Time over Matter
Diachronic Perspectives on Morphosyntax

edited by
Miriam Butt & Tracy Holloway King

Studies in Constraint-Based Lexicalism

Time over Matter

Miriam Butt and Tracy Holloway King (eds.)

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Preface and Acknowledgements

This volume continues the Studies in Constraint Based Lexicalism series recently launched by CSLI Publications. It comprises a number of recent papers examining problems in historical (morpho)syntax from the perspective of Lexical-Functional Grammar (LFG).

The volume slowly took shape over the last couple of years. We began with three papers that had been presented at the annual LFG conferences since 1996. Three papers do not a volume make, but we thought that a collection of historically oriented papers within a traditionally synchronically oriented framework such as LFG would result in a significant contribution to the field. As such, we solicited a number of other papers on the topic and asked Nigel Vincent to write an introduction that would also serve as an independent contribution.

We would like to thank all of our contributors, especially those who had papers ready from the outset and waited patiently for this volume to be completed.

In editing this volume, we received extensive help from a number of sources. First of all, we would like to thank Julia Barron for providing us with the the book title. Furthermore, no volume would be complete without the work of anonymous reviewers, whom we have to thank for timely, thorough, and efficient work. Christine Kaschny at the Universität Konstanz proved to be an extremely capable editorial assistant who was not afraid of learning LaTeX; she provided invaluable and extensive help with the indexing, formatting, editing, and proof reading of the manuscript.

Finally, we would like to thank Christine Sosa and Kim Lewis of CSLI publications, and in particular, as always, Dikran Karagueuzian for his poetic nature.

1

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, Vennemann 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-

[1] I 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 forebearance in the face of the long delay in the delivery of this chapter.

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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

[2]For 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.).

[3]In 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-

[4]Inevitably, 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).

[5]Matthews (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 subjacency 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 unparallelled 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 unstudiable—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 an 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')

[6] Matthews (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, the 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):

[7]The 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.

Grammaticalization	*Reanalysis*
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 ithe 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

[8]For 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 discoursally 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 fashon 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

[9]Within 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 ouput 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

[10]This 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 functonal 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).

[13] I 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 grammaticalizaton 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 undirectionality 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 legitmately 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, sees 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 vebs 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 auxiliariness." (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 significanlty 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]

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

[15]A 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 constuction 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∼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 & Roussou (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 obsolesence. 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 active[16] 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

[16]Not 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

[17]The 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 cltics 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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2

The Development of a New Passive in English

Cynthia Allen

2.1 Introduction: the Recipient Passive

This paper looks at the introduction into English of passives of the type illustrated in (1):[1]

(1) He was given a book.

In such passives, it is not the theme, but the recipient, which is treated as the subject. Such passives are frequently called "indirect" passives (e.g., by Denison (1993:103–123), following a long tradition) because it is assumed that what is being promoted to the subject role is the (underlying) indirect object, but I will instead use the term *recipient passive* for reasons which I discuss briefly in the next section. It is generally agreed that the recipient passive arose in Middle English (ME), but unfortunately many putatively early examples of this construction do not hold up under close scrutiny. The purpose of this paper is twofold: (1) to date the advent of the recipient passive into English as closely as possible and (2) to shed light on the mechanism of this syntactic change. My study is based on my own investigation involving an examination of a large number of ME texts[2] as well as building on the work of earlier scholars.

[1]Thanks to two anonymous reviewers for helpful comments on an earlier draft of this paper.

[2]The details of the investigation are to be found in the Appendix.

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

It has frequently been assumed that the decline of morphological case marking in English directly triggered the introduction of the new construction, but I will argue that this traditional explanation is not satisfactory and will suggest another which incorporates the assumption that language users process sentences in terms of grammatical relations of the sort assumed in LFG. LFG offers a simple explanation of the timing of this syntactic change, while the traditional assumption that case-marking ambiguity directly led to a reanalysis does not.

2.2 The Recipient Passive in Old and Modern English

Following Bresnan (1982) and others, I assume that what is traditionally treated as an "indirect object" in sentences such as (2) is better analyzed simply as an object in Modern English:

(2) We gave John a book.

That is, *John* in (2) plays exactly the same grammatical role as *book* in (3):

(3) We gave a book to John.

These NPs are accorded the same syntactic treatment: they are bare NPs which directly follow the verb and which can undergo passivization. And while *a book* has the same semantic role (theme) in both sentences, its syntactic role in the two sentences is quite different; in (3) it is certainly the (direct) object, since it is a bare NP which directly follows the verb and is available for passivization, but in (2) it does not directly follow the verb and it is not available for passivization in most varieties of English. Bresnan (1982:25 ff) treats such objects as "second objects" (OBJ2). Bresnan and Kanerva (1989) refine this analysis by replacing OBJ2 with OBJ_θ, where OBJ_θ represents a range of "restricted" objects which are associated with specific semantic roles such as recipient, theme, locative, etc. I will adopt Bresnan and Kanerva's treatment here for Modern English, treating the restricted object as OBJ_{th}.

It is for this reason that I use the term recipient passive, making reference to the semantic role of the subject in passives such as (1) instead of the supposed grammatical role of the NP in the corresponding active sentence. This terminology is particularly useful when we are talking about different periods of English, because there is reason to believe that an NP like *John* in (2) had a different grammatical relation in Old English (OE) from the one it has in Modern English. For OE, there is no

reason to treat the recipient of a ditransitive construction like (4)[3] as an ordinary object:

(4) God betæhte þone wineard þam wisum bocerum.
God entrusted the(A) vineyard(A) the(D) wise(D) scribes(D)
'God entrusted the vineyard to the wise scribes.' (ÆHom 3 89)

Here the dative-marked recipient is not available for passivization; only the accusative-marked theme (*þone wineard*) could appear as the nominative NP in a passive version of the sentence, from all the available evidence. As Denison (1993:103) notes, passives analogous to (1) do not appear in OE texts. There is every reason to believe that this is not simply a data gap but reflects the grammar of OE; for one thing, plenty of passives like (5) and (6), in which the theme shows up as the nominative[4] subject, are to be found:

(5) and min andgit me wearð forgifen
and my reason(N) me(D) was returned
'and my reason was returned to me' (ÆCHom II, 33 253.119)

(6) and him wearð geseald an snæd flæsces
and him(D) was given a piece(N) flesh(G)
'and he was given a piece of flesh' (ÆlS(Basil) 158)

As suggested by these examples, a dative recipient in a ditransitive construction in OE always retains its dative case marking. Due to the relative freedom of constituent order in OE, it could be fronted for pragmatic purposes as in (6), but it did not enjoy the privileges which a subject had; for example, it did not control coordinate subject deletion in texts in which such deletion was normally limited to subjects of conjoined clauses which were coreferential to the subject of the preceding conjunct (for a discussion of coordinate subject deletion in the works of Ælfric, see Allen (1995)). Thus these passives with a fronted dative recipient, which I will refer to as *dative-fronted passives*,[5] are not recipient passives. On the other hand, the nominative theme of the passive acted like a subject regardless of its position. For example, we find coordinate

[3]The following abbreviations are used in the glosses of OE examples: (N)=Nominative, (A)=Accusative, (D)=Dative, (G)=Genitive, (S)=Subjunctive. The citations to the OE examples are those used in Healey and Venezky's (1980) *Concordance*.

[4]The neuter noun *andgit* is identical in the nominative and the accusative, but must be construed as nominative here as no "impersonal" passives involving an accusative are to be found in OE.

[5]I will use this term to include the equivalent passives with a fronted indirect object in ME, although nouns no longer show case, as in example (12).

subject deletion taking place when the coreference is with a nominative theme which is not in initial position:

(7) Eow he wæs ætbroden, and us fram Gode forgifan.
You(D) he was taken-away and us from God(D) given
'He was taken away from you and given to us by God.'
(ÆlS(Martin) 1462)

The second reason for believing that the lack of recipient passives in the OE texts is no accident is that this makes OE similar to closely related languages such as German. Comparative evidence indicates that the recipient passive is an innovation in English.

The difference between the OE situation and the Modern English one can be treated as a change to the possible grammatical relations of the recipient. In OE, these dative recipients were always "indirect objects" or objects of a restricted type, i.e. OBJ_{rec}. In terms of the earlier treatment of passive as a rule which related OBJ to SUBJ, we would say that these "indirect objects" were not available for passivization because the Passive rule only related subjects and objects (OBJ). Using the Lexical Mapping Theory presented in Bresnan and Kanerva (1989) and treating passivization as the suppression of the highest argument, we would say that a recipient was always +r,[6] so that passivization left the unrestricted theme as the highest argument, which would be assigned to the SUBJ role. At some point, however, the OBJ_{rec} of the active sentence became reanalyzed as an OBJ, while the old OBJ (the theme), was reanalyzed as a restricted object, i.e. OBJ_{th}. The recipient could now be −r and so was the argument which would be assigned to the SUBJ role in a passive sentence.

A complicating factor in the analysis of ditransitive verbs in OE is the fact that some verbs which selected for a recipient[7] and a theme assigned accusative case to the recipient and another case (usually genitive, but sometimes dative) to the theme. For example, *bedælan* 'to deprive, to release from,' allowed a human object in the accusative case and an inanimate object in the genitive case, as in (8). With verbs like *bedælan* the recipient could be a nominative subject in a passive construction, as in (9):

[6] The +r grammatical functions are the restricted ones, while the unrestricted SUBJ and OBJ are −r.

[7] The reader will note that the term *recipient* is not really the correct one in all instances, and this is particularly true when the human object is in the accusative case; such objects frequently bore a different semantic relation, such as maleficiary. However, the term *recipient* will serve as a useful label for the human object in a ditransitive construction.

(8) Ac eallunga he bedælde hi ælces lichaman gemanan
But entirely he denied them(A) each(G) bodily(G) society(G)
'But he entirely denied them any physical closeness'
(GDPref 4(C) 12.276.3)

(9) and he wearð for þy his rices bedæled
and he was for that his kingdom(G) deprived
'and he was deprived of his kingdom because of that'
(ÆAdmon 1 9.18)

For such verbs, the most straightforward analysis is that the recipient was the OBJ and the theme was the restricted object, OBJ_{th}. The existence of such verbs in OE complicates the task of determining when the new passive construction entered the language because a type of recipient passive existed even at the OE stage. However, this sort of recipient passive died out in ME when the distinction between accusative and dative case was lost; at this point, the accusative recipient verbs either conformed to the majority type of ditransitive verb and no longer allowed a recipient passive or the oblique theme was replaced with a prepositional phrase and the recipient remained OBJ.

A more serious problem with dating the advent of the recipient passive has to do with the verbs which I will refer to as *clausal ditransitive verbs*. These verbs were like the ditransitive verbs in selecting a recipient in the form of an NP, but they were different in that the theme was in the form of a clause. With some of these verbs, the recipient could be in the accusative case, and with these verbs which selected an accusative recipient, recipient passives were possible in OE. Examples of such verbs include *biddan* 'to ask (something of someone)' and *warnian* 'to warn, take heed'; (10) illustrates *biddan* in an active sentence and (11) shows that the recipient could be in the nominative case in a passive sentence:

(10) þæt sum undercyning com to criste and hine bæd
that some underking came to Christ and him(A) asked
þæt he mid him siððode
that he with him went
'That a certain underking came to Christ and asked him to go with him' (ÆCHom I, 8 128.5)

(11) and he wæs gebeden þæt he ofstlice come
and he(N) was asked that he hastily came(S)
'and he was asked to come quickly' (GD 1(H) 9.31.3)

On the other hand, clausal ditransitive verbs always requiring a dative recipient in the active never show up in the recipient passive. This is a point which was made by Mitchell (1979:537–542) and (1985:§836) and which I will return to in section 2.3.

The OE facts are straightforwardly explained by assuming that the accusative and dative recipients had different grammatical relations; some clausal ditransitive verbs selected for a direct object, which would show up as an accusative, and some selected for a restricted object, which would show up as dative. Since passivization only resulted in a −r argument becoming SUBJ, only the verbs which allowed accusative recipients showed up in what looked like a recipient passive.

These clausal ditransitive verbs complicate the picture because the reflexes of the verbs which took an accusative recipient in OE (e.g., *warn*) continue to show up in ME in passives with recipient subjects when the theme is a clause. Also, some new clausal ditransitive verbs which were borrowed into the language, such as *command*, had recipient subjects in the passive. It is important to realize that recipient passives of clausal ditransitive verbs in ME cannot be used as evidence of a general syntactic change, given that in the clausal ditransitive construction the recipient had always been the OBJ with some verbs. For the verbs which remained from OE, there was no reanalysis of an OBJ_{rec} as OBJ because the recipient had always been OBJ, and for the new verbs with recipient passives there was also no reanalysis because they entered the language with a −r recipient.

Since the focus of this paper is on the reanalysis of OBJ_{rec} recipients as OBJ, I will exclude all clausal ditransitive constructions from this preliminary discussion of the timing of the introduction of the recipient passive, concentrating exclusively on ditransitive verbs (i.e. ones selecting two NP objects). However, I return to the clausal ditransitive verbs in section 2.4.2 and show how they fit into the picture.

2.3 Dating the Change

Just when is the new recipient passive first found in English texts? Visser (1963–73:§1968) lists several examples which he says show that "the object of the active construction has been converted into the subject of the passive construction..." A small number of these are from quite early in ME. Other putatively early examples are given by van der Gaaf (1929). However, closer examination of these examples (and all others which I have seen) reveals that none of the examples from earlier than the late fourteenth century actually conclusively demonstrates any change from OE. Space does not allow a full discussion of all of these early examples here, but see Allen (1995:Appendix A) for a complete discussion. Here, I will simply note that the putatively early examples of the passivization of what would have been an indirect object in OE fall into three broad categories.

First, there are examples in which the recipient would not have been the indirect object or OBJ$_{rec}$ by my analysis, but rather the OBJ. In some instances, examples of this sort simply involve a demonstrable misanalysis. More often, the person presenting them has failed to take into account that the recipient in the active variant of these sentences could have been in the accusative case in OE[8] (in other words, could have been a direct object). Particularly common are examples which are examples of clausal ditransitive verbs, rather than ditransitive ones. I have already discussed the fact that clausal ditransitive verbs which took an accusative recipient treated that recipient as OBJ, rather than OBJ$_{rec}$, in OE. Mitchell (1979:537–542) and (1985:§836) points out this fault with the examples of Visser (1963–73:§1968) and convincingly dismisses all of Visser's OE examples. Mitchell limited himself to looking at the OE examples, but Russom (1982) shows that similar problems exist with some of the EME examples.

A second class of putative early examples of recipient passives is illustrated by (12):

(12) The Duke Mylon was geven hys liff, and fleygh out of land with his wife.
'Duke Mylon was given his life, and fled out of the country with his wife.'
(Ric.Couer de L. 1307, Auchinleck MS, Example from c. 1330)

Here, *Duke Mylon* could be interpreted as either a fronted indirect object or the subject. This ambiguity is precisely what is traditionally assumed to have caused the introduction of unambiguous recipient passives with nominative pronouns. This example is presented by van der Gaaf (1929), who appears to have assumed that the NP *The Duke Mylon* should be interpreted as the subject, rather than a fronted indirect object, presumably because of the deletion of the subject in the coordinate clause. However, it turns out that this particular poem is full of examples in which subjects are missing even though they are not coreferential with the subject of the coordinated sentence, for example:

(13) A wel gret cheyn ðai had don drawe ouer ðe hauen
A well great chain they had caused draw over the haven

[8]The reason why there has been confusion here is that some of these verbs could have either a dative or an accusative recipient in the active. However, there is no reason to assume that the recipient passives should be regarded as being related to the active type with a dative. As Mitchell notes, there are no convincing recipient passives examples which have a verb which is found *only* with a dative recipient in the active construction. My own investigation of a large number of entries for ditransitive verbs in Healey and Venezky's (1980) *Concordance* confirms Mitchell's observation.

of acres fers & was yfastned in to pilers.
of Acre strong and was fastened on two pillars
'They had caused a very big, strong chain to be drawn across the harbor of Acre, and it was fastened to two pillars.'
(Ric.Couer de L. 2a.22)

The problem is that it appears that in this poem, the subject of a coordinated clause did not have to be coreferential with the subject of the conjunct in order to be omitted. Mere coreference with a fronted NP of any sort seems to have been sufficient to allow coordinate subject deletion in this poem, and this means that examples like (12) cannot be used to show that the uninflected NP was interpreted as the subject. We can only use the ability to control coordinate subject deletion as a diagnostic for subjecthood if we can demonstrate that in general this was limited to what can plausibly be analyzed as subjects, and although this is true for some prose texts even in OE (e.g., the works of Ælfric; see above), it is certainly not true of ME poetry.

The third category of spurious examples of early recipient passives are genuine examples of the recipient passive, but they are not in fact to be dated earlier than 1375. The problem stems from the fact that a crucial distinction between the time of composition of a text and the date of the MS containing a specific version of a text are not always distinguished. For example, Visser offers example (14):

(14) as ycham itold her
'as I am told here' (Rob.Glo. MS B 5357)

This particular example would have to be excluded anyway from a discussion of the purely ditransitive verbs, since there is no second argument in the form of an NP, but it will serve to illustrate the sorts of problems that the historical linguist can run into when trying to pinpoint the introduction of a construction. Visser indicates that this example can be dated c. 1300, considerably earlier than the date of 1375 that I will suggest below for the first real recipient passive. However, it turns out that the date which Visser has given refers to the assumed date of composition of this chronicle, rather than the dative of the MS containing this particular version. In fact, this example is from a MS which dates c. 1425,[9] and so this example does not necessarily illustrate Robert of Gloucester's usage, but could very well be due to a change made by the scribe. And in fact in this case we are lucky enough to have proof that the scribe has changed the original, because an earlier

[9]Both MSS are edited by Wright (1887).

MS (Cotton Caligula A.xi, c. 1325) exists, and in this MS this example reads:

(15) as ich ðe abbe ytold her
as I thee have told here
'As I have told thee here' (Cotton Caligula A.xi, c. 1325)

There are in fact no examples of new recipient passives to be found in this older version of the text.

This example highlights an important methodological point: most of our OE and ME texts are copies, rather than originals, and we cannot simply assume that scribes always faithfully stuck to the syntax of the original. When a large temporal gap exists between the date of composition of a text and the date of the MS which contains a version of the text, as with the Robert of Gloucester example, we can't be sure whose syntax we are dealing with. Examples like (14) certainly indicate that a change had taken place by 1425, since *tell* formerly used the dative-fronted passive, but it does not indicate that a change had taken place by 1300.

My own investigation of a large range of texts (listed in the Appendix) as well as a close scrutiny of each putative early example of early recipient passives which I have seen in the literature has led me to the conclusion that no unambiguous example of this construction is to be found earlier than (16), presented by Visser. The example dates from 1375:[10]

(16) Item as for the Parke, she is alowyd Every yere a dere and xx Coupull of Conyes and all fewell Wode to her necessarye...
'Item: as for the park, she is allowed a deer every year and 20 pairs of rabbits and all firewood necessary to her...'
(Award Blount p. 207)

Other examples from the late fourteenth or early fifteenth century are scarce, but (17) comes from a MS of either the last decade of the fourteenth century or the very early part of the fifteenth century:

(17) Playnly þu art forbodyn boþe
Plainly, thou(N) art forbidden both
'Plainly, you are forbidden both.' (Wyk.Wks XXVI 383.24)

Example (18) comes from the first quarter of the fifteenth century:

[10]The example is to be found in the *Award of dower by Sir Thomas Blount*. It can be dated precisely at 1375.

(18) and þey shal be assigned redy shippyng
'and they shall be assigned ready shipping'
(Lon.Eng. War France XVI.8, 1424)

I have not seen any earlier examples which must be analysed as having a recipient subject which would have been one of two bare objects in the corresponding active sentence. I conclude that the recipient passive of ditransitive verbs does not enter the texts until around 1375.

2.4 Explaining the Change

2.4.1 The Standard View

The standard view of the origin of the recipient passive is that it was a replacement of the dative-fronted passive. This is the view which was put forward by Jespersen (1927:299–301) and van der Gaaf (1929) and which has been adopted by most later scholars. Observers differ on whether they regard the replacement as gradual or sudden, but both traditional and generative analysts have generally been united in assuming that the recipient passive arose because of the breakdown of morphological case marking in English. Specifically, it is assumed that the loss of the distinction between dative and nominative case for nouns led to structural ambiguity in examples like (12), where the noun does not have morphological case.[11] Such sentence-initial nouns were liable to be reanalyzed as subjects for two reasons according to the traditional view: first, there was no morphology to show that it should be analyzed as the indirect object, and second, it was in the position usually occupied by a subject by this time. Since the bare recipient could be analyzed as the subject, we get the production of sentences like (1), where the morphology shows that the speaker has analyzed the fronted bare recipient in this way. This standard view is so well accepted that it is presented as a prototypical example of reanalysis in textbooks, e.g., Campbell (1998:232).

The standard view seems very plausible when we just look at the two end points, OE and late ME; it looks as though the dative-fronted passive was simply replaced by the recipient passive, either gradually or suddenly. However, the standard view falls apart when confronted with

[11] In generative accounts, the reanalysis is often treated as the only possible option when morphological case disappeared. An important generative treatment of this construction is given in Lightfoot (1981), who argues that the loss of the dative/accusative distinction morphologically led to the loss of lexical case assignment, making nominative case, which was structurally assigned, the only possibility for fronted recipients. Lightfoot's account suffers from the problems, discussed below, of any account which assumes that the dative-fronted passive was the model for the recipient passive. For a useful summary of both traditional and generative treatments of the "impersonal" passive, see Denison (1993:112–119 and 155–159).

the evidence for the timing of the new passive which was presented in section 2.3. The first problem is that the standard analysis would be most convincing if we could show that the recipient passive entered the language fairly shortly after the loss of the morphological distinction between nominative and dative case for nouns. That is, one would hope that sentences like *he was given his life* would appear fairly shortly after examples like (12). The problem is, however, that this morphological distinction had disappeared in most dialects of English long before the first recipient passive examples are to be found. The distinction is nearly completely gone in the majority of texts outside of Kent by c. 1200.[12] If my dating of the first recipient passives around 1375 is correct, then it is at least clear that the loss of this morphological distinction did not make the reanalysis necessary; the most we could say is that it made such a reanalysis likely to happen at one time, leaving unanswered the question of why it took so long to happen. Clearly, language learners succeeded for about 175 years in correctly analysing the fronted recipients which were ambiguously case marked as being fronted indirect objects, rather than subjects; the fact that language learners of the thirteenth and most of the fourteenth centuries maintained the old analysis is proven by the fact that the fronted recipient was always in the object case during this period when it was a pronoun capable of showing case. The explanation based on case marking ambiguity offers no account for why it was only in the later fourteenth century that language learners became confused about the grammatical role of the fronted recipient.

Even more crushingly, however, when we look at the history of sentences like (12), it becomes quite clear that they could not have been the model for the reanalysis, as the standard explanation requires. The fact is that the obsolescence of the dative-fronted passive did not begin with the introduction of the recipient passive. The standard view assumes that the dative-fronted passive died out because it was replaced by the recipient passive. But close attention to the texts shows that the dative-fronted passive becomes unusual in prose texts from around the beginning of the thirteenth century, although it is still fairly common in poetry. This is not because this passive has lost out to the recipient pas-

[12]The loss of case marking morphology is treated extremely briefly by Mustanoja (1960:67), who comments "In the south, with the exception of Kent, the development is in progress in the second half of the 11th century and is completed by the middle of the 13th, while in Kent the old inflection forms are preserved as late as the first half of the 14th century". Of course, some distinctions disappeared earlier than others, and the dative suffixes on nouns started to drop off early. Brunner (1963) offers more detail than Mustanoja. For a discussion of the state of case marking in some EME texts which considers what category distinctions (not just formal distinctions) are maintained, see Allen (1995:166–196).

sive, because the recipient passive does not even begin to appear in the texts until much later, as we have seen. By the time the first recipient passives appear in the texts, the dative-fronted passive was dead, or at the least marginal. It is important to note that I am referring here only to the dative-fronted passive, not to passives with a fronted prepositional phrase containing the recipient, e.g., (19):

(19) To the king was given a gift.

Passives like (19) certainly did not disappear before the recipient passive was introduced, but of course they could not have been the model for the recipient passive. Traditional grammarians looking at the introduction of the recipient passive have typically failed to distinguish between passives like (19) and the dative-fronted passive, because in both a fronted "indirect object" retains some sort of oblique marking and clearly has not been reanalyzed as a subject. But when we distinguish the two types of "indirect object", we find that passives with a fronted indirect object which is non-prepositional (i.e. either a dative pronoun or a bare NP) appear to have essentially disappeared some time before the recipient passive first appears in the texts.

In fact, examples parallel to (12) in having a fronted nominal recipient were never common at any time. It is not hard to find a reason for this fact when we consider that in a language with fairly free word order like OE, an NP is most likely to be fronted when it is old information, i.e. when it is a pronoun.[13] In fact we find that the majority of dative-fronted passives in OE had a pronominal recipient. And examples like (12) become quite unusual in ME because the dative-fronted passive became more and more unusual.

It is difficult to put an exact date on the disappearance of the dative-fronted passive, because it so happens that most of our texts from the critical period are poetic, and poetic texts often contain archaic syn-

[13]This statement is an oversimplification because objects could be fronted for various reasons in OE, and non-human objects were often fronted when they represented new information, e.g., when they were being used contrastively. Also, human objects were more generally likely to be fronted than non-human ones. However, the statement concerning old information seems to be true for dative objects, at least for monotransitive verbs. In a count of main and coordinated clauses in Ælfric's second series of *Catholic Homilies* (ed. Godden (1979)), I found that the situation in which a dative object was most likely to be fronted (i.e. before the nominative NP) was when the object referred to a human and was a pronoun and the subject referred to a non-human and was nominal rather than pronominal; these objects occurred fronted in 36% of such examples, making this the most frequent situation in which objects were fronted. I have not carried out a similar count with the ditransitive verbs, but it is reasonable to assume that the human dative object would have been more frequently fronted when it was pronominal than when it was nominal.

tax. Now comparisons from the thirteenth century demonstrate that the dative-fronted passive was much more common in poetry than in prose even at this early period, and there is every reason to believe that the dative-fronted passives which show up in the fourteenth-century poetry would not have been typical of either prose or the spoken language. Although the nature of the texts makes it impossible to be dogmatic on this point, I believe that the dative-fronted passive was at best a marginal construction by the middle of the fourteenth century. If I am correct in this, it means that the few ambiguously case-marked examples of the old passive could not possibly have served as the model for the new one, since they would not have been present (and certainly not robust) in the data available to the language learner. It might be objected that the recipient passive could have been introduced by mature speakers on the basis of the structurally ambiguous examples in the poetry, but this is unlikely, because literate people at this time were generally familiar with Latin, or at least French. The recipient passive is not possible in these languages, and since Latin and French served generally as models for literature, the reader would have been more likely to have interpreted the ambiguous NP as an indirect object than as a subject.

