by the randomly distributed formal feature F^* , which is in effect, as we have noted, a grammaticalization feature. Newmeyer also toys with the more performance based view of the cohesive forces in grammatical structure that is to be found in the work of John Hawkins (1994, 2001). A more recent recruit to the debate, and one whose approach is strongly oriented to performance in the sense of parsing is Ruth Kempson—see Kempson, Meyer-Viol & Gabbay (2001)—who has begun to explore the diachronic implications of her model (Kempson & Marten 2001). Performance in the rather different sense of the pragmatic principles that guide usage and the communicative goals of the speaker also underlies Haspelmath's (1999) production-as opposed to perception-based account of the asymmetry of grammaticalization, which resides on his Maxim of Extravagance, an updated version of the old notion of expressiveness as a force in change.

Where, one might legitimately ask, does LFG fit into all of this? The literature just surveyed offers a plethora of options—speaker-based accounts vs. hearer-based accounts, semantic vs. syntactic accounts, individual vs. social accounts. Is LFG more naturally compatible with any one of these? The answer is, I believe, no. What these debates do show however is that the phenomenon of grammaticalization, and particularly its directional asymmetry, are real and in need of explanation. Crucially, they can be modelled in LFG and, I would argue, more directly and elegantly than in a movement-based derivational framework such as Minimalism. For more on the explanatory power of LFG, see section 1.14.

1.10 Syntax vs. Semantics

Just as the Chomskyan approach privileges psychological over sociological answers to questions about language structure and change, so it looks to find syntactic rather than semantic underpinnings for grammatical phenomena. Once again, proponents of grammaticalization would disagree, pointing to recurrent patterns of semantic change leading to the development of new items. If verbs of volition become, as they do, markers of futurity in a wide range of genetically unrelated languages (English *will*, Greek *tha*, Swahili *-ta-*, etc.), this must surely be because of a natural semantic link between desires which are typically oriented towards events and circumstances yet to come and the future time which will, one hopes, see the fulfilment of those desires. At the same time, the grammaticalization literature can legitimately be criticized for its failure to do much more than point to these recurrent semantic links and for not providing a detailed account of the stages that are involved and of the model of lexical and grammatical structure that is thereby implied (although see Traugott 1996). An important step towards plugging this gap is taken in the present collection in the chapter by Julia Barron. She takes a class of verbs that have been a staple of the transformationalist literature since its earliest days, namely raising verbs and in particular *seem*, and explores their implications for a theory of grammatical change. The first stage in the argument is to show that the classic control vs. raising split is not sharply dichotomous but represents a cline definable in semantic terms. From this it follows that the neat theoretical edifice constructed in terms of PRO subjects for complements of control verbs and movement traces for subjects of raising verbs will have to be dismantled, and an account involving more finely gradated semantic representations used instead. Interestingly, at this point Barron has recourse to the account of lexical semantics developed within Role and Reference Grammar, suggesting a closer affinity between these alternative non-transformational models than is sometimes assumed.

A second key point is that the mechanisms involved here are very similar to those involved in grammaticalization. One is reminded of Bolinger's typically perceptive observation that "The moment a verb is given an infinitive complement, that verb starts down the road of auxiliarity." (Bolinger 1980:297, quoted by Heine 1993:27). For a verb to develop into a raising verb involves the loss of theta-role assignment to one of its argument positions, a kind of semantic bleaching. If a verb goes on to full auxiliary status—as happens with perfective 'have' as discussed by Schwarze—the bleaching goes a step further and both subject and object arguments lose their independent thematic value. Nonetheless, even

after the stage at which it becomes a perfective auxiliary, Latin *habere* remains a two-place verb and hence can only act at first as auxiliary to transitive verbs (Vincent 1982). Generalization as the single auxiliary of a language like Spanish typically takes much longer—several hundred years in the case of Spanish—and significantly involves the lexeme by lexeme recession of verbs taking the ‘be’ auxiliary (Benzing 1931). Just as Allen shows in her paper in this volume that a construction can grow by lexical increments, so Barron opens up the possibility of lexically driven loss. Either way, a framework like LFG is a natural candidate to model such changes.