Whether or not we accept the mid fourteenth-century date as the date for the death of the dative-fronted passive, it seems indisputable that the demise of the dative-fronted passive was not caused by the introduction of the recipient passive, and some other explanation must be given for the disappearance of this construction. Fortunately, another explanation is not difficult to find. It turns out that just when the dative-fronted passives become rare in the texts, so do fronted bare indirect objects in *active* sentences.[14] To be sure, fronted "indirect objects" were still common, but already by the beginning of the thirteenth century such fronted recipients were usually the objects of prepositions, rather than bare NPs. This was part of the general trend of English towards a language in which syntactic relations are recoverable on the basis of configuration, rather than morphology. If we make the generalization that it became impossible for a bare indirect object to occupy first position, the disappearance of the dative-fronted passive follows immediately; OBJ_θ could not appear in initial position either in active or passive sentences.

[14]This statement is based on an examination of the following texts listed in the Appendix: Ayen, A&M, Met.Chron.Roy, C.Mundi (Volume I), Trevisa (pp. 41–191), Sir Gaw., Wicliffe, Morte A., Castle Pers., Cap., Lon.Eng., pp. 1–100 of ME Srms, Ascham's *Toxophilius* Part A, More's *Apology*, Elyot, and pp. 1–250 of Fisher.

2.4.2 An Alternative Explanation

Having established that the loss of the dative-fronted passive was not due to the reanalysis of a fronted indirect object as the subject, I will now turn to the question of why fronted bare recipients, having disappeared for a period in the passives of ditransitive verbs, should have reappeared, but in the form of subjects, rather than indirect objects. I will argue that the introduction of the recipient passive is in fact evidence of a reanalysis, but the reanalysis was not of the fronted indirect object as a subject, as is usually assumed. Rather, it was the reanalysis of the indirect object in active sentences as a direct object. Once indirect objects were reanalyzed as direct, the recipient was −r, and so available to become the subject of a passive.

Given the analysis which I have adopted for recipient passives in Modern English, it is clearly possible that these passives should have arisen from a reanalysis of indirect objects in active sentences as direct, but in order to make this explanation plausible, I must demonstrate that there is some reason why such a reanalysis should have taken place just when it did. Fortunately, such a reason is forthcoming when we look at another change which took place in English syntax in the same period, namely the fixing of the order of two bare objects. The fact is that recipient passives first start appearing in the texts just when we stop finding examples like (20), in which a bare theme NP precedes a bare recipient:

(20) I gave a gift the king.

It should be noted that my remarks here only refer to NPs which contain nouns, not pronouns, which are still found in the theme-first order in some varieties of English and which require a different analysis. So in the following remarks, I am excluding pronouns.

Examples of the order found in (20) were not surprisingly very common in OE, when case-marking distinguished the recipient from the theme, and the two could be placed in either order. It is more surprising to find that the first modern restriction that the first of two bare NPs must be the recipient did not arise as soon as the morphological distinction between accusative and dative pronouns was lost, or even soon after this morphological change. For nearly two and a half centuries, we continue to find examples of both orders, which would have been structurally ambiguous. The hearer simply had to figure out which NP referred to the recipient from the context, but this was not in fact very difficult, since the recipient is typically human and the theme is typically non-human. Nevertheless, although both orders were possible, we begin to see a decided preference for the modern order as early as the

first quarter of the thirteenth century, when the accusative/dative distinction had disappeared from most dialects of English. Table (1) shows clearly that the order REC TH (where REC=recipient and TH=theme) increasingly encroached on the opposite order in ME. We can make sense of this progression if we assume that although both orders were possible, speakers like to have some way of calculating the probable semantic role of an NP either by morphology or position. The fact is that the majority of ditransitive sentences[15] involved a pronominal recipient and a nominal theme, meaning that the recipient preceded the theme in most of these sentences. A hearer therefore would have done pretty well with a strategy which assumed that the first NP of a ditransitive sentences was the OBJ$_{rec}$ unless this was semantically anomalous. The more speakers relied on such a strategy, the more frequent the REC TH order became, until it was the only possible order.

Table 1: Order of Two Nominal Objects

Text	Date	REC TH	TH REC	% REC first
Ælfric (CH II)	c.1000	60	74	45%
A.Wisse	c.1230	19	11	63%
Rob.Glo.	c.1325	33	9	79%

By the last quarter of the fourteenth century, it becomes impossible to find the order TH REC for two bare NPs in the prose texts.[16] Since this is precisely the time of the first examples of the recipient passive, it is reasonable to hypothesize that the two events are intimately related.

I will now argue that the fixing of the order of the two nominal objects of a ditransitive verb made it advantageous for language learners to analyze the first object as OBJ, regardless of its semantic role.

Note that before the fixing of order, the language learner was confronted with these patterns:

[15]This is assuming, of course, that the usage in the written texts reflects spoken usage reasonably well.

[16]I have not examined all the texts listed for the fourteenth century in the Appendix for examples of two bare NP objects, but have restricted my examination to A&M, Agen, C.Mundi volume 1, lines 1–10,000 of H.Synne, PierP, both volumes of Rob.Glo., and pages 41–91 of 1revisa. I have examined all the listed fifteenth century texts for the order of two objects with the following exceptions: my investigations of BBrut and the verbs of the Malory concordance did not include recording all possible examples of TH REC order, and I only looked for this order in the first 200 pages of Marg.K. For the sixteenth century, this order had been missing from the texts for so long that there was little point to re-checking every text which had previously been examined for passives. However, I have looked specifically for examples of the order TH REC in More's *Apology*, in book I of Ascham's *Toxophilius*, and in pages 1–100 of Fisher.

(21) A. V REC TH
B. V TH REC
C. V TH PP
D. V PP TH

It appears that these language learners saw no reason to treat the bare RECs of these patterns as syntactically any different just because they were in a different order. Rather, patterns A and B were treated as mere variant orders with the same grammatical relations: OBJ for the theme and OBJ_{rec} for the recipient. However, things changed once pattern B disappeared and the language learner was confronted with:

(22) A. V REC TH
C. V TH PP
D. V PP TH

It seems that once the TH-first order disappeared, the language learner no longer treated REC in pattern A as having a different syntactic status from the TH which occupied the same position in pattern C and was similar to it in not having an overt case-marker. That is, the language learner treated the bare REC as OBJ, just as the bare TH was treated as OBJ when it was immediately postverbal.

Within an LFG framework, in which semantic relations are accessed through grammatical relations, there is a straightforward explanation both for why the reanalysis should have happened and why it did not happen earlier.

Note that when the language learner was confronted with the patterns found in (21), there was no advantage in analyzing the recipient as OBJ. If the recipient were treated as OBJ in pattern (21a) simply because it was postverbal, this would not help a listener access the semantic role, since the postverbal theme of (21c) would also be OBJ. That is, a speaker's grammar would have to say that a ditransitive verb like *give* had the linkages of semantic roles to grammatical roles as in both (23) and (24):[17]

(23) (OBJ) (OBJ_{th})
|
REC TH

(24) (OBJ) (OBJ_{rec})
|
TH REC

[17]The lexicon would also of course include a linkage of the theme to the OBJ role and the recipient to the role of object of preposition.

The language learner had no particular reason to treat all immediately postverbal NPs as OBJ. There was no advantage in terms of processing, since knowing that the first NP after the verb was to be treated as OBJ did not tell the listener that this OBJ was linked to a particular semantic role. Therefore, succeeding generations continued to link up semantic and grammatical roles in only one way when there were two bare NPs, viz. the linkage of (24). During this long period, hearers knew that a verb like *give* selected an OBJ with a theme role and a recipient with the role of OBJ_{rec}, but neither position nor morphology told the speaker which NP bore which grammatical (or semantic) relation.

The situation changed, however, once pattern (21B) was lost from the language learner's data. At this point, adding the linkage of (23) did not complicate the lexicon because it was no longer necessary to include (24). Furthermore, assuming (23) as the only possibility made it possible to use this new processing strategy:

(25) The first non-pronominal NP after V is OBJ, unless a pronoun precedes it.[18]

Furthermore, once the hearer had assigned the NP to the OBJ role, the semantic role could be calculated directly on the basis of position: the first NP was the OBJ, and if this OBJ was followed by another bare NP, it could only be the recipient; the second NP could only be OBJ_{θ}, which was now linked only to the theme role. The hearer no longer had to check the semantic plausibility of assigning the NPs to the possible semantic roles and the interpretation of, for example, sentences with two human objects became completely unambiguous.

Let us now consider how the clausal ditransitive verbs fit into this picture. For the most part, those clausal ditransitive verbs which allowed accusative recipients in OE (thus allowing recipient passives) continued to appear in recipient passives all through ME.[19] This is unsurprising

[18]For pronouns, the strategy would have to be rather different. After the reanalysis, the theme would always be OBJ_{th} in an active sentence with two bare objects, and this would include pronominal themes, which normally preceded the recipient, whether pronominal or nominal. Thus it was not possible to say that the first postverbal NP was always the OBJ. However, assuming that the first NP after the V was OBJ unless it was a pronoun which did not refer to a human would be a very useful strategy, assuming that the texts are a good guide to typical usage patterns, since in fact recipient pronouns were much more frequently used than theme pronouns with ditransitive verbs.

[19]That is, those verbs which appeared with an accusative recipient in OE generally continued to select for an OBJ recipient while those with a dative recipient in OE continued to select for OBJ_{rec}. However, it is not surprising to find that there was a certain amount of rearrangement of the membership of these classes. For example, *teach* and *thank* required dative objects in OE in the clausal ditransitive construc-

as these verbs linked the −r OBJ role to the recipient. What is perhaps unexpected is that the verbs which had required a dative recipient (i.e. an OBJ_{rec}) in the clausal ditransitive use in OE did not appear in the recipient passive until the reanalysis of all immediately postverbal bare recipients as OBJ took place. The latter class of verbs paticipated in dative-fronted passives in earlier ME, but as we have seen, these became scarce or non-existent as indirect objects in general stopped being fronted. Thus the distinction between two classes of clausal ditransitive verbs—those taking OBJ recipients and those taking OBJ_{rec} recipients—appears to have been maintained even after the morphological distinction between accusative and dative case had been lost.[20] The reason why this is rather surprising is that once this morphological distinction had been lost (both for nouns and for pronouns), an OBJ recipient was indistinguishable from an OBJ_{rec} recipient in the active clausal ditransitive construction, since both appeared as a bare NP which preceded the clause. One might have expected all these recipients to have been assigned the same grammatical role as soon as the dative/accusative distinction was lost, but this did not happen.

The distinction between verbs which had an OBJ recipient and those with an OBJ_{rec} recipient is furthermore found with new verbs which entered the language (primarily from French) in ME. Some of these verbs (e.g., *command*) appear to have been used only in recipient passives when the theme was a clause, indicating that the recipient played the role of OBJ in the active. Other verbs, such as *grant*, are found only in an "impersonal" passive and thus had an OBJ_{rec} recipient.

The retention of two classes of clausal ditransitive verbs after the loss of the dative/accusative distinction in morphology is remarkable, but is not difficult to explain. Language learners must have used passive examples to learn the grammatical relations involved with these verbs; a

tion, but they show up in recipient passives in clausal ditransitive use in ME. Thus they had shifted from having an OBJ_{rec} to having an OBJ as recipient in the clausal ditransitive use. On the other hand, *(be)hatan* required an accusative recipient in OE when it meant 'to order', but it is found in dative-fronted passives in ME as well as in recipient passives, so it shifted from belonging only to the OBJ recipient class to belonging to both classes. The important point is that up to the point where fronted restricted objects disappear, it remains possible to discern two distinct classes of clausal ditransitive verbs according to what type of passive was used. Although some verbs belonged to both classes, some were apparently restricted to one class or the other.

[20]The claims made here concerning the clausal ditransitive verbs in ME are based primarily on my own reading of the texts listed in the Appendix. I have also checked the examples listed in sources such as Brose (1939), van der Gaaf (1929), and Visser (1963–73), as well as the entries for selected verbs in the *Oxford English Dictionary* and the *Middle English Dictionary*.

child hearing a dative-fronted passive must have assumed that the verb in question selected for an OBJ$_{rec}$ rather than an OBJ, while if a verb participated in a recipient passive it selected for OBJ. It is interesting that the language learners do not seem to have overgeneralized in any significant way beyond the examples which they would have heard.[21]

Once all immediately postverbal NPs were reanalyzed as OBJs, we get a proliferation of recipient passives with clausal ditransitive verbs and it is no longer possible to draw up a list of those verbs which participated in the construction and those that did not—in principle, any clausal ditransitive verb could appear in this construction because none of them had an OBJ$_{rec}$ any longer, although naturally we do not find examples with every verb in any given period.

2.5 Sudden or Gradual Change?

LFG can accommodate both sudden and gradual syntactic change. It can account for far-reaching syntactic change which is implemented only gradually as change which begins as changes to lexical entries. An example of this sort of gradual change comes from the "impersonal" verbs, e.g., *methinks*. In Allen (1995:Chapter 6) I argue that the demise of these verbs is best accounted for by assuming that individual verbs which had originally selected for non-nominative subjects first allowed, then favored, nominative subjects. This change was gradual and proceeded at a different pace with individual verbs. There was a long period of variation in which some verbs had only nominative subjects and some appeared with either nominative or non-nominative subjects. Once non-nominative subjects were disfavored with the majority of verbs, a fundamental change took place as language learners no longer were confronted with sufficient evidence for assuming that any verb allowed non-nominative subjects, and the "impersonal" use was lost to the language.

This ability to accommodate gradual change gives LFG an advantage over any generative theory which treats all change as essentially sudden,

[21]The situation with the clausal ditransitive verbs is different in this respect from that with the monotransitive verbs, which stop appearing in "impersonal" passives as soon as the dative/accusative distinction is lost. I believe that the explanation for this difference is that with the monotransitive verbs, the object was simply OBJ whether it had dative or accusative case, and the dative argument was the subject, not an indirect object, in a passive. In OE, arguments could be marked lexically with dative case and this case marking was retained even when the argument became the subject of a passive. But in ME, lexical case marking of objects disappeared as soon as the dative/accusative distinction appeared in the morphology, and at that point all OBJs behave the same under passivization; i.e. they appear in the nominative case. For a detailed discussion of the monotransitive verbs and their passives in ME, see Allen (1995:Chapter 8).

as in Lightfoot (1991). In LFG, a change can be treated as sudden in the sense that the introduction of a new possibility in the grammar must be sudden but gradual in the sense that it is implemented gradually through lexical entries.

On the other hand, there is nothing in LFG that requires all syntactic change to be implemented gradually through changes to individual lexical entries. I have suggested here that the introduction of the recipient passive was an instance of sudden reanalysis, rather than of gradual change to lexical entries. Indeed, the explanation which I have suggested is not easily compatible with a gradual change; if some verbs assigned the recipient in the ditransitive construction to the OBJ role and some still assigned it to the OBJ_{rec} role, there would be no processing advantage in the innovation because an OBJ could not be identified on the basis of position alone,[22] nor could the hearer use the simple rule that an OBJ followed by another bare NP was always the recipient.

The fact is, however, that convincing cases of truly sudden change without variation do not seem to be common. It often turns out that while a sudden reanalysis seems plausible when we are only given a broad-brush picture of a change, as was the case with the treatment of the "impersonal" verbs in Lightfoot (1979), a closer examination of the data reveals a period of variation. It is reasonable to ask whether this is not also the case with the recipient passive. The answer appears to be "no"; even the closest examination of the facts does not reveal a period of variation[23] in which some recipients behaved as OBJ in the ditransitive construction while others behaved as OBJ_{rec}. That is, we do not seem to be able to draw up a list of a few verbs which appeared in the recipient passive in the late fourteenth century and early fifteenth century and then increasingly larger lists (of which the earlier lists are a subset) for later periods. This is not to say that we immediately find a large number of examples of the recipient passive in the period when it was introduced; it is certainly true that examples become more common in later periods. Indeed, there are many texts in this early period which do not contain a single example of the recipient passive with a ditransitive verb. The crucial fact, however, is that these texts also do not contain any examples of the old dative-fronted passive; there seems to have been no

[22] Of course, we might suggest that the hearer would know that the OBJ of one verb was linked to the recipient role while the OBJ of another verb was linked to the theme role. But the point remains that reanalyzing some but not all recipients as OBJ would not have resulted in any advantage.

[23] There was always variation in the lexical entries of verbs since some allowed the ditransitive construction and others did not, as is still the case, but this sort of variation is not the kind which is at issue.

period when the new recipient passive and the old dative-fronted passive lived side-by-side. Earlier works such as Brose (1939) which indicate that the recipient passive and the "impersonal" passive had a period of coexistence do so on the basis of examples like (26), in which the "indirect object" is in the form of a prepositional phrase, not a bare NP:

(26) And to them which be repentaunt & sorrowfull for theyr synnes with a full purpose never after to offende is promysed forgyuenes (Bishop Fisher, b.1469 Mayor ed. 238, l.3)

When we realize that all the prose examples of the "impersonal" passives from after the early fourteenth century are of this type with a recipient in a PP, the evidence for a period of variation between the old type and the new one evaporates. We also see how different our conclusions can be according to how we categorize constructions; it is essential to make the distinctions which are really relevant to the change.

It is not difficult to explain why these early texts did not contain many examples of the new passive. Assuming that a writer's own grammar generated bare recipients only in the direct object position, there was nothing to compel the writer to passivize such objects, since the writer had several options available: he could use an active sentence, or could choose to treat the recipient as a prepositional object and passivize the theme instead, for example. Examples like (26) show that the latter option did not at this time prevent the writer from also fronting the recipient. And there is also no reason to expect that a writer would passivize the object as frequently when it was a recipient as when it was the theme. Passivizing the theme resulted in a construction found in the Latin and French models which were so important in this period, and by using them the author was not departing from these models. On the other hand, to passivize the recipient would be to create a construction which violated the grammar of these models. There is every reason to believe that authors under the sway of these models would avoid constructions not found in Latin or French when English constructions consistent with these models could be used instead, even when those authors did not go so far as to import un-English constructions. Thus we find many fifteenth-century writers who simply avoided the recipient passive entirely but also never used passives in which a fronted "indirect object" was a bare NP.

Given that sudden, wholesale change of the sort that I have argued for seems not to be the most common type, it is worthwhile to point out that the scenario which I have suggested is quite different from many of the sudden changes which have been proposed in the generative literature. For example, Lightfoot (1991) presents the replacement of OV by

VO order in English as a very dramatic change which was implemented essentially instantly when certain other changes made learners unable to learn the old grammar despite considerable OV orders in the data to which they were exposed.[24] Such an account incorporates the idea that learners can fail to generate examples of the sort which are frequent in the language of older speakers in the community. But careful examination of changes in which a new construction replaces an old one usually suggests that there is a period, often substantial, when the two constructions coexist; by some means or other the language learners generate the sorts of strings which are common in the speech of their elders.

The change which I am suggesting is of a very different type. I have not suggested a reanalysis which instantly drove out an earlier analysis or which made it more difficult to generate strings heard in the acquisition data. Because the dative-fronted passive no longer existed in the language learner's data, the language learner did not have to devise a grammar which would account for it. The lack of variation between the recipient passive and the dative-fronted passive was possible because the language learner was never confronted with any evidence to cause them to construct two analyses of the active ditransitive construction.

2.6 Conclusion

The introduction of the recipient passive seems to have been the result of a reanalysis of grammatical relations, but this reanalysis is not the one which is usually assumed. A fronted indirect object cannot have been reanalyzed as a subject, as in the traditional account, because fronted indirect objects seem to have vanished or at least to have been moribund when the recipient passive was introduced. Instead, the reanalysis involved active sentences; the old indirect object was analyzed as a direct object when the order of two objects became fixed.

As long as the dative-fronted passive remained and the order of two objects was variable, there was no reason to analyze the recipient as anything but an OBJ_{rec} (indirect object). Even after the dative-fronted passive disappeared, this continued to be the simplest analysis as long as the theme could appear in the first postverbal position. But once the bare nominal recipient was always immediately postverbal, the simplest

[24] Unfortunately, Lightfoot's (1991) figure 3.3 achieves a spurious impression of a sudden and drastic decline of verb-final order in ME as opposed to OE by averaging together the figures for the different OE periods and then averaging the figures for two ME periods together. We get a very different picture showing more variation in OE and a less precipitous decline when we plot the actual figures for the different periods instead of plotting the average for more than one period as though it were the figure for a single period.

analysis was as an OBJ (direct object). I have suggested that this new analysis had processing advantages over one in which the theme was always assigned to the OBJ role because it was now possible for a listener to calculate grammatical relations directly on the basis of position in a simple way, and through the grammatical relations, the semantic relations could be calculated. Whether this particular explanation can be maintained or not, it seems clear that the introduction of the new passive is connected with the fixing of the order of two objects.

The traditional assumption of a direct cause-and-effect relationship between the loss of morphological case distinctions and the introduction of the recipient passive is not very satisfying because the recipient passive only appeared a very long time after the loss of the morphological nominative/dative distinction on nouns. This morphological distinction had completely disappeared from most dialects of English by the middle of the thirteenth century at the latest, but the first convincing example of the new recipient passive does not appear until 1375. Thus several generations of language learners were apparently not prevented from learning the old analysis by any case marking ambiguity. The best we could say is that this ambiguity set up a situation in which a reanalysis was likely although not necessary, but even this explanation does not work when we consider that the dative-fronted passive was apparently not robust enough in the fourteenth century to cause a reanalysis.

However, it is reasonable to assume a more indirect connection between the loss of case marking and the introduction of the new construction, since it is highly plausible that the loss of case marking was what encouraged succeeding generations of learners to rely more and more on constituent order for sorting out the grammatical and semantic relations of a sentence. The immediate trigger for the reanalysis, however, was not the loss of case marking, but the fixing of constituent order.

Frequently, the impression of sudden syntactic change evaporates when better data are provided. However, in this instance it is the impression of variation which disappears when examples are carefully examined and the proper distinctions are made, even when a large data base is used; the introduction of the recipient passive is an interesting example where a new analysis seems not to have coexisted for any time with an old analysis. I have argued that this was possible in this instance because there was no longer any evidence for the old analysis; there is no need to assume here that language learners ignored robust data for an old analysis in implementing a new one. Whether such an assumption is ever warranted is a question which I think cannot be answered until more empirically adequate studies of apparently sudden syntactic change are provided.

Appendix: Details of the Investigation

The factual statements made in this paper, unless otherwise indicated, are made on the basis of my own examination of the following texts for examples of passives of ditransitive verbs, clausal ditransitive verbs, and verbs which (formerly) took a single object in the dative case. Except where indicated otherwise, I have examined the complete work. Information concerning the date and dialect of these texts is given in Allen (1995:Appendix C). In addition to checking the texts listed below, I have checked selected entries of Kurath and Kuhn's (1956) *Middle English Dictionary* (MED) and the *Oxford English Dictionary* for possible examples of early recipient passives and late examples of dative-fronted passives. 'EETS'=Early English Text Society.

The Twelfth Century and Beginning of the Thirteenth Century

Belfour = *Twelfth Century Homilies*. Edited by A.O. Belfour, EETS 137, 1909.

Hrood = *History of the Holy Rood Tree*. Edited by A.S. Napier, EETS 103, 1894.

Trinity = *Old English Homilies of the Twelfth Century: Second Series*. Edited by Richard Morris, EETS 53, 1873.

PC = *The Peterborough Chronicle 1070–1154*. Edited by Cecily Clark, 2nd ed. Oxford, Clarendon Press, 1970. MS Bodleian Laud Misc. 636.

Poema Morale. This poem is found in several MSS, but the MS used as the basis of the text which I read is Lambeth Palace 487. The edition used here is the one found in Hall (1920).

Warner = *Early English Homilies from the Twelfth Century* MS *Vesp. D. xiv*. Edited by Rubie Warner, EETS 152, 1917.

In addition to these texts, I have examined the homilies found in MS Lambeth 487 and MS Cotton Vespasian A. xxii. The Vespasian homilies are found in Richard Morris' *Old English Homilies and Homiletic Treatises of the Twelfth and Thirteenth Centuries*, EETS 34, 1868. These homilies are pp. 217–45. One of these homilies is also edited in Hall (1920:12–17).

The Early Thirteenth Century

AW = *The English Text of the Ancrene Riwle: Ancrene Wisse*. Edited by J.R.R. Tolkien, EETS 249, 1962.

HM = *Hali Meiðhad*. Edited by Bella Millett, EETS 284, 1982.

Orm = *The Ormulum: With the Notes and Glossary of Dr. R.M. White*, 2 vols. Edited by Robert Holt, 1878, rpt. New York, AMS Press, 1974.

St Jul = *Þe Liflade and te Passiun of Seinte Juliene*. Edited by S.R.T.O. d'Ardenne, EETS 248, 1961.

St Kat = *Seinte Katerine*. Edited by S.R.T.O. d'Ardenne and E.J. Dobson, EETS e.s. 7, 1981.

St Marg = *Seinte Margherete*. Edited by S.R.T.O. d'Ardenne in *The Katherine Group Edited from* MS *Bodley 34*, Paris, Société d'Edition 'Les Belles Lettres', 1977.

SW = *Sawles Warde*. Edited by S.R.T.O. d'Ardenne in *The Katherine Group Edited from* MS *Bodley 34*, Paris, Société d'Edition 'Les Belles Lettres', 1977.

V&V = *Vices and Virtues*. Edited by F. Holthausen, EETS 89 and 159, 1888 and 1920. MS Stowe 34.

Wohunge = *Þe Wohunge of ure Lauerd*. Edited by W. Meredith Thompson, EETS 241, 1958.

The Later Thirteenth Century

BrutC = *Laȝamon: Brut*. Edited by G.L. Brook and R.F. Leslie, EETS 250 and 277, 1963 and 1978. The MS which I used is MS Cotton Caligula A ix. I have not read this entire work in this investigation, but instead looked up every example of selected ditransitive verbs listed in the glossary to Madden's 1847 edition of the work. The verbs which I checked are *boden, bihaten, tellen, techen, seggen, ræden, andswærien, bidden, i-queþen, ræcchen, quidden, þankien, unnen, forbeoden, þolien, læren, grantin, frænen*, and *ȝeornen*. In addition, I checked Funke (1907) for possible examples of recipient passives.

GE = *The Middle English Genesis and Exodus*. Edited by Olof Arngart, Lund, C.W.K. Gleerup, 1968.

KS = *Kentish Sermons*. Edited by Hall (1920:214–22).

O&N = *The Owl and the Nightingale*. Edited by Eric G. Stanley, Manchester, Manchester University Press, 1972.

SEL = *The Early South English Legendary or Lives of Saints*. Edited by Karl Horstmann, EETS 87, 1887.

SP = *The Southern Passion*. Edited by Beatrice Brown, EETS 169, 1927.

The Fourteenth Century

I have examined all the texts listed below for both dative-fronted and recipient passives. However, it was only after I had carried out this examination that I realized the importance of the presence or lack of preposed indirect objects. I therefore made another, more limited investigation of whether fronted indirect objects were to be found. The texts used in this more limited investigation are listed in footnote 14.

Several of the texts examined from this period are found in the Auchinleck MS of the National Library of Scotland (also known as Advocates' MS 19.2.1). This MS can be dated 1330–1340, and it was written in London. The following texts from the Auchinleck MS were examined:

Amis and Amiloun. Edited by MacEdward Leach, EETS 203, 1935.

Of Arthour and of Merlin. Edited by O.D. Macrae-Gibson, EETS 268, 1973.