A further property of LFG that is valuable to all of Allen, Barron and Schwarze in working out their analyses is a negative one: it does not have a theory of Case with a capital C! The merits of this lack are underscored in Butt’s chapter. Some natural languages such as Sanskrit and Urdu have morphological case systems, and in such a situation, as Butt clearly demonstrates, the case/argument alignments may change over time. Moreover, when they do, the changes typically involve semantically definable classes of predicates (control, experiencer, etc.). The need for morphological case and some account of semantic roles, and of the relation between the two, is thus unavoidable. What is not needed is an extra system of syntactic or abstract Case as in various incarnations of the Chomskyan model. It would take us too far afield to recapitulate the history of the Case module within GB/Minimalism, but it is worth noting that within Minimalism Case features are virtually the only [–Interpretable] ones.¹⁴ They thus have to be eliminated before either of the interfaces, and are thereby clearly revealed for what they are, namely just technical devices engendered by a formal architecture which permits syntactic movement and hence needs a specially-designed sub-theory to keep track of movement. The conceptual clarity that emerges once a theory of syntactic Case is done away with is not the least of the merits of LFG.¹⁵

¹⁴The mysterious EPP feature is another such (Chomsky 2000b:102).

¹⁵A good example of confusion introduced by an appeal to Case Theory is the account of changes in English experiencer or ‘psych’ verbs offered by Lightfoot (1999:125ff). Lightfoot avails himself of a principle, much cited in the generative literature, called ‘Burzio’s Generalization (BG)’ which links availability of semantic arguments to the presence of syntactic Case, and which if true, would provide a strong argument in favor of the latter. However, the generalization itself has been widely challenged and, to make his account work, Lightfoot is forced to have recourse to a ‘version’ (p.133) of BG which in fact links structural Case to nominative subjects rather than theta-positions and thus undercuts the empirical basis of the original principle.

1.11 Variation and Change: The A~B Scenario

A fundamental contribution of William Labov and other workers within the variationist, sociolinguistic paradigm that he originated has been to show that variation and change are inextricably linked (for an up-to-date survey, see Labov 2001). This insight has proved difficult to translate directly into the domain of syntax because it depends crucially on the idea that linguistic variables have values that are linguistically equivalent but sociolinguistically distinct. Thus, in terms of the functioning of the linguistic system it doesn't matter whether New Yorkers do or do not pronounce [r] in *fourth floor*, but their choice does have clear consequences when it comes to signalling social categories and allegiances. Syntactic items on the other hand are rarely if ever completely synonymous. Hence, saying A rather than B will usually convey a distinct meaning and it will be difficult to determine whether the speaker's choice is driven by the cognitive content of the message conveyed or by social factors. Despite this unresolved paradox, it is standard in the grammaticalization literature to conceive of syntactic change as involving three stages:

- i. when a given grammatical domain is covered by a single construction A;
- ii. when a new construction B competes with A for the expression of some or all of the same grammatical meaning;
- iii. when B wins out over A and thus appears to replace it.

Schematically, we have (Hopper & Traugott 1993:36):

$$(5) A > A \sim B > B$$

The two forms or constructions A and B thus come to compete with each other. As Hopper & Traugott (1993:123) note: "Rather than replace a lost or almost lost distinction, newly innovated forms compete with older ones . . . this competition allows, even encourages the recession or loss of older forms". Logically, of course, once there is competition between A and B, it is not necessary that the innovating form B should be the winner. Assuming that competition will tend to be resolved by the elimination of one of the competing variants, it could just as well be B that is repulsed by the existing form A. No doubt in the past there have been many such failed coups, so to speak, where the existing order has remained unchanged. They are however likely for the most part to go unnoticed unless the historical record is extraordinarily detailed. All a model of grammar is required to do therefore is provide a means whereby the forms A and B, and the constructions they are part of, can be represented and their partial or total equivalence expressed. This

is something a parallel correspondence model like LFG is particularly well equipped to do. A morphological element such as a case or agreement affix and an independent syntactic item such as a preposition or a possessive pronoun can translate into equivalent f-structures, thus providing a formal model of the competing variants which lie at the base of grammatical selection and hence change. The chapters in this volume by Toivonen and by Simpson are clear cases in point; see too the diachronic scenarios sketched in Börjars & Chapman (1998) and Vincent (1999). In recent work, Vincent (2000, 2001) has argued that the incorporation of OT thinking into LFG may provide an even better model of this competitive aspect of grammatical change (see section 1.13 below for more discussion).