Kyng Alisaunder. Edited by G.V. Smithers. EETS 227 and 237, 1947 and 1953.

'Lay Le Freine'. Edited by Henry Weber in *Metrical Romances of the Thirteenth, Fourteenth, and Fifteenth Centuries*, Vol. I, Edinburgh, Archibald Constable and Co., 1910.

Owayne Myles. Edited by Eugen Kölbing in 'Zwei Mittelenglische Bearbeitungen der Sage von St. Patrik's Purgatortium. II: Owayn Myles', *Englische Studien 1* (1877), 98–112.

Penniworth of Witte. Edited by Eugen Kölbing in 'Kleine Publicationen aus der Auchinleck-hs', *Englische Studien 7* (1884), 113–7.

Ric.Coer de L. = *Richard Coer de Leon.* Edited by E. Kölbing in 'Kleine Publicationen aus der Auchinleck-hs. III: Zwei Fragmente von King Richard', *Englische Studien 8* (1885), 115–119.

Sir Orfeo. Edited by A.J. Bliss, Oxford, Oxford University Press, 1966 (2nd ed.)

14th c. texts from other MSS:

Azen = *Dan Michel's 'Azenbite of Inwyt'.* Edited by Richard Morris, EETS 23, 1866. Reprint with corrections by Pamela Gradon published 1965.

AwardBlount = *Award of Dower by Sir Thomas Blount.* In 'The Early History of Mapleduram', by A.H. Cooke, *Oxfordshire Record Society 7* (1925), 204–6.

Ch = *The Riverside Chaucer.* Larry D. Benson, general editor, third edition, Boston, Houghton Mifflin, 1987. I did not read all of Chaucer's works looking for these constructions, but instead checked

Tatlock and Kennedy's (1963) *Concordance* for examples containing the forms *boden, forboden, enjoyned, bereaved, reeved, graunted, forgiven, told, given, comanded, taught, defended, benimen, advised, answered, counseled, shown, beseeched, prayed, informed, declared, suffered, doon, left, asked, bideled*, and *lered*, as well as phonological variants (including forms preceded by *y-*).

C.Mundi = *Cursor Mundi*. Edited by Richard Morris. EETS 57, 1874. This poem is found in several MSS; the version which I read is from MS Cotton Vespasian A. iii. Only Volume I was examined in this study.

D'E SEL = *South English Legendary*. Edited by Charlotte D'Evelyn, EETS 235, 236, and 244, 1956–9.

H.Synne = *Handlyng Synne*. Edited by Idelle Sullens, Medieval and Renaissance Studies 14, Binghamton, NY, 1983.

Met.Chron.Roy = *An Anonymous Short English Metrical Chronicle*. Edited by Ewald Zetl, EETS 196, 1935

PiersP = *Piers Plowman*. Composed by William Langland (d. by 1387). The edition used is A.V.C. Schmidt's *The Vision of Piers Plowman*, London, Dent, 1978.

Rob.Glo. = *The Metrical Chronicle of Robert of Gloucester*. Edited by William Aldis Wright, two volumes, Rolls Series 86, 1887. Reprinted in 1965 by Kraus Reprint Company, Wiesbaden.

Sir Gaw. = *Sir Gawain and the Green Knight*. Edited by A.C. Cawley, London, J.M. Dent, 1962.

Trevisa = *The Properties of Things*, by John Trevisa. This is a translation of Bartholomaeus Angelicus' *De Proprietatibus Rerum* made in Gloucestershire in 1398/9. Edited by M.C. Seymour, Oxford, Claredon Press, 1975. I read only pp. 41–191.

WP = *William of Palerne*. Edited by G.H.V. Bunt, Groningen, Bouma's Boekuis bv, 1985.

Wyc.Wks = *The English Works of Wyclif Hitherto Unprinted*. Edited by F.D. Matthew, EETS 74, 1880, rev. 1902. I examined only texts III, V, X, XI, XV, XVIII, XXII, XXIII, XXV. The remaining texts are either found only in a late MS, or likely not to have been composed by Wycliffe himself.

The Fifteenth Century

B Brut = *The Brut, or the Chronicle of England*. Edited by F. Brie, EETS 131, 1906.

Cap. = *John Capgrave's Lives of St. Augustine and St. Gilbert of Sempringham and a Sermon*. Edited by J.J. Munro, EETS 140, 1910.

Castle Pers. = *The Castle of Perseverance*. Edited by Mark Eccles in *The Macro Plays*, EETS 262, 1969.

Caxton = *The History of Reynard the Fox*. Translated from the Dutch Original by William Caxton. Edited by N.F. Blake, EETS 263, 1970.

Cely = *The Cely Letters 1472–1488*. Edited by Alison Hanham, EETS 273, 1975.

Kn. TL = *The Book of the Knight of the Tour Landry*. Edited by Thomas Wright, EETS 33, 1868, rev. 1906. MS British Museum, Harleian 1764.

Lon.Eng = *A Book of London English 1384–1425*. Edited by Majorie Daunt and R.W. Chambers, Oxford: Clarendon Press, 1967 (rpt. of 1931 edition).

Malory = *The Works of Sir Thomas Malory*. Edited in three volumes by E. Vinaver, Oxford, Clarendon Press, 1947. I have not read all of Malory's works looking for the constructions discussed here, but have instead looked at all examples in Kato's (1974) *Concordance* containing the participles *allowed, graunted, told, required, ordained, ordered, commanded, payed, asked, shown, promised, behoten, given*, and *defended* ('forbidden').

Marg.K = *The Book of Margery Kempe*. Edited by Sanford Meech and Hope E. Allen EETS 212, 1940.

ME Srms. = *Middle English Sermons*. Edited by Woodburn O. Ross, EETS 209, 1940.

Morte A. = *Morte Arthure*. Edited by Edmund Brock, EETS 8, 1871.

Paston = *Paston Letters and Papers of the Fifteenth Century*. Edited by Norman Davis, Oxford, Clarendon Press, 1971. My investigation was confined to pp. 1–100, 215–30, 390–415, 519–44, and 649–61.

The Sixteenth Century

Since it is quite clear that the recipient passive was the only possibility by the sixteenth century, I have checked only a small number of texts:

Ascham = *Roger Ascham: English Works*. Edited by William Wright, Cambridge, Cambridge University Press, 1904. I read only Part A of Toxophilius

Elyot = *The Boke Named the Governour, by Sir Thomas Elyot*. Edited by Ernest Rhys, London, Everyman's Library. I have compared this edition with the facsimile of the 1531 edition published by

Scolar Press (Menston, England, 1970) and have found no significant syntactic differences.

Fisher = *The English Works of John Fisher*. Edited by John Mayor, EETS e.s. 27, 1976. I read only pp. 1–250 in this investigation.

More = *The Apology*. Vol. 9 of *The Complete Works of St Thomas More*. Edited by J.B. Trapp, New Haven, Yale University Press, 1979.

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Brunner, Karl. 1963. *An Outline of Middle English Grammar*. Tübingen: Max Niemeyer. Fifth ed. of *Abriss der mittelenglischen Grammatik*.

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Denison, David. 1993. *English Historical Syntax*. London and New York, New York: Longman.

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Kato, Tomomi. 1974. *A Concordance to the Works of Sir Thomas Malory*. Tokyo: University of Tokyo Press.

Kurath, Hans, and Sherman Kuhn (ed.). 1956. *Middle English Dictionary*. Ann Arbor, Michigan: University of Michigan Press.

Lightfoot, David. 1979. *Principles of Diachronic Syntax*. Cambridge: Cambridge University Press.

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Lightfoot, David. 1991. *How to Set Parameters*. Cambridge, Massachusetts: The MIT Press.

Madden, Sir Frederic William (ed.). 1970 [1847]. *Lazamon's Brut, or, Chronicle of Britain*. New York, New York: AMS.

Mitchell, Bruce. 1979. F. Th. Visser *An Historical Syntax of the English Language*: Some Caveats. *English Studies* 60:537–542.

Mitchell, Bruce. 1985. *Old English Syntax*. Oxford: Clarendon Press.

Mustanoja, Tauno. 1960. *A Middle English Syntax*. Helsinki: Societé Neophilologique.

Russom, Jacqueline. 1982. An Examination of the Evidence for OE Indirect Passives. *Linguistic Inquiry* 13(4):677–680.

Tatlock, John S. P., and Arthur G. Kennedy (ed.). 1963. *A Concordance to the Complete Works of Geoffrey Chaucer and to the 'Romaunt of the Rose'*. Gloucester, Massachusetts: Peter Smith.

van der Gaaf, Willem. 1929. The Conversion of the Indirect Personal Object into the Subject of a Passive Construction. *English Studies* 11:1–10, 58–67.

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3

Perception and Raising Verbs: Synchronic and Diachronic Relationships

Julia Barron

3.1 Introduction

In this paper I shall be examining the relationship between verbs denoting visual perception or visible appearance and subject-to-subject raising verbs denoting epistemic judgment. I examine them from two points of view. In the first place I look at synchronically related forms, where productive morphosyntactic processes relate verbs of perception to raising verbs. Then I look at some diachronic data and develop an account of how some raising verbs have arisen historically from predicates with full argument structure and show how one notion of semantic bleaching may correspond to the historical dissociation of function and theta-role. This in turn affects the syntactic representation of these predicates. Using the parallel levels of representation of the LFG framework I postulate that the one-to-one mappings of concepts to grammatical functions through the media of Sem(antic)-structure, Arg(ument)-structure and F(unctional)-structure may become shifted through suppression, caused either by productive morphosyntactic processes or historic reanalysis. For example, a perception verb may become a "raising verb" if three conditions apply: i) the presence of secondary predication; ii) suppression of the perceiver argument through detransitivisation; (iii) cognitive shift from a physical to a mental process. This results in the dissociation of the subject function from its originally assigned theta-role.

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

The paper is organized as follows. In part one I briefly describe the phenomenon of subject-to-subject raising verbs. In part two I look at the semantic properties of such verbs reflecting upon the reasons why perception predicates are particularly suited to become markers of epistemic modality. In part three I briefly outline the theoretical approach I adopt. In part four I examine some synchronic data illustrating the relation between verbs of perception and "raising verbs". I then examine the diachronic development of a predicate from typical one-to-one mapping of θ-role, argument and function structure to its current status as a raising verb. In part five I present my conclusion.

3.2 Subject-to-Subject Raising Verbs

At a pretheoretical level we might say that in a sentence like (1) the subject of the sentence *Leo*, has no semantic relation to the matrix verb *seem*, but rather is associated with the verb of the embedded clause.

(1) Leo seems to prefer red wine.

This is illustrated by the possible paraphrase in (2).

(2) It seems that Leo prefers red wine.

Put more formally, we say that predicates like *seem* do not assign a theta-role to their subject. Accounts are offered in most frameworks to explain how the subject of the embedded predicate ends up as the superficial subject of the matrix verb: in Relational Grammar (Postal 1974) it is known as subject-to-subject raising (within a general notion of "ascension") and is motivated by the Final 1 Law, i.e. the rule that (in English) all clauses must ultimately have a subject; in Government and Binding Theory (Chomsky 1981) it is an instance of NP movement and is "Case-driven", i.e. the subject NP has to move in order to acquire Case. The following kind of derivational structure would be posited for the sentence in (1):

(3) [e seem [Leo to prefer red wine]]

In LFG, the phenomenon is treated as a one of functional identity at the level of f-structure. *Seem* states in its lexical entry that it subcategorizes for an XCOMP to which it does assign a theta-role, and a subject function, to which it does not. This is represented as in (4).

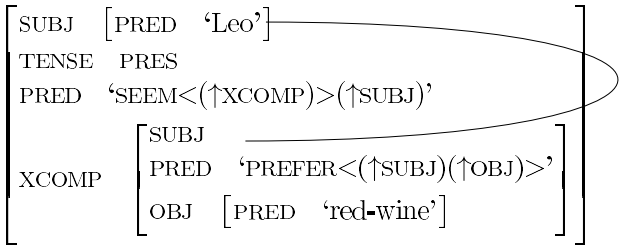
(4) (↑PRED) = 'SEEM <(↑XCOMP)> (↑SUBJ)' (Bresnan 1982:377)

The subject is identical to the subject of its complement clause by the mechanism of functional control, the statement of which is found in the lexical entry of the verb:

(5) (↑SUBJ) = (↑XCOMP SUBJ)

The f-structure representation of sentence (1) would be as in (6).

(6)



LFG then, has a non-movement account of the phenomenon of "subject raising". However, what has not really been addressed in the literature, to my knowledge, is how this particular phenomenon arises diachronically. If it is one of the fundamental characteristics of predicates that they put semantic restrictions on the argument which is mapped to subject, why should it be that these "raising" predicates are in some way defective? One clue seems to lie in the relationship between the pairs of sentences in (7).

(7) a. The waiter was seen to be drunk.
b. The waiter seemed to be drunk.

(7a) and (7b) both express a judgment based on the result of visual perception by an individual who is not expressed.

3.3 The Semantics of Subject-to-Subject Raising Verbs

Many subject-to-subject raising verbs are synchronically markers of epistemic modality. That is, they are concerned with expressing the speaker's attitude or belief relative to the content of a proposition. "Epistemic modality involves the potential convergence between the expressed world and the reference world—states of affairs that may be actualized—and issues of evidence and criteria for judging an actualized world." (Frawley 1992:390).

It should therefore not be surprising that verbs of visual perception should be cognate with verbs expressing epistemic modality. In the first place visual perception is our primary source of intellectual knowledge. As Miller and Johnson-Laird (1976:585) point out, "*Perceive (x,y)* is a predicate that denotes the process involved when an internal representation of the external world is constructed out of information from the receptors".

For Givón (1982), epistemic modality is the way a language expresses the relative validity of propositions, and this depends in turn on how the language and the culture in which the language is embedded interpret a universal scale of epistemic choice. He claims that languages quantify evidence along four gradients:

1. Person: Speaker > Hearer > Third Person
2. Sense: Vision > Hearing > Other Senses > Feeling
3. Directness: Senses > Inference
4. Proximity: Near > Far

From this we can see that the most privileged evidence is that gained by a speaker visually at close quarters. In other words, seeing is believing and visual evidence is the primary source of such information.[1]

In the second place, as Sweetser (1990) notes, there is a tendency in language to use metaphorical processes, notably the "mind-as-body" metaphor, to extend the purely physical meanings of words to the cognitive domain.

> Vision and intellection are viewed in parallel ways, partly because of the focusing ability of our visual sense - the ability to pick out one stimulus at will from many is a salient characteristic of vision and of thought, but certainly not characteristic of any of the other physical senses except hearing....But most of all vision is connected with intellection because it is our primary source of objective data about the world. (Sweetser 1990:38)

If we inspect some common examples of "raising" verbs, it becomes clear that they all express the speaker's epistemic notions of possibility, probability etc.:

(8) a. Leo seems to be in a bad mood.
b. Clio appeared not to understand the question.
c. This summer promises to be a scorcher.

Such verbs have a default subjective, or speaker-oriented, interpretation in the sense that they cannot readily be ascribed to a second or third person. They either refer to the speaker's point of view, or to an unspecified generic "perceiver". As Postal (1971) points out: "... taking

[1]The dominance of the field of visual perception in a hierarchy of sense perceptions is reported by Viberg (1984) and Sweetser (1990), however, interesting research by Evans and Wilkins (1998) has recently come to light which suggests that in the Aboriginal communities of Australia hearing is the sense perception which metaphorically extends into intellection and that this is due to the importance of their oral/aural culture.

seem and *think* to contrast, it is true that both describe inner affairs which are, in fact, directly knowable only by the one who experiences them. However, *seem* not only describes such a domain, but it says it describes such a domain." This explains the contrast in the following pair:

(9) a. Clio seems to me to be dishonest.
b. ?Clio seems to you to be dishonest.

In (9a) the speaker is making a judgment about *Clio* and the omission of the phrase *to me* would lead to the same interpretation, however in (9b) the speaker is making a judgment about the hearer's perception of *Clio*, and the presence of the phrase *to you* is obligatory, as without it the interpretation would be that of (9a).

With regard to the absence of semantic relation between the matrix verb and the syntactic subject, several commentators from different theoretical positions (e.g., Ruwet 1972; Langacker 1995; Traugott 1996) have observed that one should be wary of assuming that "raising" and "control" verbs fall into discrete categories. In fact such commentators, particularly with regard to verbs like *believe, expect, persuade, cause,* prefer to talk of a continuum between fully "control" verbs at one end of the spectrum, where the NP under question has a semantic relation both to the matrix verb and the embedded infinitive, and fully "raising" verbs at the other end of the spectrum where the NP has no semantic relation to the matrix verb. The difficulty of assigning these verbs to discrete categories has long been noted (see for example Huddleston 1976).

Aspectual verbs like *begin, stop* are often noted as being variously raising or control (see C. Rosen 1997:198 ff.5), however verbs like *look, taste, seem, appear* are not straightforwardly raising verbs, as they are often uniformly analyzed. The degree of semantic involvement between the subject and the verb may vary depending upon the complement. For example, as pointed out by Gisborne (1996:18) the following pair of sentences, adapted from his, have a difference in meaning which is brought out by the material in brackets.

(10) a. The cake looks pretty (!but it isn't).[2]
b. The cake looks nice (but it isn't).

In (10a) it is understood that it is some physical attribute of the cake, i.e. some physical visual evidence, which renders it pretty, so it would be unexpected if it were not the case, for example if it turned out

[2]Gisborne gives the example *The cake looks pink (!but it isn't).* However I find this less convincing evidence for his argument than example (10a) where *pretty* is substituted for *pink*.

to be a trick of the light. In (10b), on the other hand, the niceness of the cake depends upon some form of mental evaluation or belief of the evidence on the part of the speaker. (10b) is thus an epistemic use of *look*, where the subject *the cake* has less semantic relation with *look* than the subject in (10a). The varying degrees of semantic relation between subject and predicate can be further exemplified in the following:

(11) a. Leo seems tired tonight.
b. Leo seems to have solved the problem.

(11a) implies that there is something directly in Leo's physical appearance which would lead one to conclude that Leo is tired (sore eyes, yawning etc.) so that *Leo* in some sense is involved in the act of "*seem*-ing", though not in control of it, whereas in (11b) the fact that Leo may have solved the problem is not necessarily visually perceivable but may be information obtained very indirectly. For example if the Christmas tree lights suddenly start working as a result of Leo's fiddling with the connections, then *Leo* is not involved in '*seem*-ing' but in solving the problem, as is clear from the potential paraphrase of (11b):

(12) It seems that the problem has been solved by Leo.

This control-raising continuum analysis clearly has parallels with English modals (Warner 1993; Roberts 1993; Hopper and Traugott 1993). So for example (13a) below illustrates the deontic use of a modal where there is assumed to be some semantic relation between the matrix subject and the modal verb (i.e. a control relation between the subject of the modal and the unexpressed subject of the lexical verb) and (13b) illustrates the case where there is no relation at all between them and the matrix subject is understood to be the subject of the lexical verb.

(13) a. Leo must try to control his drinking.
(= Leo is obliged to try...)
b. Leo must have had too much drink (for him to behave like that). (= it must be that Leo has...)

The difference between the raising verbs like *appear* and *seem*, and epistemic modal verbs, such as *may, might, should* and *must* (in their epistemic uses), is that the former in some way express the source of or grounds for the speaker's belief. They are evidentials.

As a final observation, *seem* is generally considered to be a purely stative predicate. However, there are occasions when *seem* can function marginally as an active verb as the following examples indicate.

(14) ?(When the teacher entered the room) what Mary did was seem to be working.

(15) The teacher persuaded the children to seem interested in the lesson (for the benefit of the schools' inspectors).

(16) Mary deliberately seemed to be ill (so that her mother would not send her to school).

In each of the above examples the implication is that the subject of *seem* is in control of their appearance. In other words, these are non-epistemic uses. Such control uses are admittedly contrived or humorous:[3]

(17) "Thurlow: Your majesty seems more yourself.
King: Do I? Yes, I do. I have always been myself even when I was ill. Only now I seem myself. That's the important thing. I have remembered how to seem. What, what?"
(Alan Bennett, The Madness of George III)

3.4 The Theoretical Framework

The theoretical framework that I use to explore these issues is Lexical-Functional Grammar. This syntactic model stems from the work of Joan Bresnan and Ronald Kaplan (Bresnan (ed.) (1982) and subsequent), Alsina (1992, 1996), Tara Mohanan (1994), King (1995), Butt (1995), Dalrymple et al (1995) and references therein. In addition I shall draw on the work of Jackendoff (1990) and Van Valin and LaPolla (1997). Lexical-Functional Grammar is, as the name implies, essentially a lexicalist framework, which assumes a clear division between the lexicon, where words are formed, and the syntax, where phrases are formed. Lexical representations are factored into parallel levels which interact through a number of well defined mapping procedures.

The approach adopted in this paper calls for a semantic decomposition of predicate meaning in the spirit of Jackendoff (1990), Croft (1997) and Van Valin and LaPolla (1997). Thus the conceptual information associated with a predicate and which is relevant to its argument structure will be given at a level which I shall call Semantic Structure (sem-structure) following Mohanan (1994). sem-structure interacts with the parallel levels of argument structure, functional structure, constituent structure and information structure as outlined below.[4]

[3]Such uses of *seem* will be seen to correspond to the addition of an element CAUSE (x,...) to the basic semantic structure of the predicate *seem* in the representation to be outlined in section 2.5.

[4]I have only given detail of areas of the theory which are particularly pertinent to my topic, or differ from standard accounts. For the general principles of the theory the reader is referred to the titles in the foregoing paragraphs.

3.4.1 Semantic Structure

It is of course not the case that all the information that is associated with a predicate's meaning (its Lexical Conceptual Structure (Jackendoff 1986)) needs to be represented at sem-structure. For example the verbs *stroke* and *tickle* have distinct lexical conceptual structures in that they are associated with different activities and speakers must know that they are distinct, however such differences are not relevant to any syntactic expression or alternation in the expression of the predicate.

The recent "communication-and-cognition perspective" approach of Van Valin and LaPolla (1997) (henceforth VV&LP) utilizes a system based on predicate logic in which sentences are represented as a layers of logical structures, with predicates and arguments modified by different operators at different levels of the clause.[5] It is beyond the scope of this work to give a detailed account of the workings and rationale of the theory (I refer the reader to VV&LP). The relationship between related verbal predicates is achieved by the use of very general lexical rules which add elements to semantic structures in order to obtain one situation type from another.

Verb class	Logical structure
State	**predicate′** (x) or (x,y)
Activity	**do′** (x,[**predicate′** (x) or (x,y)])
Achievement	INGR **predicate′** (x) or (x,y), *or*
	INGR **do′** (x,[**predicate′** (x) or (x,y)])
Accomplishment	BECOME **predicate′** (x) or (x,y), *or*
	BECOME **do′** (x,[**predicate′** (x) or (x,y)])
Active Accomplishment	**do′** (x,[**predicate**$_1$′ (x) or (x,y)]) &
	BECOME **predicate**$_2$′ (z,x) or (y)
Causative	α CAUSE β, where α,β are LSs of any type

TABLE 1

Table 1 (taken from VV & LP 1997:109 Table 3.4) illustrates how *Aktionsart* classes are related to semantic structures.

The predicates are presented in boldface followed by a prime. They are constants in this metalanguage. Other constants are **be′** for identificational and attributive constructions, and **be-LOC′** for locative constructions. Variables are in normal typeface. The elements in capitals are modifiers of the predicate. INGR (ingressive) denotes instantaneous changes, while BECOME encodes changes over some temporal span. Thus

[5] I shall henceforth use the term *semantic structures* for VV&LP's *logical structures*.

achievements are predicates modified by INGR and accomplishments are predicates modified by BECOME. In order to reflect the fact that there are many verbs which alternate between different situation types the representation simply requires the addition of the semantic structure for an accomplishment "BECOME **predicate′** (z,x) or (y)" to the activity predicate's structure "**do′** (x, [**predicate′** (x) or (x,y)])" in order to arrive at the structure for the active accomplishment given in the table above. The rules are thus general and not required for each lexical item. The alternation between an achievement and a causative achievement is illustrated below using the sentences in (18):

(18) a. Leo broke the glass.
b. The glass broke.
c. The glass is broken.

(18a) denotes a causative achievement. As such its semantic structure will be as in (19). The semantic structure for an achievement is embedded within the semantic structure of CAUSE which is [**do′** (x,∅)] CAUSE. The second argument of **do′** (∅) indicates that this argument position is unspecified, which is the semantic structure for an unspecified activity. We do not know how Leo broke the glass. The information conveyed in this structure is that Leo carried out some unspecified action and caused an event in which the glass became (punctually) broken. The tense operator TNS has the whole clause in its scope.

(19) <$_{\text{TNS}}$ *PAST* [**do′** (Leo, ∅)] CAUSE [INGR **broken′** (the glass)]>

(18b) on the other hand denotes an achievement. The event which was embedded in (19) is now the whole structure in (20).

(20) <$_{\text{TNS}}$ *PAST* [INGR **broken′** (the glass)]>

(18c) denotes a state, which is simply represented by the predicate.

(21) <$_{\text{TNS}}$ *PRES* [**broken′** (the glass)]>

Logical entities in the semantic structure map onto arguments at argument structure.

3.4.2 Argument Structure

This is a level where the syntactic valency of a predicate is represented. The relative prominence among arguments is represented at this level, but not their individual thematic roles. The prominence at argument structure is decided by the actor-undergoer hierarchy.[6]

[6]If a comparison with LMT were to be made it would appear that this could be translated as a continuum between [−o] (the first argument of **do′** (x,...)) and [−r] (the single argument of a state predicate, **pred′** (x)).

Arg. of	1st arg of	1st arg of	2nd arg of	Arg. of state
DO	**do′** (x,...)	**pred′** (x,y)	**pred′** (x,y)	**pred′** (x)

[—→ =increasing markedness of realization of argument as macrorole]

Arg(ument)-structure thus effectively contains a distillation of the information supplied by the semantics of the predicate, just the kind of information that is targeted by morphosyntactic processes such as passivisation, for example.

An example of semantic structure (sem-str) to arg-structure mapping is as follows. (22) is the representation of the sentence *Leo wrote the letter*.[7]

(22) sem-str: DO (Leo^a [**do′** (Leo^a, (**write′** (Leo^a, the letter^b) &
CAUSE [BECOME **written′** (the letter^b)
arg-str: ARG$_1^a$ ARG$_2^b$

Leo is the most prominent argument in the actor-undergoer hierarchy and maps to ARG$_1$ while the NP which is lower on the hierarchy, *the letter*, maps to ARG$_2$. What is apparent from these representations is that a single argument may correspond to an entity at semantic structure which is fulfilling several semantic roles simultaneously. Thus *Leo* appears three times in the sem-structure, once as an AGENT (the argument of DO—the highest role), once as an ACTOR (the first argument of **do′** and once as a WRITER (the first argument of **write′**). The NP *the letter* appears twice. I have used superscript letters to associate elements mapped between sem-structure and arg-structure rather than another convention, such as linking lines, for clarity of exposition.

In the presence of passive morphology the highest argument is suppressed and ARG$_2$ becomes the only available argument which may map onto a core function. The semantic structure tells us that *Leo* is an AGENT and as such may be represented by the appropriate adposition *by* as an adjunct phrase in the passive structure.

3.4.3 Functional Structure

This is a level where the syntactic functions (subject, object) of arguments, as well as non-arguments are represented as feature value ma-

[7] I am ignoring tense and aspect operators for simplicity.

trices. In addition grammatical features such as tense, aspect, mood, person, number etc., are represented. These may be morphological elements which can build partial feature structures.

The Subject Principle

In common with most analysts, I propose a constraint on well-formedness of mapping such that a subject must always be present in the f-structure. Where no argument is mapped onto subject, then an expletive may be provided. This is a parameterized constraint so that for example whereas a zero-valent predicate which supplies no arguments such as *rain* will have an expletive subject in English, there is no such requirement in pro-drop languages like Italian. Thus where there is only one argument, such as the single argument of a state predicate, this will map onto subject.

3.4.4 C(onstituent)-structure

This is where the surface order of structural constituents is encoded, both in terms of dominance and precedence relations. Constituent structure in English is represented by tree structures. Lexical entries carry some c-structure information, such as the syntactic category and phonological shape of the item. F-structures and c-structures are linked by means of annotated phrase-structure nodes. Each node in a phrase-structure tree must correspond to some piece of f-structure. C-structure representations are subject to the principles of Economy of Expression and Lexical Integrity:

(23) **Economy of Expression**: all c-structure nodes are optional, and are not used unless required for expressivity or completeness.

This means that for example, in a pro-drop language, where the verb carries person and number information, there will be no need for a node corresponding to the SUBJ function, unless there is an overt SUBJ which may be used for emphasis.

(24) **Lexical Integrity**: morphologically complete words are leaves of the c-structure tree and each leaf belongs to one and only one c-structure node.

3.4.5 Information-structure

It is clear from the work of Lambrecht (1994), Langacker (1995) and many others that the way we organize our utterances depends upon discourse matters such as the hearer's accessibility to the referent etc. This is the spirit of Lambrecht's "Integrative approach":

> Grammatical structures are motivated by the requirements of information structure, i.e. sentence form and discourse function are inherently linked; a sentence has the form it does because this form is most appropriate for a given communicative function.

It is possible to focus a predicate, an argument or a whole sentence. Predicate focus is the universally unmarked type of focus structure. (Definitions are adapted from Lambrecht).

(25) a. **Predicate Focus:** The pragmatic assertion is "about" a referent or set of referents. The assertion adds a predicate to a given argument (alternative labels are "subject-predicate", "topic-comment").
b. **Argument Focus**: The pragmatic assertion provides the missing argument in a presupposed open proposition. The assertion adds an argument to a given predicate.
c. **Sentence Focus**: The pragmatic assertion introduces a new discourse referent or a new situation. It combines a new argument with a new predicate, i.e. it lacks a presupposition.

Predicate focus structure (topic-comment, subject-predicate) is the unmarked choice in most languages, therefore I will assume that the default TOPIC will be the f-structure SUBJECT.

The linking of i(nformation)-structure to f-structure is via c-structure rule annotations of the following type (for English):

(26) S ⟶ NP VP (= default)
$\downarrow \in$ (↑TOP) $\downarrow \in$ (↑FOC)

Of particular interest to us is the interaction of this rule with constructions with *seem*. The following examples illustrate the different focus types.

(27) a. It seems that Leo has drunk too much. (sentence focus)
b. There seems to be a mistake in the document. (sentence focus)
c. Leo seems to have drunk too much. (predicate focus)
d. *A mistake seems to be in the document. (predicate focus)
e. LEO seems to have drunk too much. (argument focus)
f. It seems that LEO has drunk too much. (argument focus)

When a predicate such as *seems* has no subject argument associated with it to act as topic, the focus will exclusively determine the sentence structure. If the whole proposition is focused, an expletive will be provided in the subject position (27a and b). When the subject of the embedded predicate is the sentence topic, and its VP is the focus, then

the subject of the embedded predicate will be associated with the matrix subject function (27c). An indefinite NP cannot appear as sentence topic (27d). Intonation will determine argument focus (27e and f).

3.4.6 The Representation of the Perception of Propositions

In order to express the mental perception of an abstract entity or proposition, two clauses may have to be combined in some way. At the simplest level, coordination could be used as in (28).

(28) Clio saw the problem and the problem was difficult.

Alternatively, subordination could be used:

(29) Clio saw the problem, which was difficult.

Or, more economically perhaps, by making the proposition an argument of the verb of perception either by the construction in (30a) or by the construction in (30b).[8]

(30) a. Clio saw that the problem was difficult.
b. Clio saw the problem to be difficult.[9]

(30a) and (30b) correspond respectively to the following general semstructures (ignoring operators such as tense):

(31) **perceive′** (x, y) & **be-of-opinion′** (x, [**be′** (y, [**true′**])])
where y = proposition

(32) **perceive′** (x, y) & **be-of-opinion′** (x, [<$_{TNS}$ <**pred′** (y, …)>>])
where y = entity

In these structures the phrase **perceive′** is used to convey the extended use of *see* to reflect the physical and intellectual properties associated with the predicate in that the knowledge source may be not physically seen, but rather achieved through deductive powers. The presence in the semantic structure of the element **be-of-opinion′** is intended to convey that some intellectual processing has taken place. The structure in (31) is given for *see* when it is roughly synonymous with *believe*, in that the truth of the proposition is presupposed. In other words, it has the type of interpretation that '*x* perceives some state of affairs or proposition, *the problem is difficult*, and is of the opinion that this proposition is true'.

[8] In Barron (1999) I argue that epistemic predicates such as *believe, consider, see* with infinitival complementation are a type of object control construction in which the judged entity is an argument both of the matrix and the embedded predicate, hence I do not regard them as either subject-to-object raising or ECM constructions.

[9] One referee found this example only marginally acceptable. It certainly sounds better to me when of the type *"Clio saw the problem to be a difficult one"* or *"Clio saw her solution to be problematic."*

The subjective judgment expressed in (30b), on the other hand, which has the structure in (32) does not presuppose the truth of the perception. It states that 'x has perceived an entity y and is of the opinion that y is the argument of some predicate'.[10]

Of course if the speaker *is* the perceiver/believer it becomes redundant to specify this. It can be taken for granted that a particular speaker is expressing his/her own thoughts with regard to a proposition. The most economic way then to express such clauses is to express the proposition and the grounds for belief. It is not necessary to use a first person argument at all. In English, the epistemic modal verbs *may, might, should* etc. express the speaker/believer relation with regard to a proposition, but they do not express the source of belief, unlike epistemic modals cognate with verbs of perception, which do.

This would appear to be an environment in which we could follow a proposal of Jackendoff (1990) that in the case of certain predicates, certain argument positions are prefilled in the semantic structure. The notation we adopt for such selection restrictions is the use of subscripts on variables in the logical structure, for example *drink* would be:

(33) **do′** ($x_{animate}$, [**drink′** (x), (y_{liquid})])

Thus here we might wish to claim that in those predicates where speaker and perceiver/cognizer are the same person then this is reflected in the following semantic structure, which incorporates the selection restrictions into (32):

(34) **perceive′** ($x_{speaker}$, y)
& **be-of-opinion′** ($x_{speaker}$, [<$_{TNS}$<**pred′**(y,...)>>])
where y = entity

Whether or not the argument corresponding to the speaker/perceiver is expressed in the syntax depends upon the interaction of a variety of phenomena to be explored in the next section. As an alternative strategy, it is possible that the perception be attributed to some kind of generic unspecified perceiver, "people in general", in which case the argument slot will be marked by $\emptyset$. In this case it will have no mapping to syntax.

3.5 From Verbs of Perception to Epistemic Raising Verbs

Given that vision is the primary sensory source of intellection, it should not be surprising that there are many languages in which the verb meaning 'to see' is related to a verb meaning 'to seem' in its sense of 'to be

[10] As Alan Cruse (p.c.) notes this representation effectively states that presuppositions may be part of the semantic structure of predicates, a proposal which is not uncontroversial.

perceived as'. The relatedness between forms is seen in a variety of active morphosyntactic processes.

Latin is a language which illustrates two distinct routes of development from a predicate of physical perception to a "raising" verb of epistemic modality. The first involves the use of a productive morphosyntactic process which over time led to the lexification of a new meaning. This is the *videre* 'see' to *videri* 'seem' process to be discussed below. The second involves the diachronic development from Late Latin *similare* 'to look like, be similar to' to Modern Romance of to *sembler* (French) and *sembrare* (Italian) 'to seem'. This will be discussed in section 3.6.

In the following section we outline some of the morphosyntactic strategies used by languages to derive an epistemic interpretation from the visual perception predicate.

3.5.1 Morphosyntactic Strategies—Passive

As seen in 2.4.2, passive is a morphosyntactic process which suppresses the highest-ranked argument at argument structure. The argument becomes unavailable for mapping to a direct function, but may be represented by an adjunct phrase appropriate to its semantic role. For example, a suppressed COGNIZER (the highest argument in a mental state predicate) may be realized as an adjunct marked with the adposition *to*.

Latin is one language which uses the passive to derive a form which may be interpreted as 'to be seen' or 'to seem' depending upon contextual factors. (35a) gives the relevant forms of the active and passive infinitives while (35b) illustrates these forms in a typical predicate.

(35) a. *videre* 'to see' — *videri* 'to be seen, to seem'
b. *monere* 'to warn' — *moneri* 'to be warned'

Let us now turn to some examples from Latin, which illustrate the use of passive morphology to give on the one hand a straightforward passive reading and on the other an epistemic reading:

(36) ubi sol etiam sex mensibus continuis non videtur
where sun even six months continuous not see.PRES.PASS.3SG
'where the sun is not seen for six months in a row'
(Varro, *Res Rusticae* 1,2,4)

(37) idonea mihi Laelii persona visa est
ideal-NOM me.DAT Laelius.GEN person-NOM see.PP is
'Laelius seemed to me the ideal person' (Cicero, *Laelius* 1,4)

(38) ne omnia mea culpa cecidesse
lest all.NEUT.PL.NOM my.ABL fault.ABL fall.PERF.INF

videantur
see.PASS.PRES.SUBJ.3PL
'so that everything should not seem to have collapsed through my fault'. (Cicero, *Epistulae ad Familiares* 14,3)

In (36) the interpretation is one of physical perception. The perceiver is taken to be a generic, unspecified argument. In the active voice the sentence would possibly have the interpretation '*they don't catch sight of the sun for six months in a row.*'[11] The structure of (36) is as follows (ignoring the temporal adverbial):

(39) sem-str: $<_{\text{TNS}}$ *PRES* $<$ ¬ INGR **see′** ($\emptyset^a$, sol^b)>>

arg-str: PRED $\underline{\text{ARG}}_1^a$ ARG_2^b

f-str:
$$\begin{bmatrix} \text{PRED} & \text{'videri} < \_\_ > \text{'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \left[\text{PRED} \quad \text{'sol'}\right]^b \\ \text{POL} & \text{NEG} \end{bmatrix}$$

The unspecified perceiver redundantly maps onto an argument slot at argument structure,[12] however this is suppressed by passive morphology, leaving only ARG_2 to map onto the subject function in order to fulfil the Subject Condition.

In (37) however, there is not necessarily an object of physical perception, rather the structure appears to be that of (34) above. The speaker is making a judgment about a person. That judgment contains a second predicate *idonea* 'ideal'. The speaker argument is the first argument in the argument structure, the second argument being the argument *persona Laelii* which controls the secondary predication. There are then effectively three argument positions for this extended meaning of *videre*, as with an object control type construction. Under passivisation *videri* reduces to a two-place predicate. If we substitute the first person pronoun *ego* for the variable $x_{speaker}$ and the nominal *persona Laelii* for the variable y, we arrive at the following structure:

(40) sem-str: $<_{\text{TNS}}$ *PAST* $<$**perceive′** (ego^a, persona Laelii^b) &
be-of-opinion′ (ego^a, [**idonea′** (persona Laelii^b) >>]^c)

arg-str: PRED $\underline{\text{ARG}}_1^a$ ARG_2^b ARG_3^c

[11] This is thus an achievement verb, as one reviewer points out.

[12] The mapping is redundant because an unspecified generic argument has no expression at c-structure. The boolean feature ¬ is used to indicate negation.

$$\text{f-str:}\begin{bmatrix}\text{PRED} & \text{`videri} < \underline{\quad}, \underline{\quad} > \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \left[\text{PRED} \quad \text{`persona-Laelii'}\right]^{b} \\ \text{XCOMP} & \left[\begin{matrix}\text{SUBJ} & {}^{b} \\ \text{PRED} & \text{`idonea} < \underline{\quad} >\text{'}\end{matrix}\right]^{c} \\ \text{AADJ} & \left[\text{PRED} \quad \text{`mihi'}^{a}\right]\end{bmatrix}$$

Passive morphology has suppressed the speaker/perceiver argument so that it cannot be mapped onto the subject.[13] It is realized as an optional argument adjunct in dative case, *mihi*, the case of unlinked COGNIZERS. This means that f-structure of *videri* contains two argument positions, SUBJECT and XCOMP. The second argument, *persona Laelii*, then maps onto the subject function, by the requirements of the Subject Condition and of information structure (it is assumed to be the topic of the sentence). The secondary predicate, *idonea*, has the function of an XCOMP with a controlled subject. The "promotion" of the perceived entity, *persona Laelii*, to subject position may lead to an interpretation in which the entity is somehow responsible for causing the perception, i.e. that there is something about the entity which induces the judgment. This example illustrates the point made in section 2.4 that such predicates have both "control" and "raising" properties.[14]

It is not always the case that there is an entity such as *persona Laelii* which is the object of abstract perception, or judgment. The perceived object may be a proposition. The example in (38) is of this type. We might propose a structure which is similar to (34), but where the variable *y* is the proposition. In addition there is no entity singled out about which to form an opinion. The structure then reflects the mental perception of a proposition. A proposition, unlike an event, is a stative state-of-affairs.

(41) **perceive′** ($x_{speaker}$, y)
where y=proposition with the structure <$_{TNS}$< **pred′** (z, ...) >>

In (38) the subject of the embedded clause is not identical with the suppressed perceiver, which appears to be a generic, unspecified entity. The predicate would provide two argument positions: one for the per-

[13]This is indicated schematically by underlining.

[14]One referee comments that the sentence carries an implication that the judgment about Laelius being the ideal person was wrong, or unsafe, however, I think this may be an effect of the presence of the past tense which renders such an interpretation more plausible. For me, the meaning is that Laelius was perceived (whether directly or indirectly) to be the ideal person, even if it later transpired that the perception was misleading.

ceiver; one for the proposition. Passive suppresses the generic perceiver argument. However, epistemic *videri* still provides two positions in the functional structure. Here the subject of the propositional complement, *omnia*, as is evident from the verbal agreement, fills the matrix subject function. The possibility of subject sharing between the matrix verb and its complement appears to be driven by two factors, firstly the subject principle which requires the matrix clause to have a subject; and secondly, the information structure requirement that the topic be mapped to subject. Note that *videri* has not semantically selected its subject in this instance, in other words there is emerging a dissociation between the syntax and the semantics. This is represented in the f-structure by placing the position in the predicate corresponding to the subject function outside the angled brackets. Positions within the angled brackets are for those functions which are semantically selected by the predicate.

(42) sem-str: $<_{\text{TNS}}$ *PRES* $<$**perceive′** $(\emptyset^a$,
$[<_{\text{TNS}}$ *PAST* $<_{\text{ASP}}$ *PERF* $<$**cedere′**(omnia)$>>]^b) >>$

arg-str: PRED $\underline{\text{ARG}}_1^a$ ARG_2^b

f-str:

$$\begin{bmatrix} \text{PRED} & \text{`videri} < \_\_ > \_\_ \text{'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & [\text{PRED} \quad \text{`omnia'}] \\ \text{XCOMP} & \begin{bmatrix} \text{SUBJ} & \\ \text{PRED} & \text{`cedere} < \_\_ > \text{'} \\ \text{ASP} & \text{PERF} \\ \text{TENSE} & \text{PAST} \\ \text{OBL} & \text{`mea culpa'} \end{bmatrix}^b \end{bmatrix}$$

3.5.2 *Videri* as a Control and Raising Verb

The form *videri* in Classical Latin was used with both meanings, 'to be seen' and 'to seem'. The latter meaning is again used in two ways, one in which there is an entity which is perceived and which is in a sense responsible for the perception. This is the meaning found in (40) and would be given the following lexical entry, which is effectively that of a control construction:

(43) 'videri < (↑SUBJ), (↑XCOMP), ((↑AADJ))> '

The second use is that found in (42) which would be given the following lexical entry, which is effectively that of a raising construction:

(44) 'videri < (↑XCOMP), ((↑AADJ))> (↑SUBJ)'

We can therefore begin to understand why such predicates are typically ambiguous between control and raising interpretations.

There appear to be three conditions which are necessary to derive the epistemic reading from the passivized perception predicate. These are given as (45):

(45) (i) cognitive shift of the meaning of "perception" from a physical to a mental process
(ii) the suppression of the perceiver argument through detransitivisation
(iii) the presence of secondary predication (as in (37) and (38))

To illustrate that the Latin case is not exceptional, we now turn to a brief survey of the relationship between verbs of physical visual perception and verbs indicating epistemic modality in a number of unrelated languages. I shall be offering evidence from Turkish (Altaic-Turkic), Dagaare (Gur), Japanese, and Zulu (Bantu).

3.5.3 Reflexive Passive in Turkish

Some languages may have a specific suffix to indicate the shift from physical to abstract perception in the presence of an embedded proposition as can be seen if we examine the following data from Turkish, where the predicate g*örmek* 'to see' is related to the predicate *görünmek* 'to seem' via the suffix *ün*.[15]

(46) ben John-u dün is-e gid-er-ken gör-dü-m
I John-ACC yesterday work-DAT go-PRES-while see-PST-1SG
'I saw John going to work yesterday'

(47) John dün is-e gid-er-ken (benim tarafindan)
John yesterday work-DAT go-PRES-while (I-GEN by)
gör-**ül**-dü-∅
see-PASS-PST-3SG
'John was seen (by me) going to work yesterday'

(48) John (ban-a) dün is-e gid-iyor gör-**ün**-dü-∅
John (I-DAT) yesterday work-DAT go-PROG see-SUFFIX-PST-3SG
'John seemed (to me) to be going to work yesterday'

In (46) we have an active perception predicate, which takes an event object, containing secondary predication. In (47), the perception predicate is passivized, by the passive morpheme *ül*.[16] The suppressed perceiver is optionally represented by an a(rgument)-adjunct, the *by*-phrase,

[15] The quality of the vowel in the suffix depends upon vowel harmony.
[16] Again vowel harmony determines the quality of the vowel.

benim tarafindan. In (48) on the other hand, we have a structure which is reminiscent of the Latin construction in (37). The suffix suppresses the perceiver argument which is expressed optionally as a dative marked a-adjunct, *ban-a*, i.e. as a suppressed COGNIZER rather than a physical perceiver. The structure appears to be ambiguous between the perception of an individual, whose outward appearance causes an opinion, and the perception of a proposition. In the former interpretation, the perceiver *ben* maps onto ARG_1. The object of perception, *John*, which is shared with the subject of the proposition, *John was going to work*, is mapped onto ARG_2. The proposition itself maps onto ARG_3. We assume that the effect of the suffix *-ün* is to suppress the mapping of ARG_1 to the subject function. Thus ARG_2 maps to the matrix subject function. ARG_3 maps to the XCOMP function. Interestingly, the marking of the XCOMP predicate is also affected, with a progressive aspect suffix rather than the *er+ken* suffixes. Like English gerunds, these are used to indicate simultaneity of activity. We can speculate that this difference indicates the absence of an event interpretation. The progressive aspect may indicate an ongoing state rather than an event.[17] The representation of this interpretation is given in (49).

(49) sem-str: $<$ dün $<_{\text{TNS}}$ *PAST* $<$**perceive′** (ben^a, John^b) &
be-of-opinion′ (ben^a,
$[<_{\text{ASP}}$ *PROG* $<$**gid′**(John^b)$>>]^c$) $>>>$

arg-str: PRED $\underline{\text{ARG}_1^a}$ ARG_2^b ARG_3^c

f-str:
$$\begin{bmatrix} \text{PRED} & \text{`görün} < \_\_\ , \ \_\_ > \text{'} \\ \text{AADJ} & \left[\text{PRED} \quad \text{`ban-a'}^a\right] \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \left[\text{PRED} \quad \text{`John'}^b\right] \\ \text{XCOMP} & \begin{bmatrix} \text{SUBJ} & b \\ \text{PRED} & \text{`gid} < \_\_ > \text{'} \\ \text{ASP} & \text{PROG} \\ \text{GF}_{\text{LOC}} & \text{`is'} \end{bmatrix}^c \end{bmatrix}$$

The second interpretation, in which, the perceiver perceives a proposition, without directly perceiving *John* would have a representation of the type in (42).

[17] We will not digress to explore the syntax of Turkish in this area.

3.5.4 Compound Verbs in Dagaare

Dagaare is a Gur language spoken in Northern Ghana.[18] It uses a light verb *e* 'do' in conjunction with *nyɛ* 'see' to relate the physical and epistemic meanings of 'see'. *e nyɛ* 'do see' equates to 'seems' as the following examples illustrate:

(50) a ngmaanga e nyɛ o zeng la a trɛ zu
DET.DEF monkey do see 3SG. sit FOC DEF tree top
'The monkey seems to be sitting in the tree.'
(Lit. 'the monkey seem he sit ...')

(51) a e nyɛ n nang tur
EXPL do see 1SG be wrong
'It seems I am wrong.'

In (50) the NP *a ngmaanga* 'the monkey' is the logical subject of *zeng* 'sit', however given the presence of the free pronoun *o*, which may act as the subject of *zeng*, it would appear that the NP *a ngmaanga* is understood to be the subject of the compound predicate *e nyɛ* 'seems'. It is not clear how we can test whether this is a case of "raising" or extraction. In (51) there is an expletive subject *a* and hence we assume that the pronoun *n* is not raised.[19] What is apparent is that the compound verb construction has the effect of suppressing the logical external argument of *nyɛ* 'see' enabling either expletive, raised or extracted subjects to fill the matrix subject position.

3.5.5 Detransitivising Affixation in Japanese

Japanese also has a productively related pair of verbs, *miru* 'to see' and *mieru* 'to be visible, look (copulative), seem'.

(52) Kare wa nen ni wa mi-e-na-i
He TOP year to TOP see-PART-NEG-PRES
'He does not look his age.'

(53) Iku hitsuyoo wa na-i yoo ni mi-e-ru
Go-PRES necessary TOP NEG-PRES like to see-PART-PRES
'There seems [to be] no need to go/It looks like it is not necessary to go.'

(52) appears to have a structure in which an individual is perceived, given in (54), while (53) has a structure like (42) in which a proposition is perceived.

[18] I am grateful to Adams Bodomo for this data.

[19] Given that my primary concern is with the relationship between the physical and epistemic uses of 'see', it is beyond the scope of this work to propose diagnostics for raising vs. extraction phenomena in serializing languages.

(54) sem-str: **perceive′**($x^a_{speaker}$, kare^b) & **be-of-opinion′** ($x^a_{speaker}$, ¬ [<$_{TNS}$ *PRES* <**be′** (kare^b, [**nen ni′**])>>]^c)

arg-str: PRED $\underline{ARG1}^a$ $ARG2^b$ $ARG3^c$

f-str:

$$\begin{bmatrix} \text{PRED} & \text{`mieru} < \_\_ , \_\_ > \text{'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`kare'}^b \end{bmatrix} \\ \text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`nen ni} < \_\_ > \text{'} \\ \text{SUBJ} & b \\ \text{POL} & \text{NEG} \end{bmatrix}^c \end{bmatrix}$$

Latin, Turkish, Dagaare and Japanese are all examples of languages where a morphosyntactic process may be used with a perception verb to suppress a perceiver argument and to express a perceived proposition. When the information structure requirements of the utterance are such that the topic coincides with the subject of the embedded predicate, the proposition is effectively shared between two functions, matrix SUBJ and controlled XCOMP. In these cases, the matrix subject either equates to a perceived entity, or alternatively is "recruited" from the embedded proposition, in which case the subject is non-thematic. However, as we can see from the Dagaare example in (51), when the whole proposition is in focus, i.e. when there is no topic, an expletive subject is supplied. The subject may not then be shared but may remain in the embedded clause. In this case the perception verb will still have two functions, one of which is a non-thematic subject, an expletive, but the second will be a finite COMP expressing the whole focused proposition.

It may not be the case in fact that all languages can share the referential subject from an embedded clause with the matrix clause. These languages nonetheless are able to derive an epistemic reading from a perception predicate by the same mechanism. In this case, we must assume that predicate focus is not distinguished from sentence focus, or is achieved by some other means, such as intonation. These languages will use the expletive subject plus finite COMP option. One such language is Zulu.

3.5.6 Detransitivising Affixation in Zulu

Zulu has a neutral detransitivising suffix, *akala*, which suppresses an external argument. In examples (55) and (56) the propositional argument is expressed as an equivalent to a *that*-clause.

(55) wa bona ukuti uku baleka kakuko
he saw that to run away impossible
'He saw that to run away was impossible.'

(56) kwa bona**kala** ukuti indoda le ya i khathele
it seemed that the man PAST tired
'It seems that the man was tired.'

In (55) *bona* 'see' is extended to a cognitive domain, a judgment is made based presumably on visible evidence. In (56) the verb *bona* is affixed with the suffix *akala*. This has the effect of suppressing the external perceiver argument , in the same way as passive. The proposition remains as a *that*-clause and the subject function is filled by an expletive *kwa*. I follow Alsina (1996:72) in assuming that expletive subjects are not represented at the level of argument structure but are coindexed with an argument with propositional content. Thus all three conditions given in (45) are present for an epistemic reading of the perception predicate in (56). The representation of this is given in (57):

(57) sem-str: $<_{\text{TNS}}$ *PRES* $<$ **perceive′** ($\emptyset^a$, [$<_{\text{TNS}}$ *PAST* $<$**khatele′**(indoda)$>>$]^b) $>>$

arg-str: PRED $\underline{\text{ARG}_1^a}$ ARG_2^b

f-str:

$$\begin{bmatrix} \text{PRED} & \text{'bonakala} < \_\_ > \_\_ \text{'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ}_i & \text{'kwa'} \\ \text{COMP}_i & \begin{bmatrix} \text{PRED} & \text{'khatele} < \_\_ > \text{'} \\ \text{SUBJ} & [\text{PRED} \quad \text{'indoda'}] \\ \text{TNS} & \text{PAST} \end{bmatrix}^b \end{bmatrix}$$

3.5.7 Summary

What all the processes outlined in section 3.5.1 have in common is the suppression of the external argument, which has the semantic role of a COGNIZER/perceiver. The detransitivized perception verb has a propositional complement with its own internal predication. In some languages it appears to be the case that the proposition remains as a *that*-clause, with an expletive filling the subject position. Other languages, in addition to this option, may share the subject of the complement clause with the matrix subject function, either as a thematic argument (when it corresponds to a control construction) or non-thematic argument (when there is no such entity and it corresponds to a "raising" construction). Which of these options is chosen would appear to be determined by in-

formation structure requirements. When a referential NP is the topic of the sentence, it is more likely to occur as matrix subject.