However that may be, it is clear that LFG scores over a derivational approach such as GB/Minimalism in two respects. The first is representational. The existence of grammatical competition is not a new result in work on syntactic change. The work already cited by Anthony Kroch and his colleagues has clearly demonstrated the existence of competing word orders at various points in the history of English, and has shown the statistical trajectories involved. Their underlying model of grammar is a configurational one, in which either the competing patterns are generated by two parallel grammars (Kroch 1989) or else alternative functional heads are postulated as a way of encoding different movement possibilities (Kroch 1994, Pintzuk 1998). The ability of LFG to encode structural differences directly into the relevant sub-parts, be they morphological or syntactic, of the overall representation of the clause is decidedly more elegant and perspicuous.

The second advantage is conceptual: LFG can capitalize on an important insight of work in the grammaticalization tradition, namely that morphosyntactic innovation can arise directly as a result of changes in what Martinet called the first articulation of language, that is to say the grammar-meaning dimension. As innumerable studies have now shown, the driving force for grammaticalization lies largely in the expressive needs and pragmatic goals of the speaker (Hopper & Traugott 1993:ch 4; Heine et al 1991:ch 3–4). Such changes can, within LFG, be modelled directly in the content of items at i-structure, c-structure, f-structure or m-structure as appropriate, and as Toivonen shows, a change in one can automatically force a change in one (or more) of the others. Orthodox generative accounts tend to rely instead on changes in the morphophonemic side of language—Martinet's second articulation—to trigger syntactic shifts. Thus, Roberts (1997) suggests that sound change erodes nominal morphology, and this in turn, under the assumptions of Kayne (1994), forces a syntactic movement and hence the shift from OV to VO

order attested in the history of English. In similar vein, Roberts & Rousou (2000) argue that it is the loss of the infinitive marker in English which leads to the development of a separate category of modal verbs and of associated changes in the structure of the clause. All this is strangely reminiscent of the Neogrammarian insistence on the power of ‘blind’ sound change as the ultimate determinant of linguistic change, a view recently re-endorsed by no less a figure than William Labov (2001:12): “it can be argued that change in the surface phonetics remains the driving force behind a very large number of linguistic changes, perhaps the majority”. The evidence of grammaticalization argues forcefully against this conclusion, and thus in favor of a model in which each separate component can provide its own impetus for change. Once again, LFG is such a model.

1.12 Obsolescence

Variation leads naturally to the question of obsolescence. Just as new patterns may enter a linguistic system, so old ones disappear or become obsolescent. Since, as we have just seen, a new pattern does not necessarily force an old one out, we need to find motivations for loss in language which are, at least in principle, separate from the motivations for gain. In a frequently cited passage, Lightfoot (1991:127) writes: “. . . obsolescence requires a more indirect approach and thus an analytical framework of some abstraction—certainly of greater abstraction than a purely lexical model.” The claim is that a model based on parameter resetting has an automatic explanation for obsolescence. If the value of a given parameter is reset within a given community—e.g., from head-final to head-initial—then patterns conforming to the old parameter setting have virtually no choice but to drop out of the language, or at least to remain only in marginal and fossilized expressions. Thus, argues Lightfoot, an abductive, parameter resetting model of change predicts obsolescence but a lexically based model does not.

The above passage is by way of prefacing Lightfoot’s discussion of the history of English psych verbs, in particular *like*. The problem here is to understand how the Old English verb *lician*, meaning ‘to please’ and having its Theme role mapped into the subject function, could change into the Modern English verb *like*, where the subject expresses the Experiencer and the Theme is the object. Lightfoot’s account sees the shift as the inevitable consequence of the word order shift from OV to VO and the loss of case marking on the nouns. This individual lexical shift follows inexorably from the larger syntactic changes, which render the former usage obsolete. Once again it required careful detective work on

the part of Cynthia Allen (1986) to show that the details of the change do not correspond to the broadbrush scenario sketched by Lightfoot. Not only do nominative experiencers only arise with *like* in the 14th century even though the word order change is dated to the 12th century, but other verbs undergo the same shifts both earlier and later. Once again the shift is at the level of individual lexical items. For each of these it is true that the development of a new pattern of lexical mapping causes the old one to disappear, and thus there is so to speak obsolescence at the level of the lexical item, but there is certainly no argument here against a lexically based approach to natural language; indeed quite the reverse is the case. (See Allen 1995:chapters 2&3 for a fuller treatment of this topic and an explicitly worked out LFG analysis, and for a comment on the logic of Lightfoot's argument from obsolescence, Vincent 1989.)

A case of grammaticalization leading to obsolescence due to the incompatibility of two competing lexical entries is the loss of the Latin future active periphrasis *-urus esse* discussed in Vincent & Bentley (2001). This construction, alluded to briefly in Schwarze (this volume), is made up of the future active¹⁶ participle formed with the suffix *-urus* plus forms of the verb *esse* 'to be', thus for example *facturus sum* 'I am about to do'. Vincent & Bentley (2001) show that the only plausible explanation for the loss of this phonetically robust and structurally well integrated pattern is the emergence of the *habere/esse* alternation in perfect auxiliaries described by Schwarze and developed further in section 1.9 above. The perfective construction requires *esse* to take only Theme subjects when combined with a participle, and this is incompatible with the survival of the *-urus* periphrasis, which allows subjects of all kinds including Agents (as in the above cited *facturus sum*). Assuming that the natural way to handle such constructions is through complex predicate formation followed by lexical mapping of the argument structure of the whole complex (Butt 1997b), then we have here an instance of obsolescence being forced by a mechanism other than parameter resetting, and one moreover that builds crucially on a theoretical construct available only within LFG.

1.13 Optimality Theory (OT) and Syntactic Change

The reception of OT modes of thinking within syntax has been mixed and has had the interesting consequence of dividing researchers along new lines. Since OT is not a theory of syntax but a way of interpreting such theories it is possible to agree on the (de)merits of OT while still adhering to different theoretical frameworks. Thus, amongst those who

¹⁶Not passive, *pace* Schwarze.

work in LFG there are some who argue strongly for an OT interpretation (notably Bresnan) and others who are less convinced. For some studies which apply the insights of OT/LFG to problems of syntactic change, see Vincent (1999, 2000, 2001) and Börjars (2001) in addition to the chapter by Simpson in this volume. For work more generally on OT and change, see Holt (2001). Let us look briefly at a case for importing the logic of optimality into the study of syntactic change.¹⁷

All the Romance languages exhibit a class of items known as clitics, and in all the modern languages, these items occupy one or more of a number of syntactically determined positions in relation to the verb. Thus, in French clitics always occur in a cluster proclitic to the verb whose arguments and/or adjuncts they express. In Italian and Spanish on the other hand, clitic clusters are proclitic to finite verb forms and enclitic to non-finite ones. Both languages also allow the possibility of clitics occurring adjacent (proclitic or enclitic as appropriate) to a modal or aspectual verb which governs the verb whose argument/adjunct roles they fill (clitic climbing). Portuguese is yet more complex, and allows the position of the clitic to vary according to whether the subject is quantified or not. It was not ever thus. In Latin the ancestors of the modern pronouns for the most part followed Wackernagel's law and occurred in second position in their clause regardless of the category of the item that preceded or followed them. Put at its most simple, the Latin distribution was prosodically determined whereas the modern distribution is dictated by syntactic principles, albeit different ones in different languages, and at different times in the history of one language. Anderson (2000) shows how in an analogous situation in Serbo-Croat the second position effect is economically and naturally derived through the interaction of two constraints, one (EDGEMOST) which forces certain items to the edge, in this instance the left edge, of the clause, and the other (NON-INITIAL) which forbids unstressed items from occupying absolute initial position. Second position then represents the best reconciliation of these conflicting needs. Although Anderson's account is not explicitly cast within an LFG framework, his approach shares with LFG the idea that clausal properties can be stated as a unhierarchized set of features, and with OT/LFG the idea that linearization can be stated in terms of violable and mutually conflicting constraints. Legendre (2000) extends Anderson's approach to Bulgarian, where similar facts hold except that the clitics must always be adjacent to the verb, much as in modern Romance. She shows how this can be achieved by varying the domain over which constraints hold, so that some are prosodic and operate within the

¹⁷The argument and the data that follow are taken from Vincent (2001).