So far we have seen how active morphosyntactic processes synchronically relate verbs of visual perception to epistemic "modals" when the conditions in (45) apply. One question that naturally arises is why it does not appear to be the case that all languages make use of this strategy. Why, for example, does modern Italian, not use the passive of *vedere* 'to see', *essere visto* 'to be seen' as a predicate meaning 'seem'. I have no immediate solution to this, however, in the next section we turn to our examination of diachronic data which will reveal that modern Romance does in fact use an alternative, but similarly motivated strategy, to derive an epistemic predicate from a predicate of perception.

3.6 Diachronic Reanalysis

We now examine the possible historic progression of a predicate with prototypical one-to-one mapping between semantic structure, argument structure and grammatical function structure to its synchronic status as an epistemic modality marker with no thematically selected subject. I postulate that gradual semantic shift is responsible for the dissociation between the semantics and the syntax leading to the current raising verb status.

The example I have in mind is the development from Latin to Romance of the verb *similare* 'to look like, be similar to' which is the etymon of *sembler* (French) and *sembrare* (Italian) 'to seem' (Dauzat et al. 1964).[20] The verb *similare* appears to have been a Vulgar Latin coining from Classical Latin *similis esse* 'to be like' and had a variety of forms including a deponent form *similari*.[21]

In the following section I attempt to trace the path of the development from *similare* to *sembler*.

3.6.1 Late Latin *similare* to French *sembler*

Similare 'to be similar to, to resemble, be like' appears to have been used as a two-place predicate, the two syntactic arguments being the two entities which are being compared, let us call them the STIMULUS (the entity whose appearance is being judged) and the COMPARISON (the entity which the STIMULUS is compared to). However, given that

[20]Phonologically, *sembler* may be derived from Classical Latin *simulare* 'to pretend' as it patterns along with *cumulare* > *combler*; *tremulare* > *trembler*. Indeed Buck (1949) claims that *simulare* is the etymon of *sembler*. However the meaning of *sembler* in Old French is more clearly associated with that of Late Latin *similare* and hence is a more plausible candidate as its etymon. I am grateful to an anonymous reviewer for this observation.

[21]The form *similare* is not apparently found in the classical Latin texts.

resemblance and similarity are matters of perception by an individual, I would argue that the semantic structure must contain a covert perceiver.

(58) Nec meus est nec mi similat sed vellem
Nor mine is nor me-DAT resemble-3s but wish-IMP-SUBJ-1s
esset meus (sc. filius)
be-IMP-SUBJ-3s mine
'He is neither mine nor looks like me but I might wish that he were (my son).'
Corpus inscriptionum Latinarum 4.1877

The sentence fragment *nec mi similat* in (58) [22] would have the structure in (59), which reflects the presence of the perceiver argument. However this is covert and does not have a mapping to a-structure. The two arguments at a-structure are the STIMULUS and the COMPARISON.

(59) sem-str: **have-physical-property′** (y^a) &
perceive′ ($x^b_{speaker}$, y^a) & **be-of-opinion′** ($x^b_{speaker}$, [$<_{TNS}$ *PRES* <**be′** (y^a, ¬**similar to′** (z^c))])
where y = 3rd m.s pro and z=x

arg-str: PRED ARG^a_1 ARG^c_2

f-str:
$$\begin{bmatrix} \text{PRED} & \text{'similare} < \_\_ , \_\_ > \text{'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{bmatrix}^a \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'mi'}^c \end{bmatrix} \\ \text{POL} & \text{NEG} \end{bmatrix}$$

The Late Latin use of *similare* in (58) with a nominal COMPARISON equates to the modern French construction *être semblable à* 'be similar to', 'look like'.

Old French uses the verb *sembler* with the meaning of 'look, have an appearance', but rather than likening the perceived entity to a nominal entity, a person or thing, a property of the appearance of the perceived object was likened to some property and was used (as it still is) with an adjectival or participial complement as the following examples illustrate. The structure for (60) would be as in (62).

[22] I have glossed the form *mi* as dative, being a development from *mihi*, however in Vulgar Latin this form came to be used as a general oblique, i.e. for all non-nominative forms, along with *me*. (Harris 1978:100)

(60) Urine que semble pudrus signefie la vessie blescee
Urine which seems dusty indicates the bladder damaged
'Urine which seems dusty indicates a damaged bladder.'
Mid 13th Century. Lettre d'Hippocrate

(61) D'où te vient cette robe étrange qui semble faite de
from where you come this dress strange which seems made of
ta chair?
your flesh
'Where did you get this strange dress which seems to be made of your flesh?'

(62) **have-physical-property′** (urine) & **perceive′** (∅, urine) & **be-of-opinion′** (∅, [**be′** (urine, **pudrus′**)])

There then appears to have been a further weakening or semantic bleaching, in which the requirement for there to be some directly perceivable concrete stimulus also disappears such that the basis for the judgment by the perceiver may be indirect or abstract. At the same time, the perception may not be of a property of the stimulus, but of some event in which the stimulus is participating. We thus begin to find an infinitival complement of *sembler*.

(63) Sa santé semble s' améliorer
his health seems refl improve.INF
'His health seems to be getting better.'

(64) Les faits semblaient parler d' eux-mêmes
the facts seemed speak.INF of themselves
'The facts seemed to speak for themselves.'

In neither of the above examples is the subject of *sembler* concrete entity. However, in (63) there is still the understanding that the subject contributes perceivable information upon which to form a judgment. We might represent (63) as in (65), where ∅ stands for an unspecified entity or activity.

(65) **perceive′** ($x_{speaker}$, ∅) & **be-of-opinion′** ($x_{speaker}$, [**improve′** (health)])

In (63) it is still the STIMULUS which fills the subject argument slot. However, it appears that two developments then are possible. In the first place, the need for the perceivable stimulus disappears and an abstract proposition may be the cause of the judgment. In such an environment the link between the stimulus and the subject argument is weakened to the extent that the subject of *sembler* loses its argument status, and becomes non-thematic in a similar fashion to the development of *videre*

to *videri* discussed above. This then gives rise to the structure in (64) where the matrix subject is shared with the subject of the complement clause, as in (42) above. As a consequence of the total delinking of the subject function from the stimulus, the subject function may be filled by an expletive in order to fulfill the subject condition.[23] The second argument slot is filled by the proposition.

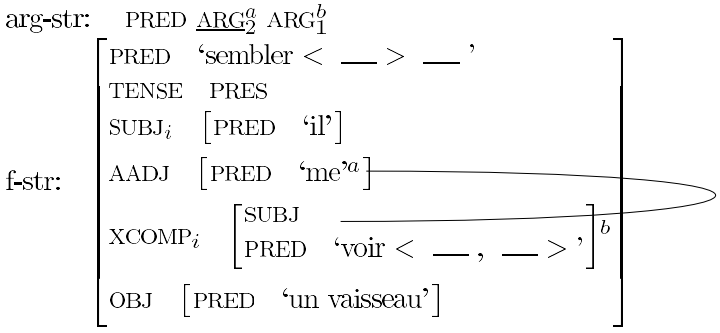
In the second place, an optional functional position, an argument adjunct, has developed for the previously covert perceiver argument. In other words the background information may be foregrounded. I have assumed that the perceiver argument in semantic structure maps onto an argument at a-structure, but that it is suppressed, though without the presence of overt morphology. The suppressed argument is realized as a dative-marked NP argument adjunct. This element is able to control the subject of the infinitival XCOMP.

Such a development, involving expletive subjects and the expression of the perceiver, is found in examples of French texts from the 17th century. The structure I propose for (66) is given in (68).

(66) Il me semble de voir un vaisseau.
It me seems to see a ship
'I think I see a ship.' (d'Urfé 1610)

(67) Il me semblait, dit la princesse palatine, sentir la
It to me seemed, said the princess palatine, to feel the
présence réelle de Jésus-Christ.
presence true of Jesus Christ.
'I seemed to feel...' (c. 1686 Boss. Anne de Gonz.)

(68) sem-str: **perceive′** ($x^{a}_{speaker}$, ∅) & **be-of-opinion′** ($x^{a}_{speaker}$, [**see′** ($x^{a}_{speaker}$, a ship)]^{b})



[23]French, not being a pro-drop language, requires an explicit expletive subject with *sembler* unlike its Italian equivalent *sembrare*.

As well as an infinitival clause to express the proposition, it appears that the occurrence of a finite *que*-clause, a finite COMP developed from this time, with or without the expression of the optional speaker/perceiver argument. Example (69) is from the 17th century, (70) from the 18th.

(69) Vous tournez les choses d'une manière qu'il semble que
you turn the things of a way that it seems that
vous avez raison.
you have right
'You turn things in such a way that it seems that you are right.'
(Molière, Don Juan)

(70) Il me semblait que, quand vous seriez revenues, je serais
it me seems that when you are returned I would be
bien trois ou quatre mois sans vous voir.
well three or four months without you see.INF
et sans en mouir
and without of.it die.INF
'It seemed to me that by the time you had come back I would have gone a good 3 or 4 months without seeing you and without dying of it.' (Voltaire Lettres 152)

3.6.2 Summary

In the previous section, I outlined a proposed development of Late Latin *similare* 'to look like' to Modern French epistemic *sembler* 'to seem' via Old French *sembler* 'to look, have an appearance'. My proposal is that there is a perceiver argument at some level of representation in all stages of the development. Over time the requirement for there to be some physically perceivable stimulus diminishes, and as it does so the link between the stimulus and the subject position becomes weakened. As this happens, the functional requirements of the predicate are met by an expletive subject and an XCOMP or COMP. This has clear parallels with the structure examined in (57). Alternatively, where there is still some suggestion that the stimulus, albeit in some abstract or indirect fashion, contributes to the perception, then a control-type construction as seen in (63) remains available. This has clear parallels with the Japanese structure examined in (54).

3.7 Conclusion

In this paper I have been concerned with trying to offer an account of the provenance of one class of subject-to-subject raising verbs, those which have a basis in the visual sensory modality. In order to do this I have

examined both synchronic and diachronic processes which I believe can shed some light on the issues.

The diachronic analysis reveals that semantic shifts can lead to a change in syntactic structures. A lexical entry provides information about a predicate at all parallel levels simultaneously. If, through redundancy an argument is suppressed at the level of argument structure, such as the redundancy of the perceiver argument in the development of *videri*, then it may only be expressed in the syntax by an a-adjunct. Semantic bleaching however is not a sudden process but a gradual one. We have seen that in many instances it remains the case that the subject of the equivalent of *seems* is some kind of stimulus providing visual information to the perceiver and hence the structure might be appropriately analyzed as a "control" construction. In other cases, however, the subject appears simply to be fulfilling syntactic and information structure requirements and is non-thematic and hence the structure is that of a "raising" construction. Such verbs thus illustrate why we cannot always talk of a clear-cut distinction between "control" and "raising" structures and easily assign predicates to one or other class.

In the data analyzed from a synchronic perspective, the link between epistemic modals and verbs of physical perception is still clearly recoverable from the form. The perceiver argument is present at semantic structure. Over time, however, semantic bleaching may result in the loss of an element of the semantic structure. In this case the link with the argument will be lost, and the meaning will cease to be recoverable. Then true semantic shift has taken place. Meanwhile, the functional requirements of the language with respect to things like the Subject Condition must still be respected. The suppression of arguments, via productive processes like passivisation, or historic processes, like redundancy, will result in a mismatch of accessible argument slots to available functional slots. This is why the syntax is affected by meaning shifts. A nominal that is not the thematic subject of a predicate may find itself fulfilling the subject function if the information structure so requires.

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4

A Reexamination of the Accusative to Ergative Shift in Indo-Aryan

Miriam Butt

4.1 Introduction

Only a few language change phenonema are taken to represent a fundamental (and perhaps even cataclysmic) change in the syntax of a language.[1] One textbook example is the switch from an ancestral SOV word order to an SVO word order in English (Lightfoot 1991). Another example is a shift in case system, e.g., ergative to accusative or vice versa. This paper examines the prime example cited for a shift from an accusative to an ergative system (e.g., Dixon 1994, Garrett 1990, Harris and Campbell

[1]Versions of this paper have been presented at various places. In each case, the audiences were extremely helpful in providing feedback. I would therefore like to thank the members of the audiences at: the colloquium at the University of Illinois, Urbana-Champaign (February 2000), the Workshop on Case in Marburg (March 2000); the colloquium at Delhi University (March 2000); the LFG conference in Berkeley (July 2000); the Graduiertenkollegskolloquium in Stuttgart (November 2000). The members of the SFB 471 at Konstanz listened to the very first version of this paper and I would like to thank them for their patience. The writing of this paper was supported by the DFG (Deutsche Forschungsgesellschaft) via the SFB (Sonderforschungsbereich) 471 at the University of Konstanz. Individuals whom I would like to thank for particularly detailed feedback are Julia Barron, Alice Davison, Ashwini Deo, Hans Hock, Tracy Holloway King, Aditi Lahiri, Frans Plank, Devyani Sharma, Prem Singh, and K.V. Subbarao. Among these, Tracy Holloway King and Aditi Lahiri deserve very special thanks, as many of the ideas and results in this paper came directly out of discussions and collaborations with them. Finally, I would like to thank Reeta Bhattacharya, Ashwini Deo, Chiara Frigeni and Karin Schunk, for their help and discussions of the finer points of Sanskrit. Any errors in the interpretation of the historical data are due to my own shortcomings.

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

1995, Plank 1979b) namely the Indo-Aryan branch. This paper undertakes a reexamination of the purported development of a split-ergative system in Urdu/Hindi[2] from an accusative system in Sanskrit.

The shift from an accusative to an ergative system is generally taken to be connected to a passive structure that is reinterpreted as active (Plank 1979b, Dixon 1994, Johns 2000).[3] In this process of reanalysis, the former instrumental adjunct is granted the status of an ergative subject. The passive morphology, furthermore, is reinterpreted as a perfect participle. This shift is assumed to account for the crosslinguistically frequent pattern in which the ergative case is restricted to appearing with perfective aspect (or past tense). While this story is elegantly simple and (therefore) widely accepted, a closer look at the historical facts for the development of the ergative in Hindi/Urdu reveals that some of the essential ingredients cannot be substantiated.

Several papers have recurrently pointed out problems with the hypothesis of a case sytem shift for Indo-Aryan. This paper collects the various problems into a coherent package while adding further findings. Having made the case that the essential ingredients of the accusative to ergative shift via a passive construction cannot be substantiated for Urdu/Hindi, the paper goes on to argue that no shift from an accusative case system to an ergative one ever took place. This idea is not completely new. Hock (1986), for example, argues that Sanskrit displayed much the same patterns of ergativity as Hindi/Urdu displays today and that therefore no shift took place: both languages had ergative patterns.

This paper does not quite take up Hock's position, but instead proposes that Old Indo-Aryan (e.g., Sanskrit), Middle Indo-Aryan (e.g. Pāli), and the modern descendants all used (and continue to use) a complex system of case marking that includes non-nominative marking on subjects and case alternations to express consistent semantic differences.[4] The form of the case markers has changed over the ages and the distribution of individual case markers has undergone a slight shift.

[2]The South Asian languages Urdu and Hindi are closely related. Both are among the 16 official languages of India and are spoken primarily in the north of India. Urdu is the official language of Pakistan. The data presented in this paper are drawn primarily from the dialect of Urdu spoken in Lahore, Pakistan, as well as from examples cited in the literature on both Urdu and Hindi.

[3]Not all ergative languages are necessarily seen as arising from a former passive. For example, possessive structures are implicated in some language families and Trask 1979 argues that stativity is the relevant factor in Indo-Aryan. However, the passive-to-ergative hypothesis appears to be the most generally accepted one with respect to discussions of Indo-Aryan.

[4]The Middle Indo-Aryan language Pāli is not a direct descendent of Classical Sanskrit, but of Middle Indo-Aryan dialects that were contemporaneous with Sanskrit (Sen 1973).

However, the basic organizing principle of case usage has remained the same: there was no shift in the underlying system of case.

The paper further argues that this state of affairs makes sense under an approach which is not tied to a binary structural distinction with respect to case (such as accusative vs. ergative) and presents an analysis of the historical and modern uses of case within the framework of Lexical-Functional Grammar (LFG). The analysis allows for a complex view of case marking in which the issue of ergativity in Hindi/Urdu can be examined in light of the entire case system of the language. This includes the use of dative and genitive subjects, and an opposition of marked vs. unmarked case on objects (Butt 1993). As such, it differs markedly from the family of analyses which focus only on a subpart of the case system of a language (i.e. ergative, accusative, and nominative), as is the case for many discussions of ergativity and its historical development.

4.2 Restricted Typologies of Case Systems

One method of classifying languages is to refer to the type of *case system* they employ.[5] Perhaps the most well-known opposition is that between an ergative-type language and an accusative-type language, though Plank (1995) lists 6 types: ergative, accusative, active, neutral, double-oblique, and tripartite. None of these types takes the whole range of case marking of a language into account, but instead focuses on a subset of cases (typically nominative, ergative, and accusative).

4.2.1 Ergative vs. Accusative

The ergative marker was first named as a special marker for subjects with reference to Caucausian languages such as Georgian (Dirr 1928). The same type of case marker had been noted for languages such as Basque and Greenlandic (Pott 1873), but was generally referred to as an "agentive nominative" in opposition to a "neutral nominative", i.e. what we call nominative or absolutive today.[6] The semantic parameter of "agentivity" that had been consistently noted by the linguists of the last century in connection with the ergative has been replaced by a purely structural division in this century.

The standard formulation of the conception of ergativity today goes back to works such as Silverstein (1976) and Dixon (1979), who used

[5]The type of classification that is now standard in modern linguistic theory goes back to proposals by Fillmore (1968).

[6]While the term "absolutive" has generally been used for the null or unmarked case in ergative systems and the term "nominative" for the unmarked case in accusative systems, it has recently been recognized that this division is not helpful (see T. Mohanan 1994, Woolford 1997, Johns 2000 for some discussion). The term "absolutive" is therefore sometimes abandoned in favor of the term "nominative".

the term for a special type of case marker in Australian languages which marks subjects of transitive sentences in opposition to objects and subjects of intransitive sentences. Plank (1979a:4) summarizes the basic idea as follows:

(1) a. A grammatical pattern or process shows ergative alignment if it identifies intransitive subjects (S_i) and transitive direct objects (dO) as opposed to transitive subjects (S_t).
b. It shows accusative alignment if it identifies S_i and S_t as opposed to dO.

According to this idea, languages can be grouped into two types, based on the case marking displayed by subjects and objects. This is illustrated by table (2). Urdu/Hindi is generally said to fall under the ergative type of language.

(2)

Clause Type	**Language Type**	
	Ergative	Accusative
Transitive	Ergative-Nominative	Nominative-Accusative
Intransitive	Nominative	Nominative

However, like many other languages, Urdu/Hindi displays a more complex system of case marking with respect to intransitives. Unaccusative subjects are unmarked (nominative) and the subjects of unergative intransitives can be ergative. Harris (1985), who observed a similar pattern for Georgian, proposed the use of the term *active* for such a case system. A classification following this distinction is shown in (3).

(3)

Clause Type	**Language Type**		
	Erg	Acc	Active
Transitive	Erg-Nom	Nom-Acc	Erg-Nom
Intransitive (Unaccusative)	Nom	Nom	Nom
Intransitive (Unergative)	Nom	Nom	Erg

4.2.2 Morphological Split Ergativity

There is a further complication that must be mentioned in any discussion of ergativity: the distinction between *syntactic* or deep ergativity and *morphological* or surface ergativity. Some languages, such as the Australian language Dyirbal (Dixon 1994) encode the pattern described in (1) purely structurally. However, most languages are morphologically ergative in that pieces of the morphology mark the pattern in (1). This morphological pattern may interact with a structurally "accusative" system in that syntactic phenomena like control and anaphora distinguish

transitive and intransitive subjects from objects, irrespective of the particular case marking of the subject. Urdu/Hindi belongs to this latter type of language.

Furthermore, most ergative languages are *split-ergative*. Urdu/Hindi patterns with these. As the examples in (4) show, the split in Urdu/Hindi is along tense/aspect lines. The ergative case marker *ne* is required by perfect verb morphology.[7] The association of ergativity with perfect morphology is well-established crosslinguistically and is one of the factors that has contributed to the idea that ergative structures arise out of passive constructions (see section 4.3).

(4) a. ram gari cɑla-ta (hɛ)
Ram.M.Sg.Nom car.F.Sg.Nom drive-Impf.M.Sg be.Pres.3.Sg
'Ram drives a car.'

b. ram=ne gari cɑla-yi (hɛ)
Ram.M.Sg=Erg car.F.Sg.Nom drive-Perf.F.Sg be.Pres.3.Sg
'Ram has driven a/the car.'

Another common split crosslinguistically is the so-called NP-split, whereby only a subset of the nominals display ergative morphology. Urdu/Hindi does not have this kind of a split.

4.2.3 Discussion

The typological division in (3) does not assume the binary view described in (1); however, other types of subjects and objects (i.e., genitive, dative or instrumental) are not accorded a place in the typology (unless they happen to be form-identical with the ergative). For example, it is not clear why this classification into types of case systems routinely ignores dative subjects.

One explanation could be that the dative has a more restricted distribution because it generally appears on easily identifiable verb classes, such as psych-predicates. The ergative, on the other hand, is only excluded from unaccusative verbs, a small subset of the verbs of a language. The dative can thus be relegated more easily to the "lexical" or stipulative domain, while the ergative is perceived as having a more general structural import.

One point made in this paper is that the case system in Indo-Aryan has always represented a situation in which structural conditions on case

[7]Note that the verb agrees with the nominative subject in (4a) and with the nominative object in (4b). The generalization for Urdu/Hindi is that the verb agrees with the highest nominative argument in the sentence (subject is higher than object). If there is no nominative argument, the verb defaults to masculine singular third person agreement. Verb agreement does not bear directly on the issues raised in this paper.

marking interact in a complex manner with semantic conditions on case marking.[8] As such, the ergative as well as the dative and accusative must be recognized as being determined structurally and semantically. Under this view, there is no deep syntactic division to be drawn between an ergative subject and a dative or an instrumental subject.

The paper further points out that focusing on only a part of a language's case system has the effect of working with blinders. That is, not taking cases such as the dative, genitive, or instrumental on subjects into account obscures what is really going on in a given language. In particular, it obscures the diachronic pattern: what may look like a shift from accusative to ergative from the restricted perspective in (3) may be a complex system of case marking that has remained relatively stable over the ages (despite the loss of the original surface case inflections).

4.3 Emergence of the Ergative—Indo-Aryan

The early (Western) linguistic literature on South Asian languages (18th–19th century) refers to the ergative as an *agentive* or *instrumental*.[9] Because the ergative in many languages has connotations of agency and shares features with the instrumental, the ergative construction was first analyzed as a passive in many languages (see Trask 1979:390 for discussion). However, this view soon became a minority view due to detailed language-specific work, which showed that more often than not, ergatives were subjects of active sentences.

4.3.1 Passive to Ergative

With respect to language change, the connection to a passive forms the basis for a hypothesis that ergative constructions arise from former passive constructions via a reanalysis of the type shown in (5).

(5) NPinstr NPnom $V_{participle}$ > NPerg NPnom V_{active}
(adapted from Garrett (1990:265))

The precise morphology involved on the verb was a *-ta* participle in Sanskrit which has been lost or retained as a glide or an *-e* in most of the modern Indo-Aryan languages. The Sanskrit *-ta* participle finds its

[8] The case marking on the object (accusative vs. nominative) in Urdu/Hindi is orthogonal to this typology because the appearance of the accusative is tied to specificity (Butt 1993) in a manner very similar to that in Turkish (Enç 1991), even though Turkish does not have an ergative case.

[9] The term "ergative" was first used for a type of locative/comitative case in the Eastern Torres Straits language Meriam Mir (Ray and Haddon 1873). This language also had what we would today consider an ergative, but which Ray and Haddon (1873) referred to as a "nominative of the agent". The transfer in terminology appears to be based on a mistake by Pater Schmidt (1902:88), who attributed the term "ergative" to the agentive nominative in Meriam Mir . See Manaster Ramer (1994) for details.

origin in the Proto Indo-European deverbal adjective in *-*to*. In Sanskrit, the -*ta* formed a deverbal adjectival participle which agreed with a noun. This participle had passive interpretation with transitive verbs but active interpretation with intransitives and verbs of motion (Garrett (1990:263), Speijer (1886:280)). The active interpretation and the ability of the participle to denote inceptives (see section 4.5) appears to be ignored in the proposals that see the emergence of the ergative as tied to the reanalysis of a passive construction: these analyses exclusively focus on the passive denotation of the -*ta* participle (Pray 1976, Anderson 1977, Pirejko 1979, Bubenik 1989).

In terms of the discussion here, it is significant that the passive-to-ergative hypothesis remains the dominant proposal for the development of ergativity in modern Indo-Aryan languages in that this proposal has become accepted as common wisdom, despite several dissenting voices (e.g., Beames 1872, Kellogg 1893, Klaiman 1978, Zakharyin 1979, Andersen 1986, Hock 1986). Consider, for example, the quote from Dixon (1994), where this hypothesis is presented as textbook knowledge (also see Harris and Campbell (1995:263)).

> We might thus expect a split ergative system conditioned by aspect or tense, where the ergative is found in perfect aspect or past tense, to be likely to have a passive origin.
> This is precisely what happened in the Indic and Iranian branches of Indo-European (for which we do have written records and can be fairly certain about what happened, although different scholars have suggested diverse interpretations). [Dixon 1994:190]

The dissenting voices mentioned by Dixon range from an argument that Sanskrit as well as modern Hindi were basically "patient-oriented" and thus should both be considered ergative (Hock 1986) to the observation that stativity may be the relevant factor (Trask 1979:397) in that a deverbal stative predicate is made active via an integration into the inflectional paradigm of the language (see Deo 2001 for a case study of Marathi). This paper is sympathetic to these views, but follows neither completely.

4.3.2 The Ancestry of the Modern Urdu/Hindi Ergative *ne*

Both the proponents of the passive-to-ergative view and the dissenters assume that the modern Urdu/Hindi ergative *ne* is a direct descendant of the original Sanskrit inflectional instrumental -*ina* (and allomorphs thereof). Among the researchers of this century, Zakharyin (1979) is an exception: he ascribes the ergative form *ne* to language contact with

Tibeto-Burman, which uses an ergative form *na*. However, this hypothesis does not explain why Nepali, a language which is geographically very close to the Tibeto-Burman languages, employs *le* as an ergative marker (Devyani Sharma, p.c., August 2000).

Interestingly, researchers of the last century such as Beames (1872–79) and Kellog (1893), are very clear on the fact that the modern Urdu/Hindi *ne* could not possibly be a descendent of the Sanskrit instrumental *-ina* (section 4.4).

4.3.3 Summary

There are thus two main ingredients of the dominant hypothesis of the emergence of ergativity in Indo-Aryan:

1. Reanalysis of a formerly passive structure:
   NPinstr NPnom $V_{participle}$ > NPerg NPnom V_{active}
2. Reinterpretation of the instrumental as the ergative:
   Sanskrit instrumental *-ina* > Urdu/Hindi *ne*

The next section takes a closer look at these ingredients by first examining the issues surrounding the ancestry of the modern Urdu/Hindi ergative marker *ne* and then moving on to a discussion of the uses of the Sanskrit deverbal *-ta* participle. As part of the historical discussion, an alternative scenario is developed that is then connected with a synchronic account of case alternations in modern Urdu/Hindi (section 4.6). Section 4.7 points out similarities across the ages in terms of the lexical semantic properties of verbs and the use of case alternations to encode semantic differences. Finally, section 4.8 proposes a unified analysis of the diachronic and synchronic data with respect to case alternations. Under this view, both Sanskrit and Urdu/Hindi show evidence for an interaction between verbal lexical semantics and the semantic and structural requirements of individual case markers. Both Sanskrit and modern Urdu/Hindi employ a complex system of case marking that includes non-nominative marking on subjects. In particular, the emergence of the ergative *ne* continues a system in which case alternations express semantic alternations.

4.4 The Historical Data—Case

Several grammarians of the last century undertook detailed investigations into the development of phonological and morphological change in the Indo-Aryan context. Among these, Beames (1872–79) and Kellog (1893) considered the idea that the modern Urdu/Hindi ergative *ne* is a descendent of the Sanskrit inflectional instrumental *-ina* to be an old hat which should have been discarded long ago.

> *a.* Against the old theory of the connection of this *ne* with the Sk. instr. affix, *ina*, stand the following facts. First, unlike that, it is but loosely connected with the noun, in which respect, however, it evidently resembles the other postpositions, as *men, par*, etc., which are known to have been originally separate words. ... Thirdly, its very late appearance is against such an origin; it cannot be traced back further than two or three hundred years. Lastly, in older authors, where the subject is a pronoun, and the construction in modern High Hindi would require the case of the agent with *ne*, they often use simply the obl. form of the pronoun, thus showing that the already distinctive termination of this case had been lost. ... [Kellog 1893:130–132]

In light of this quote, it is surprising that the *-ina* to *ne* assumption forms the basis of current discussions on the emergence of the ergative (with the exception of Zakharyin 1979). This assumption is common to both the proponents and the opponents of the passive-to-ergative hypothesis.

Kellog lists three main problems with the hypothesis that the ergative *ne* is descended from the Sanskrit *-ina*: erosion, timing, and usage. These are discussed in the following sections after examining the forms of the Sanskrit instrumental.

4.4.1 The Sanskrit Instrumental

Table (6) illustrates the differing possible instrumental inflections for the Sanskrit noun classes. As can be seen, the allomorphs *-ina/-ena* were not the only instrumental inflections. It is thus not clear why these particular allomorphs should have given rise to the modern ergative form, but not the others (e.g., the plural *bhiḥ/iḥ*).

(6)

Sanskrit Noun Class Stems	**Form of the Instrumental**	
	Singular	Plural
a/ā, i, u	-ina/(-ena)/-nā	
a/ā		-iḥ
i, u		-bhiḥ
ī, ū, ṛ, in, an, ant/at, consonants	-ā	-bhiḥ

It could be argued that *-ina/-ena* were more wide spread because they appeared with a noun class which was very common (the a/ā class) and that therefore it was this form of the instrumental that spread as

paradigms were leveled and case endings were lost. However, several other factors mitigate against this scenario.

4.4.2 The Problem of Erosion

The highly inflected case system of Sanskrit underwent a general collapse over the ages and the case endings eroded and fell together. According to Sen (1973:68), the instrumental *-ina/-ena* eroded to *ẽ* by Middle Indo-Aryan and fell together with what was left of the dative into *-e*. It is generally agreed (e.g., Sen 1973, Beames 1872–79, Kellog 1893) that this *ẽ/e* furnished the current oblique marker of Urdu/Hindi. The oblique marker occurs on nouns ending with *a* in non-nominative cases (i.e. *kutta* 'dog', *kutte=ko* 'dog=Dat/Acc'). Thus, a descendent of *-ina* occurs in modern Urdu/Hindi, but not as an ergative case.[10]

The modern Urdu/Hindi *ne* is often described as a postposition (e.g., Davison 2000, Mahajan 1990). I follow T. Mohanan (1994) in treating it as a clitic (see Butt and King 1999 for detailed discussion). Furthermore, Kellog also points out that in synchronic terms the ergative *ne* behaves much like other postpositions (or clitics) which are known to have developed from nouns, e.g., *mẽ* 'in' and *par* 'on'. The synchronic and diachronic data therefore point to a relatively normal path of development: the instrumental *-ina* eroded away to an oblique marker and the ergative *ne* came into the language as a grammaticalized form of a noun. On the other hand, the commonly assumed development of the inflectional morpheme *-ina* into a clitic (or postposition) *ne* would involve an unusual form of historical development.

4.4.3 The Problem of Timing and Usage

Another problem with the *-ina* to *ne* hypothesis is the relatively late appearance of the ergative in Old Hindi. The time line below (based on Sen 1973:8) gives a rough overview of the time-spans and languages involved in a diachronic consideration of Indo-Aryan.

(7) A. Old Indo-Aryan (Vedic and Sanskrit, where Vedic is older): 1200 BCE—600 BCE
B. Middle Indo-Aryan (Aśokan inscriptions, Pāli, Prakrits, Apabhraṃśa—Avahaṭṭha): 600 BCE—1000 CE
C. New Indo-Aryan (Bengali, Hindi, Marathi and other modern North Indian languages): 1000 CE—Present

Beames (1872–79:267–271) surveys Old Hindi writers including Chand, Kabir, Tulsī Dās, and Behari Lal and finds that he can only trace the

[10]Note that this *-e* does function as an ergative in Assames and Gujarati where it is an inflectional morpheme.

ergative *ne* back 200–300 years (1600–1700). The writers he surveyed tend to use the oblique form *-e* (the old instrumental) of nouns/pronouns in constructions that today would be termed "ergative".[11] The question then arises, if an "ergative" pattern based on the old instrumental was already in place, why then introduce a new marker into the language?

Beames (1872–79:270) traces the modern ergative *ne* to a dative form *nẽ* that was used in a dialect of Hindi spoken in provinces adjacent to the Moghul court during the reign of the Moghul Emperor Shah Jehan (1627–1658). Beames observes that during this time period a change in administrative policies led to an influx of Hindu administrators, who might have influenced the language of the court.

Beames does not say which dialect the dative *ne* was borrowed from. The Moghul court was mobile and rotated from city to city. The main cities involved were Agra and Lahore, and then also Delhi from Shah Jehan's time onward. Dialects of Hindi were spoken around Delhi and Agra, while Punjabi was the language of choice in Lahore.

Table (8) shows the current distribution of ergative and dative case forms in some of the modern Indo-Aryan languages. There are basically four forms which distribute across dative and ergative uses: *k-*, *l-*, *n-* and a vestige of the old inflectional case.

(8)

	Dative (subjects and objects)	**Ergative** (subjects only)
Hindi/Urdu	ko	ne
Punjabi	nũ	ne
Sindhi	kʰe	OBLIQUE INFLECTION
Gujarati	nẽ	-e
Marathi	lā	ne/ni
Bengali	ke	NONE
Oṛiya	ku	NONE
Assamese	ko/no	-e
Nepali	lāī	le

The table in (8) indicates a fluidity in case marking: one language's dative (Gujarati) is another language's ergative (Hindi), and vice versa.

[11] Ashwini Deo (p.c., May 2000) brought to my attention the intriguing information that the Delhi poet Amir Khusro (1253–1325) appears to have used the form *ne* in his writings. However, the examples that I have surveyed so far show an inconsistent usage in case and pronoun forms, so that no clear "ergative" pattern is apparent. This may be due to the dialectal variant Khusro employed, or to alterations in the texts that occurred as part of their transmission. A close examination of the original texts (if available at all) needs to be undertaken.

In some languages, the case markers for the ergative and dative are remarkably similar in form. Thus, while Beames' hypothesis may not be correct in the details, the distribution of case forms across the modern Indo-Aryan languages indicates a fluidity between dative and ergative case functions: a fluidity that could translate into borrowing through language contact.

For the purposes of this paper, I assume that Beames' scenario is essentially correct for Urdu/Hindi: a case form that gave rise to the ergative was adopted into High-Hindi either from a dialect of Hindi or from another related language. In particular, I see *ne* as being introduced as a non-nominative subject case marker which supplemented a system in which case alternations on subjects and objects made semantic distinctions (see section 4.6).

4.4.4 Possible Alternative Origins of the Ergative

The above discussion has not yet broached the question of what an alternative ancestral form of *ne* might be. A hypothesis advanced by Beames and Kellog is that *ne* is related to the participial *lagi* 'be attached to', which could be used "with a very wide range of meanings, and with great laxity of application" (Beames 1872–79:264). This ancestor is posited to account for the *ne* case markers and *le/lāī* dative/ergative case markers in related languages.[12] However, the morphophonological progression from *lagi* to *ne* is not clearly discussed in either Beames or Kellog.

An alternative hypothesis, due to Aditi Lahiri (p.c., December 1999), which is currently being investigated and which remains to be substantiated, is that the *ne* is a reduced form of the Sanskrit locative *janyē* 'for the sake of, because of, caused by'. This form gave rise to the Bengali postposition *jonno* (Chatterji 1926:769), which has several odd synchronic properties that remain to be explained. The hypothesis to be pursued is that this form developed from noun to postposition to case clitic and that its original semantics could have given rise to both ergative and dative case markers. This would also account for the similarity of forms between dative and ergative in the Indo-Aryan language area.

4.5 The *-ta* Participle

I now consider the participle implicated in the rise of ergativity. Recall that today's ergative construction in Urdu/Hindi is related to the deverbal adjectival participle in *-ta* (e.g., Garrett 1990, Chatterji 1926,

[12]The dative/accusative *k-* form (*ko* in Urdu/Hindi) comes from a noun meaning 'side' or 'armpit' (Beames 1872–79, Kellog 1893).

Beames 1872–79:133, Hock 1986). Compare the Urdu sentence in (9) with the Sanskrit one in (10).

(9) ram=ne bɪstrẽ bɑna-ye hɛ̃
Ram=Erg bed.M.Pl.Nom make-Perf.M.Pl be.Pres.3.Pl
'Ram has made some beds.'

(10) devadattena kaṭaḥ/kaṭāḥ kṛtaḥ/kṛtāḥ
Devadatta.Inst.Sg mat.Nom do.Part.Sg.Nom/do.Part.Pl.Nom
'By Devadatta a mat/mats has/have been made.'
(adapted from Hock 1986:16 and Speijer 1886:3)

In the Sanskrit example the deverbal participle agrees with the nominative argument: the corresponding Urdu clause shows object agreement with the nominative argument. Thus, the agreement between the past participle and the patient is reflected in Urdu/Hindi today in terms of object agreement. However, as the participle has been integrated into the verbal paradigm of the language, agreeement is according to number, person and gender, and no longer includes case agreement.

The participial morpheme *-ta* has survived in the form of a glide (*-y-*) which only surfaces when the stem ends in a vowel, as in (9). The historical development is traditionally described as in (11).

(11) **From Participle to Perfect**
Sanskrit *ta* and *ita* >
Middle Indo-Aryan *(d)a* and *(d)ia* >
Urdu/Hindi *-y-* in verbs ending with a vowel
(Chatterji 1926, Beames 1872:132–133, Kellog 1893:339)

The *-ta* affix had the morphophonological forms *-ta/-ita* in Sanskrit. The *i*-form was used more frequently in the Prakrit dialects. The *-t* was either voiced or lost altogether. Beg (1988) has found *-ya* attested in an Old Urdu text and *-iya* attested in Middle Urdu.[13]

4.5.1 Possible Interpretations of *-ta*

The *-ta* participle is "passive" only in that it denotes a deverbal state. Speijer (1886) notes that intransitives as well as some transitives may have an active interpretation.

> Of the participles in *ta* the great majority have a passive meaning, hence it is customary to call the whole class the passive participle of the past. But some others are not pas-

[13]As can be seen in (9), the modern form inflects for gender and number. This is apparently due to a (nominalizing) affix *ā* that inflected for number and gender (Chatterji 1926). The origin and precise function of this affix is unsatisfactorily shrouded in mystery.

> sive, but intransitives, as *jata* (gone), *mṛta* (died) ... Some again may even be transitive actives, as *pīta* (having drunk) ... [Speijer 1886:280]

Speijer (1886:255,294) further notes that the participle could already be used as a past tense form in Sanskrit. Thus the sentence in (12) could either be translated as a passive (reading 1), or as an active (reading 2) depending on the context.

(12) evam-uk-tā tu haṃsena damayantī
so-say-Part.Nom.Sg then goose.Inst.Sg Damayanti.Nom.Sg.F
1. 'Then Damayanti was spoken to like that by the goose.'
2. 'Then the goose spoke to Damayanti thus.'
(Nalopākhyāna I,30)

A possible scenario within the passive-to-ergative reanalysis hypothesis could be that the possibilities for active interpretation gave rise to a more general reanalysis of the "passive" deverbal adjectival form as an active verbal form. However, this scenario leaves several questions unanswered. For one, a passive morpheme which was part of the inflectional verbal paradigm did exist in Sanskrit. For another, there were several other participles which gave rise to an instrumental-nominative pattern. It is not clear why these alternative verb forms should not have resulted in an ergative pattern as well as the *-ta* form.

Another problematic issue for the passive-to-ergative scenario is raised by the existence of inceptive readings for the *-ta* participle. These appear to have been generally possible (see rule (14a) below). An example is shown in (13).

(13) pra-kṛ-taḥ kaṭaṃ devadattaḥ
for-do-Part.Nom.Sg mat.Acc.Sg Devadatta.Nom.Sg
'Devadatta began to make a mat.' (based on Katre 1987:341)

Indeed, when looking at the rules in the first documented grammar of Sanskrit, namely Pāṇini's Aṣṭādhyāyī (Böhtlingk 1839, Katre 1987), it is clear that a characterization of the *-ta* participle is not a simple task.

(14) a. **Rule 3,4,71:** inceptives require a nominative (instead of an instrumental)
b. **Rule 3,4,72:** verbs of motion (not necessarily intransitive), intransitives in general, and the verbs "embrace, lie, remain, sit, reside, be born, climb, age" require a nominative.
c. **Rule 3,4,76:** when *-ta* is combined with a root meaning 'remain', 'go' or 'ingest', then it denotes the locus of the action (e.g., yātaṃ 'here they went', bhuktaṃ 'here they ate').

In particular, Rules 3,4,72 and 3,4,76 show that the conditioning factor for the interpretation of the participle and the case assignment lies in the lexical semantics of the particular verbs or verb classes involved.[14] Example (15) illustrates the effect of Rule 3,4,72.

(15) nalaḥ ... vane āste
Nala.Nom.Sg forest.Loc.Sg sit.3.Sg.Ind.Pres
raho gataḥ
loneliness.Acc.Sg go.Part.Nom.Sg
'Having gone into loneliness, Nala sits in the forest.'
(Nalopākhyāna I,17)

This rather complicated situation with respect to the usage of the *-ta* participle has not been taken into account by the proponents of the passive-to-ergative hypothesis.

4.5.2 The Passive in *-ya-*

Example (16) shows an example of the Sanskrit passive in *-ya-*. This passive was an integral part of the language.

(16) devadattena kaṭaḥ kri-ya-te/kri-ya-nte
Devadatta.Inst.Sg mat.Nom do-Pass-3.Sg/do-Pass-3.Pl
'By Devadatta a mat/mats is/are made.'
(adapted from Hock 1986:16)

Given the idea that the rise of ergativity is tied to a reanalysis of the passive, why did the Sanskrit *-ya-* passive not give rise to the ergative pattern? One answer to this question may possibly be found in the frequency of the appearance of the instrumental agent. Like Urdu/Hindi, Sanskrit was able to freely drop arguments. A comparison of the instrumental agents occuring with the deverbal adjectival *-ta* participle and the passive *-ya-* shows that for both Sanskrit (Gonda 1951:22) and the later Pāli (Peterson 1998), instrumental agents in passives were rarely expressed. With the deverbal participle *-ta* construction, on the other hand, the instrumental agent is almost always overtly expressed.

One possible account for the difference in the synchronic patterns of Sanskrit and Pāli could involve a difference in grammatical function: while the instrumental agent in the passive was an adjunct, the instrumental agent in the participial construction may have been an oblique, and therefore more likely to appear overtly. Pending a better understanding of the role of grammatical relations in Sanskrit syntax, this hypothesis is only speculative.

[14] Rules 3,4,71 and 3,4,72 legislate against an instrumental agent, while Rule 3,4,76 assumes one on the basis of other default rules.

4.5.3 The Gerundive

A further factor to consider is the existence of other Sanskrit constructions which displayed the argument pattern instrumental-nominative. One such construction is the gerundive. The gerundive has the modal meaning 'should' or 'ought to' and furnished the modern Bengali and Assamese inflectional future (Chatterji 1926).

(17) samprati gan-tavyā puri vārāṇasī mayā
now go-Gerund city.Nom.F.Sg Benares.Nom.F.Sg I.Inst
'Now I want to go to the city of Benares.'
(from Speijer 1886§41)

Although the modern tense/aspect system of Bengali makes use of descendents of both this gerundive *tavyā* participle and the deverbal *-ta* participle, Bengali shows no signs of ergativity. The closely related language Assamese, on the other hand, shows an active pattern with no tense/aspect splits: unaccusative subjects are nominative, while subjects of transitives and unergatives are marked with an *-e* (Devi 1986). This *-e* can be traced back to the Sanskrit instrumental *-ina* (Chatterji 1926).

In light of these facts, several questions arise. What prompted Assamese to extend the ergative/instrumental *-e* into all the tenses, even ones which did not descend from participles that showed an instrumental-nominative pattern? Why did the *-e* not erode away, as it did in Bengali? Or, conversely, why did Bengali see no need to keep an ergative pattern?

To my mind, these questions, plus others as to the precise nature and development of ergative patterns in related Indo-Aryan languages such as Marathi, Gujarati, or Punjabi must be examined in much more detail than has been the case to date. Without a detailed comparison of several of the modern Indo-Aryan languages, no clear picture of the rise of ergativity in Indo-Aryan can arise. Such a detailed comparison is beyond the scope of this paper, but I nevertheless offer a viable alternative hypothesis that can be used as a guide for further research into this question.

4.5.4 Summary

The hypothesis that instrumental *-ina* was the direct ancestor of the ergative *ne* has been shown to be questionable. As such, no satisfactory account of the origin of the ergative *ne* in Urdu/Hindi exists to date. As discussed above, an alternative hypothesis is that the ergative is a calque from a dative form that was used either in a dialect of Hindi or in a neighboring related language. While much needs to be investigated with regard to the suggestion put forward by Beames (1872–79), the close

morphological connection between dative and ergative case in some of the Indo-Aryan languages is certainly suggestive. Furthermore, the next section shows that Urdu/Hindi displays ergative/dative alternations on subjects as part of a complex system of case marking that involves several other types of non-nominative subjects. This again suggests a fluidity of usage with respect to the dative and the ergative.

In section 4.7, I return to the hypothesis that there was no shift from an accusative to an ergative case marking system per se. Rather, the ergative case is a continuation of the Indo-Aryan use of case alternations on both subjects and objects to indicate different syntactic and semantic properties. In particular, the lexical semantics of verbs has been quite stable over the ages in the sense that the case marking patterns of individual verbs have not changed drastically. This is surprising from the point of view that the entire *case system* of the language shifted: if the language is employing a different case alignment, then the case marking properties of verbal classes should have been visibly affected. However, this is not the case.

The alternative hypothesis put forward here is that Urdu/Hindi represents a continuation of a system of case marking which employed a rich variety of non-nominative subject marking, but whose structural alignment is underlyingly accusative: subjects group together vs. objects with respect to a number of syntactic properties (see Pandharipande and Kachru 1977 and T. Mohanan 1994).

4.6 Modern Case Alternations

Modern Urdu/Hindi employs the case markers shown below. On nouns the case markers are clitics or null (T. Mohanan 1994, Butt and King 1999). Only some pronouns still show inflectional case marking. The only case marker which itself carries inflection (for number and gender) is the genitive (see Payne 1995).

(18)

Case	Urdu Clitic	Inflection
nominative		∅
ergative	ne	
dative/accusative	ko	-e (pronouns only)
instrumental	se	
genitive	k-	
locative	mẽ 'in'	
	par 'on'	
	tak 'toward, upto'	∅ 'to, toward'

T. Mohanan (1994) exhaustively and carefully shows that all of these case markers may appear on subjects in Urdu/Hindi. Examples of usages and discussion can be found in T. Mohanan (1994) and Butt and King (1999) and will not be repeated here. The point here is simply that subject marking is not restricted to nominative, ergative, or even dative and that in order to get the typological nature of the case marking system of a language right, the full set of case marking possibilities must be taken into account.

In particular, languages may employ a range of systematic case alternations to make semantic distinctions. The following sections go through some synchronic case alternations on subjects with nominative, ergative, dative, and instrumental case in Urdu/Hindi. Section 4.7 compares these to some of the systematic case alternations found in Sanskrit and argues that the underlying *system* governing these alternations has not changed substantially over the millenia, though the form and distributional pattern of individual case markers may have changed.

4.6.1 Ergative/Nominative Alternations

Recall that Urdu/Hindi is a split-ergative language which is sensitive to tense/aspect morphology. As discussed in section 4.2.1, Urdu/Hindi can also be thought of as an *active* type language in that the language distinguishes between unaccusative vs. unergative verbs with respect to ergative case marking. Unaccusatives such as 'go' in (19) never take an ergative subject, while the appearance of the ergative on subjects of unergative intransitive verbs as in (20) is optional and is correlated with volitionality (Butt and King 1991, Tuite, Agha and Graczyk 1991, Bashir 1999).

(19) ram/*ram=ne gɛ-ya
Ram.M.Nom/Ram.M=Erg go-Perf.M.Sg
'Ram went.'

(20) a. ram k^hãs-a
Ram.M.Nom cough-Perf.M.Sg
'Ram coughed.' (Tuite, Agha and Graczyk 1985:264)

b. ram=ne k^hãs-a
Ram.M=Erg cough-Perf.M.Sg
'Ram coughed (purposefully).'
(Tuite, Agha and Graczyk 1985:264)

Unergatives systematically allow this case alternation. The correlation of the ergative with volitionality is also found with dative/ergative alternations on subjects (also see Woolford (1997) for a rough correlation between ergative case and volitionality).

4.6.2 Ergative/Dative Alternations

The dative *ko* in Urdu/Hindi is form-identical with accusative. While some authors treat *ko* as a single (dative) case (e.g., Mahajan 1990, Davison 1999), there is a difference in usage. The accusative *ko* alternates on direct objects with the unmarked nominative and gives rise to specificity effects (Butt 1993), as shown in (21).

(21) a. ram=ne jiraf dekʰ-i
Ram=Erg giraffe.F.Nom see-Perf.F.Sg
'Ram saw a/some giraffe.'

b. ram=ne jiraf=ko dekʰ-a
Ram=Erg giraffe.F=Acc see-Perf.M.Sg
'Ram saw the (particular) giraffe.'

In contrast, the dative *ko* is associated with the theta-role *goal* and can appear on subjects and indirect objects (see T. Mohanan 1994, Verma and K.P. Mohanan 1990 and references therein). The dative *ko* is never optional with an indirect object, nor does it participate in alternations with other cases when marking an indirect object.

The dative does participate in alternations with the ergative when it marks a subject. The sentences in (22) illustrate an alternation with noun-verb complex predicates (T. Mohanan 1994). Here the case alternation interacts with a difference in the choice of light verb: agentive 'do' vs. unaccusative 'come'.

(22) a. nadya=ne kʊhani yad k-i
Nadya.F.Sg=Erg story.F.Sg.Nom memory do-Perf.F.Sg
'Nadya remembered the story (actively).'

b. nadya=ko kʊhani yad a-yi
Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg
'Nadya remembered the story (the story came to Nadya).'

The dative *ko* marks a goal or experiencer in the manner of psych-predicates in (22b), while the ergative *ne* marks agentivity or volitionality in (22a). This rough semantic correlation extends to other constructions as well. In a departure from the split-ergative pattern in which ergative case is tied to the presence of perfect morphology, Urdu/Hindi allows the ergative to appear with an infinitive in combination with a present or past form of the verb 'be'. This construction shows a systematic alternation between ergative and dative subjects, which coincides with a difference in modality, as illustrated by (23).

(23) a. nadya=ne zu ja-na hɛ
Nadya.F=Erg zoo go-Inf.M.Sg be.Pres.3.Sg
'Nadya wants to go to the zoo.'

b. nadya=ko zu ja-na hɛ
Nadya.F=Dat zoo go-Inf.M.Sg be.Pres.3.Sg
'Nadya has/wants to go to the zoo.'

Bashir (1999) examines the use of these constructions in modern Urdu TV-dramas and shows that the dative represents the unmarked option (Elsewhere Case): the subject may or may not want to perform the action. The ergative is again roughly correlated with volitionality (i.e. control over whether or not the action should be performed), although the precise interpretation is contextually dependent.

Based on this distributional pattern, Bashir (1999) suggests that the ergative is encroaching on the domain of the dative. If this is true, then the implication for this paper is that Urdu/Hindi has a case system in which individual case forms shift semantic and functional ground within a complex system of case marking. That is, the domain of a particular case marker may shift over time and/or new case markers may be introduced into the language without a concomitant alteration of the basic nature of the underlying case marking system of the language.

4.6.3 The Instrumental

The modern Urdu/Hindi instrumental is of interest here because one implication of the passive-to-ergative hypothesis is that the Urdu/Hindi ergative *ne* is a direct continuation of the old Sanskrit instrumental. If *ne* was the old instrumental, then it is not clear why the case marker *se* should have been introduced to function as the basic instrumental.[15] This case marker appears on instrumental adjuncts, passive agents ((24)), and is also used as a comitative.

(24) cor (pʊlɪs=se) pɑkṛ-a gɛ-ya
thief.M.Sg.Nom police=Inst catch-Perf.M.Sg go-Perf.M.Sg
'The thief was caught by the police.'
(adapted from T. Mohanan (1994:183))

The instrumental in (24) is an adjunct. However, in the superficially very similar construction in (25), the instrumental can be shown to be a subject (tests come from control and anaphora). Furthermore, unlike the passive, (25) expresses a special semantic predication: a certain ability is predicated to be true of the subject (Butt 1997).

(25) ʊs=se gɪr-a ja-e-g-a
Pron.3.Sg=Inst fall-Perf.M.Sg go-3.Sg-Fut-M.Sg
'She will be able to fall.'

[15]The instrumental *se* is related to Sanskrit *sam* 'with' (Beames 1872–79:274).

The morphology on the main verb 'fall' is identical to the morphology on the "true" passive in (24). However, syntactically and semantically (25) is very different from (24). Furthermore, the light verb 'go' can also be used with a nominative subject in a similar construction. The only verbal difference between (25) and (26) is that the ability construction in (25) contains an extra morpheme on the main verb.

(26) vo gir ja-e-g-i
Pron.3.Sg fall go-3.Sg-Fut-F.Sg
'She will fall.'