domain of the Intonational Phrase and others are syntactic and operate within the domain of the VP. Once again such an account obviates the need to appeal to a series of functional heads to identify the position of the cliticized items in different constructions. Vincent (2001) then takes the insights of Anderson and Legendre and shows how they provide a neat account of the Romance developments summarized above. In particular, Latin has a default strategy that makes the finite verb leftmost and thus sets up the context in which clitics can be reanalysed as postverbal (Wanner 1987). Topics compete for initial position, however, and thus set up an alternative pattern: TOPIC-cl-VERB. Out of this grows the so-called Tobler-Mussafia Law, a special Romance sub-case of the better known Wackernagel's Law. The modern Italian and Spanish stage is reached due to the fact that non-finite forms (infinitives, gerunds and participles) typically do not have overt subjects and so there is no competition for the initial slot within the verbal constituent, thus allowing the reanalysis that the clitic is in fact obligatorily attached after the non-finite verb. Finally, the French pattern arises when the distribution appropriate to finite forms also generalizes to non-finite ones. As noted, what is crucial to this whole line of thinking is (a) a view of grammatical representations as sets of features and (b) the option of allowing different structural properties to take different priorities vis-à-vis each other at different moments in history. Property (a) is of course at the heart of a model like LFG while property (b) captures the essence of OT thinking. Blending the two provides a powerful tool for historical analysis.

Optimality considerations also impinge in an interesting and productive way on a classic explanatory principle of the functionalist literature, namely iconicity. It has long been suggested that natural languages obey some kind of constraint whereby in either a quantitative or a qualitative way form mirrors content, and that with the passage of time changes will conspire to maximize the applicability of such a principle. We know of course that the principle does not—and could not—hold at the level of individual lexical or morphological items in virtue of Saussurean arbitrariness. Nonetheless, once we move above that level and look at how such items are put together in larger combinations, there is considerable evidence for iconicity at the level of morphological formations (e.g. the so-called One Form One Function constraint, Nyman 1987) or at the level of syntax (e.g., topic-first as a natural principle of information ordering, Haiman 1983, 1985). As Haiman had already noticed, there is a potential conflict between iconic motivations, which will favor overt, clearly segmentable structure whenever possible, and a principle of economy of expression which will tend to eliminate redundant aspects of linguistic form or favor the encoding of combinable properties, such as person and

number, via a single inflection (as in Latin) rather than two (as in Turkish). These kinds of arguments have not in general had much influence in Principles & Parameters style thinking either about structure or about change. An exception is Newmeyer (1992, 1998), who has suggested that the different levels of structure within the Chomskyan model can have different iconic properties. Thus, LF would be a level at which scope relations are iconically coded through abstract movement. This argument is fine as far as it goes but it there is still a difference between English, in which the UG-determined scope of *wh*-items is directly reflected in surface syntax and Chinese in which it is not. We leave this potential iconicity of abstract structure to one side in what follows and address instead the question of iconicity between content and overt form, since only the latter is susceptible to change.

The challenge, then, has been to find ways in which the intuition behind a functionalist concept like iconicity can be translated into a formal model rather than being dismissed out of hand because of its somewhat vague and approximate nature. Bresnan (2001a) has approached the problem by suggesting first that iconicity is easily statable within an LFG as opposed to a GB/Minimalist architecture, namely as a constraint on the relations between different representations (f-structure and c- or m-structure). Second, she proposes that its variable presence in the overt morphosyntax of natural languages is due to its OT-style interaction with other potential constraints such as economy of expression or the avoidance of marked structure. This is an attractive and elegant way of reconciling conflicting claims. Moreover, it translates very straightforwardly into the diachronic domain, where change can be seen as due to the re-ranking of the constraints in question (Vincent 2000).

1.14 The Explanation of (Morpho)Syntactic Change

When it comes to studying the causes of change it is legitimate to ask whether one formal model can have a greater claim to success than another. Isn't explanation after all only to be achieved by correlating structural changes with non-linguistic variables? The matter is complex and cannot be engaged fully in the limited space available here, but it is relevant—and important—to ask whether LFG forces any particular take on explanation, and if so, whether there are independent reasons to consider this take preferable to others. Most of what follows in this section is inevitably rather abstract and promissory, given the relatively small number of diachronic LFG case studies published to date, but nonetheless the potential for an original contribution to historical syntax is clearly discernible.