Note that the alternation between (25) and (26) could be taken to be similar to the alternation between a *-ta* participle and its "active" correlate. In both cases a bit of morphology is added to the main verb and in both cases the nominative argument must be marked with an instrumental. However, despite these parallels, analyzing the alternation between (25) and (26) as a passive/active type of alternation would be doing violence to the language.

4.6.4 Summary

This section has shown that the modern Urdu/Hindi case system allows for a range of non-nominative subjects which participate in a variety of semantically conditioned case alternations. The possible uses of the ergative and the case alternations also show that Urdu does not conform to the simple idea of a split-ergative (or split-active) system. As such, the case typology introduced in section 4.2.1 does not promote an understanding of the underlying synchronic case system of the language.

4.7 A Case for Historical Stability

This section establishes that the lexical semantics of verbs in terms of their argument structure properties has changed very little over the ages. From this, I conclude that just as Urdu/Hindi does not conform to a canonical split-ergative (or split-active) language, neither does Sanskrit conform to the idea of a canonical accusative language. Rather, both languages use a complex system of case marking that is highly dependent on verb classes. Because this pattern has been handed down over the centuries, there cannot be a question of an accusative to ergative shift. This section first surveys the patterns of psych-predicates over the ages and then discusses case alternations.

4.7.1 Lexical Semantics

The tables in (27)–(29) show a class of verbs that would commonly be placed in the category of psych-predicates (e.g., Grimshaw 1990). How-

ever, lexical semantic classifications tend not to correlate in a one-to-one manner crosslinguistically. Indo-Aryan languages classify verbs according to criteria which sometimes differ from the more familiar Western European context. Based on a careful examination of Marathi case marking patterns, Joshi (1993), for example, identifies several different factors which determine the classification of verbs in South Asian languages.

The class of psych-predicates *experiencer verbs* is divided into two classes in Indo-Aryan: one class allows the experiencer to be marked with either dative or genitive; another class follows the standard pattern for transitive clauses and marks the "experiencers" with the nominative.

(27)

Sanskrit		
Verb (Present.3.Sg)		Experiencer
jānāti	'know'	Nom
parisaṅkate	'suspect'	Nom
smarati	'remember'	Nom
ākāṇkṣati	'desire'	Nom
icchati	'want'	Nom
paśyati	'see'	Nom
śṛṇoti	'hear'	Nom
rocate	'please'	Dative or Genitive
kalpate	'seem proper'	Genitive

(28)

Pāli Verb (Present.3.Sg)		Experiencer	Experiencee
janāti	'know'	Nom	Acc
parisaṅkati	'suspect'	Nom	Acc
sarati	'remember'	Nom	Acc
ākaṇkati	'desire'	Nom	Acc
icchati	'want'	Nom	Acc
passati	'see'	Nom	Acc
suṅāti	'hear' (non-human)	Nom	Acc
	'hear' (human)	Nom	Gen
khamati	'please'	Gen/Dat	Nom
kappati	'seem proper'	Gen/Dat	Nom
pattakallaṃ [hoti]	'seem right'	Gen/Dat	Nom
[X] etad hoti	'this occurs to [X]' '[X] thinks of this'	Gen/Dat	Nom
rucati	'please'	Gen/Dat	Nom

(29)

Urdu Verb (Infinitive)		Experiencer	Experiencee
janna	'to know'	Nom	Acc/Nom
cɑhna	'want'	Nom	Acc/Nom
dekʰna	'see'	Nom	Acc/Nom
sunna	'hear'	Nom	Acc/Nom
Note: all these take an ergative with perfect morphology			
lɑgna	'seem'	Dat	Nom

The case marking patterns reflect a relatively stable system. The verbs which allowed genitive or dative experiencers in Sanskrit still did so in Pāli.[16] None of these particular lexical items seem to have survived in modern Urdu/Hindi (they have generally been replaced by noun-verb complex predicates of the type seen in section 4.6.2); however, the basic distinction between the two verb classes still holds, as seen in (28)–(29).

Those verbs which did not take genitive/dative subjects in Sanskrit and Pāli still do not in Urdu. Thus, the basic underlying system of verb classification remained relatively stable.

All the nominative subject verbs in (29) take an ergative when the verb is marked with perfect morphology. This was the case for Sanskrit and Pāli as well.[17] When the verbs occured with the *-ta* participle, rather than with the present form listed above, their agents were marked with an instrumental or, in the case of Pāli, a genitive.

Conversely, the verbs discussed in section 4.5 which Pāṇini's grammar specified as taking nominatives rather than instrumentals (inceptives, motion verbs, unaccusative intransitives) still do so today. As was evident from the rules from Pāṇini's grammar in section 4.5, the conditioning factor lies in the lexical semantics of the verbs.

4.7.2 Case Alternations

As discussed in section 4.6, unergative intransitives take ergative subjects in alternation with nominative subjects. Davison (1999) exhaustively lists this class of verbs: *bʰõk* 'bark', *ʄʰãk* 'peep, look into/through', *kʰãs* 'cough', *cʰĩk* 'sneeze', *muskara* 'smile', *tʰuk* 'spit', *mut* 'urinate', *hag* 'defecate', *naha* 'bathe', *ro* 'cry', *hãs* 'laugh', and *so* 'sleep'. A small class of transitive verbs allows this same nominative/ergative alternation as

[16]The genitive and dative collapsed into one form in Pāli. The table in (28) is based on Peterson (1998:100).

[17]Peterson (1998) studied a limited text sample of Pāli in which he documented instances of the *-ta* participle only for 'hear' and 'see'.

well. Davison (1999) lists these as: *samajh* 'understand, suppose', *bʰul* 'forget', *jan* 'give birth (to)', *phãd* 'leap over', *bak* 'to talk nonsense', and *har* 'lose, be defeated'. The alternation of ergative vs. nominative subjects on these verbs correlates with a semantic difference in volitionality or control over the action.

This type of alternation is found in Old Indo-Aryan as well. Speijer (1886:§114) discusses a genitive/instrumental alternation with verbal nouns in Sanskrit. Jamison (1979) also notes this alternation in Vedic and discusses a genitive/instrumental alternation in conjunction with finite verbs that expresses possessive vs. agentive semantics (Jamison 1979:134). Jamison further lists a number of lexical semantic factors which condition the appearance of one case in alternation with the other. Thus, case alternations have been in place since Old Indo-Aryan.

Middle Indo-Aryan also contains evidence that a semantically motivated alternation of case marking is not an innovation of Urdu/Hindi. This evidence is based on a study by Andersen (1986), who examines the *-ta* participial construction used in Aśokan inscriptions. He finds that the agent is marked either with the genitive or the instrumental. The genitive is rarer and can only apply when the agent is animate. No such restriction applies to the instrumental. The instrumental thus appears to be the unmarked case, while the genitive is marked.

4.7.3 Summary

In this section, I have provided evidence for several points. For one, I showed that case marking in Sanskrit was more complex than would be expected from a simple accusative system, and that there appear to have been semantic factors at work in the determination of case marking. Middle Indo-Aryan in the form of Pāli and the Aśokan inscriptions also shows evidence of case marking as determined by lexical verb classes and semantically determined case marking alternations. This pattern is continued down into Urdu/Hindi, where case marking is again more complex than would be expected from a simple ergative system, and where case alternations are governed by semantic factors. Viewed from this perspective, nothing substantial has changed in the case system of the languages over the span of 2000 years, and as such it it is misleading to speak of an accusative to ergative shift.

4.8 Accounting for Case Alternations

This section presents an analysis of case alternations in both Urdu/Hindi and Sanskrit. The analysis of Urdu/Hindi case marking is based on Butt and King (1999). The analysis of Sanskrit is more speculative in nature

and experiments with using the same basic approach to case marking and case alternations developed for Urdu/Hindi.

The analysis is presented within LFG (Lexical-Functional Grammar) as this framework allows for the specification of a complex interaction between information contributed by the case markers, the verbs, and the semantics. The unification-based model of grammar assumed by LFG allows morphemes and clitics to contribute the same kind of functional information to the analysis of a clause as syntax does. For example, while in some language the notion of topic may be signaled by syntactic position, it may be indicated by morphology in other languages. In both cases, the contribution to the overall analysis of the clause would be the same (Bresnan 2001).

Within LFG's model of grammar, case markers can thus play an active role in the syntax. In particular, information contained in the lexical entry of a case marker can interact with a verb's lexical semantics and its syntactic requirements. If the information contained in the entry of the case marker matches or supplements the information contained in the entry of the verb, the appearance of the case marker is wellformed. On the other hand, if the information contained in the entry of the case marker clashes with the information contained in the lexical entry of the verb, the construction is illformed.

This approach to case allows for a natural interpretation of the historical facts because individual case markers may collapse into other case markers or shift their domain of applicability via a change in individual lexical entries without necessarily affecting the underlying case system.

4.8.1 An Active Role for Case Markers

Recall that the ergative in Urdu/Hindi does not conform strictly to the split-ergative or split-active pattern. The ergative is not confined to transitive agents, nor is it restricted to the perfect tense/aspect. Because of this deviation from the canonical split-ergative/split-active pattern, Urdu/Hindi has generally resisted formal analysis.

Bittner and Hale (1996), for example, analyze the Hindi ergative as a marked structural Case assigned by I. This is an improvement over a view which sees the ergative as purely lexically inherent or quirky case. Bittner and Hale can account for ergative subjects of intransitives because they analyze unergative intransitives as underlyingly transitive. However, it remains a mystery why the ergative is obligatory with overtly transitive perfect clauses, but optional with perfect unergative intransitives. Thus, the ergative-nominative alternation on the subjects of unergatives receives no explanation under this approach, nor does the ergative-dative subject alternation, both of which are correlated with volitionality.

A further complication is that Urdu/Hindi allows for an ergative-accusative pattern in addition to an ergative-nominative one. This alternation is tied to specificity effects. Bok-Bennema's (1991) approach, for example, legislates against the existence of such a pattern in structural terms. Again, the interaction of semantics with case marking must be taken into account in a more satisfactory manner.

In order to do greater justice to the complex case marking patterns found crosslinguistically, Woolford (1997) proposes a four-way case system in which case markers are roughly correlated with semantic notions such as agent (ergative) or goal/experiencer (dative). This approach represents a step in the right direction. However, Woolford (1997) treats the ergative as a purely lexical case, whereas the Urdu/Hindi ergative is sensitive to a combination of syntactic and semantic factors. This mixed nature of the Urdu/Hindi ergative is acknowledged by researchers who work primarily on Hindi. Mahajan (1990), for example, proposes that argument NPs in Hindi may have both structural and inherent Case. While this analysis takes into account the complex nature of the Urdu/Hindi ergative case, Mahajan's (1990) system does not cover the range of data discussed in this paper.[18]

Davison (1999) provides the most complete account of ergative marking in Hindi to date. Her research is based on a careful survey of the case marking behavior of several verb classes. She treats the ergative as a structural Case which interacts with the specifications of the lexical entry of the verb and proposes the licensing conditions in (30).[19]

(30) a. *Verb condition:* the lexicon specifies which verbs have [ERG] external arguments.
b. *Aspect condition:* perfective Aspect licenses [ERG].
c. *Tense condition:* finite Tense licenses [ERG]

Davison's proposal is very close to the one presented here: information coming from the verbs' lexical entries interacts with information provided by the ergative. However, under her account, the semantic factors involved in case-alternations are associated with the lexical entry of a verb and the case markers do not contribute independent information to the analysis of the clause: they are merely features which need to be checked off. This is generally true for proposals within generative syntax,

[18] In particular, the specificity effects associated with dative/accusative *ko* come out incorrectly (Butt 1993).

[19] The perfect morphology in Urdu/Hindi is commonly referred to as perfective. Since Urdu/Hindi does not appear to encode perfectivity morphologically, there appears to be no good reason for this terminological convention other than tradition (see Deo 2001 for some discussion).

particularly Minimalist accounts, in which a case feature exists in order to be checked off (Chomsky 1995).

Wunderlich and Lakämper (2000) account for the full range of data associated with ergativity and case alternations in Urdu (cf. Butt and King 1999) via an interaction of semantic and structural Optimality Theoretic constraints. However, case markers are seen as mere exponents of feature bundles (such as [+hr]). In contrast, the approach adopted here builds on the proposals for *Constructive Case* formulated by Nordlinger (1998) (cf. also Butt 1995) whereby case markers are assumed to play an active role in the construction of a clausal analysis by contributing lexically specified information.

de Hoop (1999) sketches an Optimality Theoretic account of case marking which relies on the semantic notions of weak and strong Case formulated in de Hoop (1992). Her account is compatible with the account presented here, as it would supplement the analysis with more detailed semantic machinery.

Sample entries based on Butt and King (1999) for the dative and ergative case markers in Urdu/Hindi are shown in (31) and (32). Each entry contains several disjunctions which represent the differing uses of the case markers.

The entry for the ergative *ne* contains two disjunctions. The first accounts for the appearance of the ergative with modals and the ergative-nominative alternation on subjects of unergative intransitives and certain transitives. Here the use of the ergative is tied to volitionality (rendered as the feature CONTROL +). The second disjunction covers the "structural" (or non-semantic) use of the ergative with transitive verbs that have perfect morphology. This use of the ergative is a purely structural one. In either case, the ergative always requires that it appears on a subject via the use of inside-out functional uncertainty[20] and that it is linked to an external argument.

(31) ne $(\uparrow \text{CASE}) = \text{ERG}$
$(\text{SUBJ} \uparrow)$
$(\text{EXT-ARG} \uparrow_{arg-str})$
`Possibility 1` $(\uparrow_{sem-str} \text{CONTROL}) = +$
`Possibility 2` $((\text{SUBJ} \uparrow) \text{OBJ})$
$((\text{SUBJ} \uparrow) \text{TENSE}) = \text{PERF}$

The *ko* in (32) functions as a dative and an accusative. If the *ko* is accusative, it marks a direct object and contributes a specificity feature to the semantics. If the *ko* functions as a dative, it requires that it be

[20]See Dalrymple (1993) and Butt, King, Niño and Segond (1999) for details on inside-out functional uncertainty.

linked to a goal at argument structure. This requirement reflects the finding that datives are generally associated with goals/experiencers in South Asian languages (Verma and K.P. Mohanan 1990). As a goal, the dative may appear on either indirect objects (OBJ_{go}) or subjects.

(32) ko

`Possibility 1`	$(\uparrow \text{CASE}) = \text{ACC}$
	$(\text{OBJ} \uparrow)$
	$(\uparrow_{sem-str} \text{SPECIFICITY}) = +$
`Possibility 2`	$(\uparrow \text{CASE}) = \text{DAT}$
	$(\text{GOAL} \uparrow_{arg-str})$
	$(\text{OBJ}_{go} \uparrow) \vee (\text{SUBJ} \uparrow)$
	$(\uparrow_{sem-str} \text{CONTROL})$

The dative entry also contains the feature CONTROL, which is left underspecified. This accounts for the ergative-dative alternation found on infinitive constructions ((33)): when the action is inherently specified for control (the 'want' reading), the ergative is preferred. When the reading is underspecified between 'want' and 'must', the dative is preferred.

(33) a. nadya=ne zu ja-na hɛ
Nadya.F=Erg zoo go-Inf.M.Sg be.Pres.3.Sg
'Nadya wants to go to the zoo.'

b. nadya=ko zu ja-na hɛ
Nadya.F=Dat zoo go-Inf.M.Sg be.Pres.3.Sg
'Nadya has/wants to go to the zoo.'

In historical terms, this feature allows for a fluidity between the ergative and dative: the ergative can extend into the domain held by the dative because both are tapping into the same underlying semantic feature.

4.8.2 Argument Structure

The information specified in the lexical entries of the case markers interacts with the lexical semantics and the argument structure of a verb. Table (34) shows the argument structures assumed for representative verbs in Urdu and Sanskrit. In line with standard linking theory in LFG (cf. Bresnan and Zaenen 1990), the features [±r(estricted),±o(bject)] are inherent properties of thematic arguments which constrain the linking of arguments to grammatical functions: [−r] can only be linked to subjects and objects, [−o] only to subjects and obliques, and [+r] to semantically restricted thematic objects (i.e., accusatives of direction in the case of verbs of motion) and obliques.

(34)

Verb Type	Sanskrit	Urdu
Transitive	′make<ag([−o]), th([−r])>′	
Unergative		′cough<ag([−o])>′
Unaccusative	′be born<th([−r])>′	′fall<th([−r])>′
Verb of Motion	′go<th([−o]), loc([+r])>′	

I assume the same argument structure representation for both Sanskrit and Urdu/Hindi. This may not be a surprising proposal, but makes the point that no major changes occurred from Sanskrit to Urdu/Hindi which might have changed the lexical semantics enough to affect the subcategorization frame of a given verb.

The introduction of linking theory into the discussion raises a thorny issue with respect to Sanskrit syntax. Pāṇini's grammar of Sanskrit is a very detailed, complex, and thoughtful piece of work. While Pāṇini formulates a complicated relationship between semantic participants and more abstract thematic roles (Kāraka Theory), he makes no reference to the concept of grammatical roles such as subject or object. This can be understood in two ways: 1) Pāṇini was not sophisticated enough to have thought up the concept of grammatical relations; 2) Sanskrit syntax was not sensitive to such notions. The latter stance enjoys popularity with a fair number of scholars in the South Asian context. Within the context of historical linguistics, Kiparsky (2000) and Deo (2001) have argued that one relevant change (which also contributed to the integration of the *-ta* participle into the verbal paradigm of the language) from Sanskrit to Urdu/Hindi was the development of a functional category which was related to tense and licensed subjects. A fundamental difference between Sanskrit and Urdu/Hindi would thus be that Sanskrit did not have the syntactic notion of subject while Urdu/Hindi does. I remain agnostic on this point within this paper and avoid reference to grammatical relations in the relevant Sanskrit entries, instead referring to thematic roles.

4.8.3 Interaction with Light Verbs and Participial Affixes

The verb *ja* 'go' has many uses in Urdu. Besides a main verb, there are at least two light verb variants: one is associated with unaccusativity and modifies the event semantics of the verb in subtle ways ((34a)), the other gives rise to ability readings ((34b)).

(35) a. vo gir ja-e-g-i
Pron.3.Sg fall go-3.Sg-Fut-F.Sg
'She will fall (down).'

b. us=se gir-a ja-e-g-a
Pron.3.Sg=Inst fall-Perf.M.Sg go-3.Sg-Fut-M.Sg
'She will be able to fall.'

The light verb version of the verb 'go' thus must contain at least two disjunctions: one which accounts for the telic complex predicate and one which realizes the ability predication. An entry for the verb 'go' is shown in (36). The entry for the main verb contains a full argument structure specification, while the light verb entry allows for an unaccusative telic (completive) reading only in combination with a stem form (*gir* 'fall' in (35a), Possibility 1) and for an ability reading only in conjunction with a perfect main verb (*gira* in (35b), Possibility 2).

(36) ja 'go'

`main verb`	V	'go<th([−o]), loc([+r])>'
`light verb`	LV	
`Possibility 1`		$(\uparrow_{sem-str}$ ACTOR CONTROL$) = -$
		$(\uparrow$ VFORM$) =$ STEM
		$(\uparrow$ TNS-ASP COMPLETIVE$) = +$
`Possibility 2`		$(\uparrow_{sem-str}$ ACTOR ABILITY$) = +$
		$(\uparrow$ VFORM$) =$ PERF

Even though the two clauses in (35) contain different case markers on the subjects (nominative vs. instrumental), this is not specified in the lexical entry for 'go' in (36). Instead, I assume that the structural and semantic properties specified in the lexical entry for 'go' interact with the structural and semantic properties specified in the lexical entries for the case markers.

Nominative case is phonologically null in Urdu/Hindi. LFG's model of grammar strongly discourages lexical entries for null elements. I therefore posit nominative as the default case which is assigned as part of a general wellformedness check.[21]

An (incomplete) entry for the instrumental case clitic *se* is shown in (37). The first disjunct states that the instrumental appears on obliques (e.g., passive agents). The second disjunct is relevant when the ability reading has been triggered by the light verb 'go'. In this case the instrumental marks a subject.

[21]This is akin to the Case Filter.

(37) se (↑CASE) = INST
Possibility 1 (OBL ↑)

Possibility 2 (SUBJ ↑)
(↑$_{sem-str}$ ABILITY) =$_c$ +

A similar interaction between case marking and other morphosyntactic elements in the clause can be posited for Sanskrit. The Sanskrit participles *-ta* and *-tavya* (the gerundive discussed in section 4.5.3) are referred to as agentive affixes by Pāṇini. This implies that the morphemes themselves carry information relevant for the clausal analysis, just as the light verb 'go' in Urdu does.

Recall that the *-ta* participle could either denote an inceptive as in (38b) or a past tense (either active or stative) as in (38a).

(38) a. evam-uk-tā tu haṃsena damayantī
so-say-Part.Nom.Sg.F then goose.Inst.Sg Damayanti.Nom.Sg.F
'Then Damayanti was spoken to like that by the goose.'
'Then the goose spoke to Damayanti thus.'
(Nalopākhyāna I,30)

b. pra-kṛ-taḥ kaṭa-ṃ devadattaḥ
for-do-Part.Nom.Sg.M mat-Acc.Sg Devadatta.Nom.Sg.M
'Devadatta began to make a mat.'
(based on Katre 1987:341)

Again, the two types of sentences contain subjects with different case marking (instrumental vs. nominative), as in Urdu. As in Urdu, the information encoded for *-ta* does not explicitly refer to case marking, but instead specifies some semantic and structural requirements: *-ta* either requires an agent argument which has control over the action (Possibility 1), or it allows for an inceptive reading (Possibility 2).

(39) -ta
Possibility 1 (↑$_{sem-str}$ ACTOR CONTROL) = +
(↑$_{arg-str}$ AGENT)
Possibility 2 (↑$_{sem-str}$ EVENT) = INCEPTIVE

As in Urdu, the case morphology in Sanskrit specifies the case of the noun phrase and allows for several disjunctions according to the structural and semantic properties of the clause. The Sanskrit instrumental *-ina* is globally restricted to appear with agents. When the verb is marked with either the *-ta* participle or the gerundive *-tavya*, then the agentive (CONTROL) reading of the instrumental comes into play. This reading may also give rise to the 'want' reading seen with *-tavya*, in parallel to the Urdu ergative case in the infinitive construction ((33)).

(40) -ina $(\uparrow \text{CASE}) = \text{INST}$
$(\text{AGENT} \uparrow_{arg-str})$
Possibility 1 $(\text{OBL} \uparrow)$

Possibility 2 $((\text{SUBJ} \uparrow) \text{ VFORM}) =_c \text{ta} \vee \text{tavyā}$
$(\uparrow_{sem-str} \text{ CONTROL}) = +$

Case alternations in Urdu/Hindi and Sanskrit can thus be analyzed as the result of a complex but consistent interaction between argument structure, verbal morphology and light verbs, and the information specified by the case markers. The lexical entries for Urdu/Hindi and Sanskrit interact in fundamentally the same way, although some of the particular information contained in the entries differs.

4.8.4 Summary

This section presented an approach to Urdu/Hindi and Sanskrit case marking which uses the mutually constraining model of LFG. Under this model, information from different modules of the grammar combines in order to produce a wellformed analysis. The account does not presuppose a rigid classification of case systems into accusative vs. ergative vs. active, etc. Rather, it allows for a complex system of case marking which overlays an essentially "accusative" organization of grammatical relations. The independence of grammatical relations vis-à-vis case marking is crucial to the analysis: case marking does not uniquely determine the grammatical relation of a noun phrase, it merely encodes the possible grammatical relations and the relevant semantic and syntactic factors.

4.9 Historical Scenario

The inflectional Sanskrit case eroded away to *ẽ/e*. In Urdu/Hindi, a remnant of this old inflectional case marking is retained for the oblique marking of nouns ending in *-a*. Like many other languages, Sanskrit also employed a large set of postpositions in addition to the case markers (Speijer 1886). I hypothesize that many of the modern case markers were drawn from this set of postpositions and that they gradually took over the functions of case markers as the Sanskrit inflectional case marking collapsed. I propose that in taking over the functions of the original case markers, the postpositions adopted many of the structural and semantic requirements inherent to that construction.

To illustrate this historical scenario in terms of a concrete example, take the modern Urdu/Hindi ergative marker *ne*. This case clitic was perhaps drawn from a postposition which came from Sanskrit locative *janiyē* 'for the sake of, because of'. The semantics of this postposition

were relatively wide so that it was compatible with a goal/recipient ('for the sake of') or an agent ('because of'). In some modern Indo-Aryan languages this new case marker took on the distributional pattern of a dative. In other languages, it assumed an agentive use and was eventually dubbed an "ergative" by the grammarians of this century.

Because one of the agentive uses was in conjunction with the *-ta* participle and because the new case markers adopted the structural restrictions associated with particular constructions, the modern ergative is generally (but not always) restricted to the perfect morphology which descended from the *-ta* participle. Furthermore, since the interaction between case marking and verbal morphology is mediated via semantic constraints, case markers can undergo a distributional shift. If the ergative *ne* is generally associated with volitionality, then it is reasonable to extend the distribution of the ergative. A possible example is the non-perfect construction which expresses an alternation between 'want' and 'must' ((33)). This scenario does justice to Bashir's (1999) conclusion that the ergative appears is encroaching on the domain of the dative.

4.10 Conclusion

This paper has attempted to show that an understanding of the historical facts surrounding the appearance of the ergative *ne* in Urdu/Hindi is best accomplished from a point of view which does not classify languages by considering only a limited set of the case markers. A focus on only nominative vs. ergative vs. accusative, without a consideration of the role of dative, genitive or instrumental case marking obscures the structure of a language and tempts the researcher into simplistic explanations of language change. For Urdu/Hindi this involved an accusative to ergative shift via the reanalysis of a passive construction, a hypothesis which does not seem to be supported by the historical data.

An alternative view of case sees Sanskrit and Urdu/Hindi as employing a complex system of non-nominative marking with a system which is syntactically "accusative". In particular, it was shown that both Sanskrit and Urdu/Hindi employ a complex system of semantically conditioned case alternations: the form and distribution of individual case markers may have changed, but the basic system of usage has not changed.

If the hypothesized shift from accusative to ergative did not take place in Indo-Aryan, the question arises whether the notion of a fundamental case system shift should not be rejected altogether as a possible instance of cataclysmic language change. This is an issue which needs to be investigated further because Indo-Iranian is cited as the primary example of a language family that underwent an accusative to ergative

shift. Other cases cited include Australian and Polynesian, but there the historical data are much scanter than for Indo-Aryan. Within the Iranian branch, modern Persian is an accusative language which comes from an accusative ancestor, but is considered to have had an ergative stage. The data for Persian is beyond the scope of this paper, but I would like to suggest that a reexamination of the relevant Iranian data is imperative in light of the proposal put forward here.