Let us begin by making the standard distinction between internal and external factors (Labov 1994:1–5). Internal factors are those which bring into play other aspects of the linguistic system (where the latter is understood as the set of modules or components which make up a grammar). Such factors may in turn be subdivided into effects within the same module, as in the account sketched above for the loss of the Latin *-urus* construction or as with chain shifts in phonology, and effects which arise at the interface between two modules (Butt 1997a). External factors are then the way that system may be affected by other properties of or pressures on the language user, whether attitudinal (speaker's intention, expressiveness, etc.), psychological (acquisition, perception, processing capacity) or sociological (social class, age, race, etc.; contact with other languages; social norms such as educational prescriptivism and language planning).

Perhaps not surprisingly, internal changes, whether between or within components, are the ones that have been most frequently studied over the almost two centuries that historical linguistics has been a discipline, and the ones that fall most naturally within the compass of any model of natural language structure, formal or otherwise. The sub-domain where LFG most obviously has an original contribution to make is in those shifts which cross the syntax-morphology border, as is typical of many instances of grammaticalization. The fact that morphology and syntax within LFG can have independent and differently-structured representations even though they encode essentially the same grammatical information (Börjars, Vincent & Chapman 1997, Nordlinger 1998) allows the details of the changes to be worked out without the need to reduce one domain of structure to the other. The benefits of this 'constrained independence' between different levels of language can be seen here in the chapters by Toivonen and Simpson. Another LFG-based study in a similar vein is Vincent (1999). By contrast, Butt's chapter demonstrates how information may be rearranged within a single domain, that of case marking, and still give rise to change. Another type of change, this time relating to the phonology/(morpho)syntax interface, concerns the development of clitic pronouns. Still within LFG, Vincent (2000) shows how the emergence of clitics in Romance alters the distribution of null and inflectionally marked arguments, while Vincent (2001) examines the way the conditioning factors for clitic pronouns have shifted from phonology to syntax (cf. discussion in section 1.13 above).

The first kind of external factor, what I have dubbed 'attitudinal', is already in part encoded in LFG through the notion of i(nformation)-structure (see for example King 1995, Choi 1999). As already noted, the paper by Toivonen in the present volume exploits some of these

notions through its postulation of a change from topic to possessor, which parallels a classic grammaticalization path from topic to subject (Vennemann 1974). Similarly Simpson's analysis requires a collaboration between informational and morphosyntactic factors. The way is open for more detailed formal studies of the role of expressiveness and other pragmatic factors in change.

When it comes to the kind of external factor that I have broadly labelled 'psychological' LFG is well placed since it has been extensively used in computational linguistic modelling and in parsing research. It is reasonable to expect, therefore, that whenever these factors need to be brought into play in the explanation of particular historical scenarios, LFG will readily provide the necessary conceptual tools and notations. In dealing with the sociolinguistic aspects of language change, LFG as a model of language structure cannot—and arguably should not—impinge directly on the language external domain. It nonetheless, as we have indicated in section 1.11, can still have much to offer as a model which can be naturally integrated with the general tenor of (micro)sociolinguistic explanations. This will require, to the extent that the problem of synonymy allows, different sub-parts of a construction to be identified as individual variables whose values can be mapped onto a population of speakers, as for example in Beatriz Lavandera's (1975) classic study. A unification-based framework such as LFG is a natural candidate for this role, since sub-parts of a representation can be changed without loss of information for the remainder of the structure.

1.15 Conclusion

In conclusion, then, the following are at least some of the reasons why a view of morphosyntactic change based on LFG should engage our attention:

- it can handle the lexical basis of much change;
- it can thus respond to the empirical challenge of the grammaticalization literature;
- it can do so without giving up the commitment to the development of formal models which is a major legacy of 20th century linguistics;
- it does not beg the issue of realization and thus can provide a representational basis for competing variants out of which change can grow;
- it is thus more naturally compatible with the evidence for sociolinguistic variation as the seed of change;

- it is not forced to see morphosyntactic change as the response to the erosive effects of sound change;
- it does not require an arbitrary distinction between sudden, ‘catastrophic’ changes and other changes;
- it does not prejudge the issue of the ontology of natural language and thereby force a focus on I-language and change in I-language to the exclusion of E-language.

Bearing these thoughts in mind, readers are now invited to turn their attention to the individual case studies which constitute the main body of this book.

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