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5

Representation and Variation: On the Development of Romance Auxiliary Syntax

CHRISTOPH SCHWARZE

5.1 The New Interest in Historical Linguistics

If linguistic research can be said to be returning to issues of linguistic change since the close of the twentieth century, this interest can be attributed to various motivations.[1] One might be disposed to see structuralism, as well as the generative and formalizing linguistics that were structuralism's outgrowths, as fundamentally misguided, and one might wish to put things back on course by returning to the kinds of issues that were central in nineteenth century linguistics. It is possible, on the other hand, to remain convinced that modern linguistics, with its focus on structural data and on an underlying cognitive conception of competence, has achieved genuine scientific progress. In this case the task at hand is rather to deepen the modern understanding of language by extending the reach of modern linguistics to those aspects that have been neglected in recent years. The motivation of this study is of the latter sort: it rests on the conviction that the model of linguistic competence must be constructed so as to encompass historical change, and that this

[1]A previous version of this paper was published in German as Schwarze (1999). I wish to thank Westdeutscher Verlag for their permission to publish an English version of this text. I am also grateful to Bruce Mayo, on whose translation of the German original the present revised and extended text is based, and to two anonymous referees, who formulated stimulating criticisms.

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

is not achieved simply by attributing change to the conditions under which children acquire language.

The following is an attempt to present a much-discussed example of linguistic change in Romance, namely, the emergence of Romance auxiliary syntax, in a modern theoretical context. As is well known, this evolution replaced portions of the Latin conjugation paradigms with syntactic constructions and extended the tense and aspect system. Before attempting to describe this change precisely, however, some general issues need to be clarified.

5.2 General Assumptions about Linguistic Change

In much of the recent work on linguistic change, the following assumptions are made:

i. Language change, like crosslinguistic diversity, is constrained by Universal Grammar, i.e. the genetically specified ability of humans to construct a mental grammar from utterances they perceive during the process of first language acquisition.
ii. Language change is "a failure in the transmission across time of linguistic features" (Kroch 2000:2).
iii. Incomplete transmission of linguistic features must be triggered by variation of the input from which an infant may construct a grammar which is not fully identical with the adults' grammar.
iv. Variation of the input may occur as a result of internal or external causes. Internal causes are changes of frequency, due to changes of communicative habits; external causes are due to language contact.

These positions have been developed mainly within the theories known as Government and Binding (GB) and Principles and Parameters (PAP). On the basis of competing theories they may be questioned, and other hypotheses may be developed. In the following sections, I will advocate some alternatives to the positions mentioned above.

There is no doubt that language does not vary without limits and that, therefore, the concept of Universal Grammar (UG) describes a central, and possibly the most central, goal of linguistic research. However, the specific claims made about UG within the GB and PAP frameworks may reasonably be questioned. In particular, the question of how much of a language is genetically specified and how much must be learned is far from settled. Furthermore, competing theories of grammar, such as Lexical-Functional Grammar (LFG) and Head-Driven Phrase Structure Grammar (HPSG) have developed different hypotheses about the general structure of human language, emphasizing the general architecture of grammar and the representation of grammatical information.

The claim that syntax is central to grammatical structure is correct as long as it is taken as a rather vague formulation. More precise versions of this claim, however, may be controversial. In the present context, it may suffice to say that syntax is not necessarily to be thought of in the way the GB and PAP frameworks do. In these theories, syntax basically has two components: a rigid hierarchy of categories, along which sentences are derived by operations of movement, and a set of principles which constrain these operations. Alternative theories, among them LFG, claim that syntax is defined by constraints on the mapping from argument structure to categorial syntactic structure and encoded, at least partly, in the lexicon (Bresnan 2001). This alternative conception has two consequences. First, it strongly relativizes the centrality of syntax as opposed to the lexicon. Second, and this is the point which is more important here, syntactic change may also be viewed as lexical change. The present contribution aims at giving an analysis of the emergence of Romance auxiliary syntax on the base of this general hypothesis.

5.2.1 Language Change as Lexical Change

The definition of language change as "a failure in the transmission across time of linguistic features" denies that adult speakers can change their parameters once they are set. However, the assumption of parameter shifts, so far, does not seem to be empirically justified (cf. Kaiser 2000, for the presumed verb second parameter in French). If language is constrained exclusively by Universal Grammar, i.e. if there are no parameters, but only lexically encoded instantiations of Universal Grammar, then syntactic change is also lexical change (see also Kroch 1994:5), and there is no reason to exclude the possibility that the variations from which language change originates can occur at any stage of an individual's life. Language change can then be defined as diachronic variation of the mental lexicon, socially shared through communication.

5.2.2 Lexicalization

Under this assumption two kinds of diachronic processes can be distinguished: lexicalization and delexicalization. There are two kinds of lexicalization, lexicalization of complex linguistic forms and lexicalization of contextually triggered interpretations.

Lexicalization of Complex Linguistic Forms

Lexicalization of complex linguistic forms is the process of storing in the lexicon a regularly generated expression, independently of whether its properties, e.g., its meaning, is altered in the process. Lexicalized complex forms can be accessed in two ways: indirectly, by using the generative system of the language, and directly, by retrieving it in the

lexicon (Jackendoff 1997). To take an example from lexical morphology: the adjective *unhappy*, if it is lexicalized, may be accessed in two ways, via the morphological system as a sequence of its constituents *un-* and *happy*, and directly, as a lexical item. For reasons of computational efficiency, the procedures of perception or parsing must prefer direct lexical access to indirect access via the generative system.

Lexicalization of complex linguistic forms is a process which takes place over time, and which can be modelled in the following way. When a complex item is produced, it is stored in a temporary lexicon (Mayo 1999), from which it is subsequently dropped, unless it is used again often enough to enter the main lexicon, i.e. to be lexicalized. Since this process takes place over time, it is virtually diachronic. A diachronic process proper comes about when the indirect access to the lexicalized form is progressively abandoned. As a consequence, a lexicalized complex form, e.g., English *oxen*, may survive that property of the generative system to which it was originally due.

Lexicalization of Interpretations

A lexical item is a linguistic form of a given category, plus its functional and semantic properties. These properties generally are underspecified with respect to reference in such a way that they only restrict, but do not determine, the interpretations which lexical items receive at the level of the sentence and of discourse. Again, computational efficiency requires that alternative interpretations be probabilistically ranked, and high ranking interpretations may be lexicalized, i.e. become a component of the item's functional structure or lexical meaning. As an example, consider the noun *printer*, in the sense of 'printing machine for computers'. The morphological system defines the lexical meaning of *printer* as 'a person whose job is printing'. A second meaning, 'an instrument used for printing', is derived by a rule of polysemy, which we may call "agent to instrument." In actual usage, the referents of *printer* in that latter sense are mostly printing machines for computers. If this interpretation has been lexicalized, 'printing machine for computers' has become the lexical meaning (or one of the lexical meanings) of *printer*. It will be shown in the following that processes of lexicalization also concern syntax, namely the control of the covert subject of passive participles.

5.2.3 Delexicalization

Delexicalization is the inverse of lexicalization. Lexical items may be dropped from the lexicon, and lexical associations of form and function may be forgotten. An example of lexical drop is Middle English *holpen* 'helped', which disappeared from the lexicon, with the consequence that

the past of *to help* had to be generated as *helped* by the current morphological system. An example of the dissociation of form and function is the form *but*. In Middle English, it could be an adverb meaning 'unless' (*and but I have hir mercy and hir grace*, Chaucer). These properties are no longer present in modern English; the lexical item "*but*, ADVERB, 'unless'" has been delexicalized, although the form *but* is still there. It will be claimed below that the emergence of non-passive past participles is a case of delexicalization.

5.2.4 Causes of Change

Resuming the above discussion on the intrinsic causes of language change, we can say that both first language acquisition and language use make languages unstable. At a more general level, one may even doubt whether it is a reasonable aim of linguistic research to look for the causes of singular changes. In fact, language is subject to the conflicting requirements of memory, perception, and production, in such a way that linguistic systems are unstable by nature.[2] If this is correct, what needs causal explanation is not language change, but the stability of a language over a long period. Causes of stability over time are necessarily external to the linguistic system as such; they must be looked for in the cultural setting, specifically in attitudes of speech communities regarding their language, in the practice of reading and writing, in the educational system, etc.

That does not mean, however, that language change, in a linguistic perspective, is just random. Linguistics can model singular diachronic processes and show how they are related to the conflicting requirements just mentioned.

5.2.5 Modelling Language Change

In order to sucessfully model language change, the following methodological points are widely observed. In analyzing linguistic change, two kinds of hypotheses can be posited with respect to the available data: a) hypotheses about synchronic states s_1, s_2, ... s_n that are temporally ordered; b) hypotheses about the processes leading from each state s_i to its successor s_{i+1}.[3] Of course, formulating these hypotheses entails

[2]Conflicts of this kind have been described, in connection with the analysis of "errors" in spoken French, as early as 1929 by Frei (1993).

[3]The question can also be raised of whether these postulated states are empirically verifiable realities or merely artifacts of the method. Ramat (1987:17) appears to take the latter position when he writes,

> "The historical perspective will thus give a sensible answer to the much debated question whether the development of AUX must be thought of in terms of Thom's catastrophic approach or as a result of a steady, gradual evolution ... The linguistic change leading to aux-

two further conditions: there must be a model of grammar in which the postulated synchronic states can be defined precisely, and there must be a "trans-synchronic" linguistic theory providing a framework in which the diachronic transitions can be formulated. Such a linguistic theory must define constraints not only on the possible synchronic states, but also on the possible diachronic processes. It must thus secure the reconstruction of linguistic change against arbitrariness, provide a certain degree of formal explicitness in the argumentation, and allow justifiable choices among conceivable alternative reconstructions. Formulating such constraints means looking for a universal set of ideal elementary changes by means of which complex changes can be analyzed into small steps and which also occur in synchronic variation. Elementary changes of this kind are well known in phonology (raising, nasalization, voicing, etc.); they are still to be explored regarding morphological and syntactic change. Regarding the present study, the substitution of a semantic motivation for auxiliary selection with a formal motivation is a candidate for such a set.

5.2.6 The Model of Grammar

In principle any approach that allows explicit description of grammars is suitable for defining synchronic systems and subsystems.[4] However in order to be useful for the analysis of language change, a model of grammar must have a level of representation at which subsequent stages of a given language can be compared. In this view those models are preferable which make no commitments to configurational structures and categories and therefore have a high degree of comparative power. Lexical Functional Grammar (LFG) is such a model. It can express well-formedness by testing feature structures, realized as hierarchically organized attribute-

iliaries is gradual but the recategorization of the items according to the definitional criteria chosen by the linguist will follow a yes/no strategy, i.e. a catastrophic point of view."

The truth may well lie in the middle. There are good reasons to think that in every diachronic cross-section, large parts of the linguistic system are stable (as the development of Italian in fact demonstrates, structural features can remain stable over the course of centuries), while others are in flux. Specific cases let this be shown empirically: those parts of the system in which no significant free variation is evident (stylistic or sociolinguistic) are exactly those parts that at a given point in time are not in flux. An innovation becomes established in a language at the point where it is no longer subject to free variation. This condition is reached gradually, but it becomes established "catastrophically."

[4]Vincent (1987:254) similarly observes, "We need carefully articulated and elaborated theories of language structure—and these generally end up being formal or formalizable—before we can see what there is to explain."

value pairs, for consistency and mutual compatibility.[5] Given its level of functional representation, LFG makes it possible to describe abstract grammatical information, such as tense, regardless of whether that information is expressed by morphology or syntax. This is an advantage for the analysis of processes in which morphology is replaced by syntax, as in the rise of Romance compound tenses and periphrastic passives.

The architecture of LFG has another important advantage for the study of language change, namely that syntactic properties are encoded, to a large extent, in the lexicon. This makes it possible, not only to affirm, as has been done above, that syntactic changes are changes in the lexicon, but to actually describe them as such. I will make use of this advantage, analyzing the emergence of Romance auxiliary verbs as a change in the lexical entries for those forms, auxiliaries and participles, which were to become the material of compound tenses and passive constructions.

5.2.7 Variation

Every synchronic system makes available possibilities for variation, such that a given abstract representation (e.g., a phoneme) can be realized in various ways. The choice among variants is generally governed by constraints and preferences.

Linguistic change presupposes the existence of synchronic variation. The simplest case can be characterized as follows: If at a given stage of linguistic evolution s_1 there is a valid linguistic object a (a word, a phonological or morphological segment, a rule, a mapping relationship, etc.) which corresponds at stage s_2 to a linguistic object b, then b must have already existed as a variant at stage s_1.

The thought underlying the thesis that change arises from synchronic variation is not new. It is implicit in the notion of the morphologization of phonological variation, and it also plays a role in explanations of lexical replacement which assume that, at an intermediate stage, the new word is a "satellite" of the replaced word and subsequently gradually becomes the preferred variant. In these cases, the linguistic object which shows variation is a phoneme or an entity in some culturally conditioned naming system.

The question is, what kind of variation is relevant to the change we are considering here. It has been claimed that "syntactic change proceeds via competition between grammatically incompatible options which substitute for one another in usage" (Kroch 1994:1). However for the diachronic process at hand, i.e. emergence of the Romance auxil-

[5]For an introductory overview see Abeillé (1993).

iary syntax, the relevant variation was not made up of incompatible options, but, as we shall see, of perfectly compatible choices of semantic interpretation.[6] These choices may include quantification, argument structure and thematic roles, modality, temporal and aspectual relations, and other kinds of semantic information.

With reference to the overall structure of the grammar, these kinds of variation are in certain respects local in nature: they are not directly involved in the grammatical system as a whole. However entire grammatical systems are also subject to variation, a phenomenon which is, e.g., the subject of classical language typology, but also of the current theory of naturalness. In contrast to these phenomenological approaches, which work in categories that refer solely to the structure of a language, I would like to consider variation of grammatical systems from the standpoint of learnability.

5.2.8 Learnability

It was said above (section 4.2.4) that language is subject to the conflicting requirements of memory, perception, and production. It must be added that, regarding memory, there is a further conflict, the conflict between competing principles of learnability.

The learnability of grammatical structures is determined by two principles: conceptual motivation and formal homogeneity. The principle of conceptual motivation requires correspondences between grammatical and conceptual distinctions; when grammatical structures correspond to conceptual entities, they are easier to learn.[7]

The principle of formal homogeneity, in contrast, requires grammatical systems and subsystems to be formally consistent or homogeneous, regardless of conceptual distinctions.[8]

[6]Lipson (2000) comes to a similar conclusion in her study of the loss of auxiliary selection in English.

[7]An example showing the correspondence principle at work is the correspondence between grammatical gender of nouns and various conceptual categories. In Italian, grammatical gender corresponds to biological sex (*uomo* masc. 'man', *donna* fem. 'woman'), to the distinction between a fruit and the tree that bears it (*pera* fem. 'pear', *pero* masc. 'pear tree'), as well as to abstract categories like 'name of a city', which are feminine (*la lontana Palermo* 'far-away Palermo') and names of numbers, which are masculine (*il sette* 'the seven').

[8]An example of the homogeneity principle, again taken from the gender system of Italian, is the systematic assignment of grammatical gender by derivational suffixes. In Italian all deverbal nouns are masculine when they end in *-mento* and feminine when they end in *-zione*. This should not be taken to mean that the two principles fully determine the gender of a noun; there is, for example, no evident reason why *leone* 'lion' should be masculine and *tigre* 'tiger' feminine.

The two principles act on various components of the grammar with varying strength. In syntax and morphology both principles are at work. For this reason, expressions that satisfy the principle of conceptual motivation can compete synchronically with others that satisfy formal homogeneity, and this can lead to conflicts.[9]

Furthermore, where these principles stand in conflict, they can act with varying strengths, and this strength relationship can vary diachronically. In extreme cases the language type will change; less dramatic changes can arise as conceptual motivation and formal homogeneity exchange dominance in determining the course of development.

These as yet vaguely formulated principles of learnability shall be illustrated now in terms of the development of Romance auxiliary syntax. We will look at only three languages, Spanish, Italian and French, and only with respect to a core area of the phenomenon, namely, the compound tenses (including auxiliary selection) and the passive periphrasis. First, we characterize the current states of the languages;[10] thereafter we sketch the developments that have led to these states.[11]

5.3 Representing Modern Romance Auxiliary Syntax

In the following sections, I discuss the question of Spanish, French, and Italian temporal and passive auxiliaries as lexical items and how their role at the sentence level can be represented within the LFG framework.

The problems which will be considered are the functional status of the auxiliaries and of the participles involved, the relationship between the tense of the auxiliary and the tense of the sentence, and, in the case of French and Italian, auxiliary selection. There are two topics which I will not consider in this study, object agreement of the past participle and auxiliary selection with complex predicates, because the study of their evolution would require the analysis of a large corpus of texts.[12] Throughout this section I will draw heavily on published work.

[9] An example of such a conflict is the German word *Mädchen* 'girl'. To satisfy correspondence, it should be feminine, but to satisfy homogeneity it should be neuter, like other diminutives derived on *-chen*. The conflict is resolved inconsistently: with respect to syntactic agreement (e.g., in noun phrases) it is treated as a neuter, but in anaphoric agreement (e.g., in choice of pronouns) many speakers treat it as feminine.

[10] These analyses, which cannot be further justified here, are based for the most part on Butt et al. (1996) and Schwarze (1998).

[11] The sketch is a critical synthesis of proposals presented in Harris and Ramat (1987), Tekavčić (1980), and Penny (1991).

[12] For readers not familiar with Italian, it should be mentioned that, in the absence of annotated historical corpora, the morphology of the language makes mechanized searching extremely cumbersome.

5.3.1 Spanish

Of the three languages to be examined here, Spanish has the simplest auxiliary syntax. It forms its compound tenses and its passive using, in each case, a single auxiliary *haber* for the compound tenses in (1)–(3), and *ser* for the passive in (4):[13]

(1) Hemos recibido unas cartas.
have-1-PL-PRES received-M-SG some-F-PL letters-F-PL
'We have received a few letters.'

(2) Las cartas que hemos recibido.
the-F-PL letters-F-PL Rel have-1-PL-PRES received-M-SG
'The letters which we have recieved.'

(3) Los amigos han llegado.
the-M-PL friends-M-PL have-3-PL-PRES arrived-M-SG
'The friends have arrived.'

(4) América fué descubierta por
America-F-SG be-3-SG-PERFECT discovered-F-SG by
Cristóbal Colón.
Christopher Columbus
'America was discovered by Christopher Columbus.'

Morphologically the auxiliaries of Spanish, as well as those of the other languages discussed here, are genuine verbs. Functionally, however, they lack important characteristics of verbs: they have no lexical meaning and no argument structure, and their relationship to the sentence's subject is merely one of agreement. The discussion of the status of auxiliaries has mainly focussed on the temporal auxiliaries of French (Abeillé (1993:94, 263), Schwarze (1998:86ff)),[14] but the results can plausibly be extended to Spanish.

With respect to morphologically specified tense, the passive and the tense auxiliaries differ. The passive auxiliary resembles normal verbs, in particular the homonymous copula *ser*, insofar as its morphological tense is taken as the functional tense of the sentence. In contrast, the analy-

[13] Constructions resembling the passive with the "situation verb" *estar* (Lema 1995) are not genuine passives, because the passive participle can only appear when it is used as an adjective, as in *La puerta está abierta* 'the door is open'; cf. *El proyecto {fué, *estuve} criticado por todos* 'the project was criticized by everyone'.

[14] Manning (1997:3) argues that "tense auxiliaries in French are verbs that necessarily form complex predicates with the following verb (phrase)." He does not say, however, what the lexical entries for these auxiliaries should look like. It is possible that the problems of VP structure for which he seeks a solution (restrictions on VP coordination, auxiliary selection with restructuring verbs) can also be solved assuming that auxiliaries have no argument structure at all.

sis of the tense auxiliary depends on how one thinks of the functional tense system of Spanish (and similar languages). If the so-called present perfect is considered as a present plus some aspectual information (Falk 1984, Alsina 1996:125) no problem arises: the tense of *hemos* in (2) and *han* in (3) is the "present", and the aspect of the sentence is "perfect". However there are reasons to say that "present perfect" (*perfecto compuesto* 'compound perfect' in the Spanish terminology) is just a tense, i.e. one of the values of the attribute "tense", the main argument being that Spanish sentences with the "present perfect", always refer to the past, regardless of any aspectual tinge they may have.[15]

If this analysis is correct, then the morphological tense of the auxiliary is *not* equivalent to the tense of the sentence; the sentence's tense results from rules of syntax that compute functional tense from morphological tense (Schwarze 1998:90ff). This is a point that is important for diachronic evolution. In fact, for Latin *habere* there was no clash between the morphologically defined tense of the verb and the tense of the sentence: the Latin construction which was the predecessor of the Spanish compound tenses had the same functional properties as Spanish *tener* in examples like (7) below.

The second constituent of auxiliary periphrases is a participle that is regularly derived in Spanish by adding a suffix *-d-* to the (extended) stem: *cont-a-d-o* 'counted', *ven-i-d-o* 'come' and which may also be irregular, i.e. lexically encoded: *vist-o* 'seen', *dich-o* 'said'. These forms all occupy the same slot in the paradigm, labelled as the "past participle" (Spanish *participio pasado*). However, the forms which occupy this slot differ from each other at the functional level. On the one hand, there are past participles proper, on the other hand, there are other passive participles, which are not past. The choice depends on syntactic properties of the verb. For transitive verbs, the participle may be both a perfect participle and a passive participle; for intransitive verbs, they are past participles only. The past participle proper has the same argument structure as the finite forms of the base verb. It exists for virtually all verbs. The passive participle, however, has a derived argument structure. The process of derivation is immaterial to the present purpose; we will just define the lexical entries created by that process. The perfect participle,

[15] Abeillé (1993:94) expresses the fact that the French compound past (*passé composé*) is a tense in its own right by specifying it in the lexical entries for the tense auxiliaries: according to her, the entries for *a* 'has' and *sont* 'are', as auxiliaries, contain the equation "(↑Temps) = passé-composé." However this representation only shifts the problem from syntax to inflectional morphology, and actually implies that all simple forms of 'to have' and 'to be' have two tenses.

in Spanish, shows no agreement, it appears exclusively in the masculine singular form, as shown in (5).

(5) Los amigos que hemos encontrado.
the friends-M-PL Rel have-1-PL met-M-SG
'The friends whom we have met.'[16]

The passive participle, on the other hand, agrees with the subject.

(6) La boda será celebrada
the marriage-F-SG be-3-SG-FUT celebrated-F-SG
en Inglaterra.
in England
'The marriage will be celebrated in England.'

In addition, there are periphrases with *tener* 'to have', in which the passive participle is an XCOMP and *tener* is not an auxiliary in the sense defined above. These show agreement of the participle with the object of *tener*.

(7) Tengo preparada una paella.
have-1-SG-PRES-INDICATIVE prepared-F-SG a paella-F-SG
'I have, cooked, a paella.'

There are other periphrases, with *andar* 'to go', where agreement is with the subject.

(8) La puerta anda abierta.
the door-F-SG stands open-F-SG
'The door stands open.'

In these constructions the "past participle" is, functionally speaking, the passive participle, and in this sense the constructions are in the larger sense "passivizations." However the verbs *tener* 'to have' and *andar* 'to go' have lexical meanings[17] and an argument structure; they govern the participle as a complement.

We can now summarize the functional analysis of the tense and passive auxiliaries by presenting them in LFG notation as lexical entries with

[16]In its origins Spanish did show agreement of the perfect participle with the subject; Penny (1991:142) cites *comprada he una vaca* 'bought-F-SG have-1-SG a cow-F-SG', i.e. 'I bought a cow.'

[17]For *tener* this is shown by ungrammatical examples like **Tengo olvidado la paella* 'I have forgotten the paella', **Tengo pensado a la paella* 'I have thought about the paella', as well as implications of the form *Tengo preparada una paella* $\longrightarrow$ *tengo una paella*. In the construction with *andar* plus the passive participle the lexical meaning 'to go' is present in the sense that the construction can be applied only to situations in which some sort of motion is involved, e.g., *el motor anda arrancado* 'the engine is (being) started' but not **el motor anda descrito* 'the engine is described'.

f-structure features. The lexical entries for one inflectional form of the tense auxiliary *tener* and the passive auxiliary *ser* are *hemos* 'we have' in (9), and *somos* 'we are' in (10).

(9) hemos, V, $(\uparrow \text{AUX}) = \text{HABER}$
$(\uparrow \text{SUBJ NUM}) = \text{PL}$
$(\uparrow \text{SUBJ PERS}) = 1$
$(\uparrow \text{MORPH\_TENSE}) = \text{PRES}$
$(\uparrow \text{PART}) =_c \text{PAST}$

(10) somos, V, $(\uparrow \text{AUX}) = \text{SER}$
$(\uparrow \text{SUBJ NUM}) = \text{PL}$
$(\uparrow \text{SUBJ PERS}) = 1$
$(\uparrow \text{TENSE}) = \text{PRES}$
$(\uparrow \text{PART}) =_c \text{PASS}$

The two functional variants of the participle are shown in (11) and (12).

(11) visto, V (past participle proper)
$(\uparrow \text{PRED}) = \text{'VER}\langle(\uparrow \text{SUBJ}), (\uparrow \text{OBJ})\rangle\text{'}$
$(\uparrow \text{PART}) = \text{PAST}$

(12) visto, V (passive participle)
$(\uparrow \text{PRED}) = \text{'VER}_{pass}\langle(\uparrow \text{SUBJ})\rangle\text{'}$
$(\uparrow \text{SUBJ NUM}) = \text{SG}$
$(\uparrow \text{SUBJ GEND}) = \text{MASC}$
$(\uparrow \text{PART}) = \text{PASS}$

Sentences with compound tenses (13a) and passive sentences (14a) are represented at the functional level by f-structures like (13b) and (14b).

(13) a. Pedro ha vendido el castillo.
Pedro have-3-SG-PRES sold-M-SG the castle-M-SG
'Pedro sold the castle.'

b.
$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'NAMED\_PEDRO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \\ \text{PRED} & \text{'VENDER(SUBJ)(OBJ)'} \\ \text{TENSE} & \text{PRESENT-PERFECT} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'CASTILLO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \end{bmatrix}$$

(14) a. El castillo será vendido.
the castle-M-SG be-3-SG-FUT sold-M-SG
'The castle will be sold.'

b.
$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'CASTILLO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \\ \text{PRED} & \text{'VENDER}_{pass}\text{(SUBJ)'} \\ \text{TENSE} & \text{FUTURE} \end{bmatrix}$$

At the level of constituent structure, the auxiliaries are indistinguishable from verbs that govern an XCOMP; like these verbs, together with the participles and their complements, they form complex verb phrases. The fact that the tense auxiliary does not appear as such in the f-structure is a result of the functional analysis given above. That is, the PRED of the participle is projected as the head of the f-structure, but morphological TENSE attributes of the verbs are discarded. Instead, the value of the TENSE attribute is created at the sentence level by the syntactic rule that recognizes periphrases made up of a tense auxiliary and a past participle.

5.3.2 Italian

For the issue at hand, Italian shares the basic features of its auxiliary syntax with Spanish. However it differs from that language in two respects. First, for both periphrastic constructions, i.e. compound tenses and the passive, it uses several competing auxiliaries, whose distribution is governed largely by selectional constraints, and, second, the perfect participle can display agreement with its direct object.

Selection of the Tense Auxiliary

The tense auxiliaries of Italian are *avere* 'have' and *essere* 'be'. The following sketch of their distribution may suffice for the purpose at hand.

All transitive verbs, i.e. verbs which actually have a direct object, select *avere*. Non-reflexive intransitive verbs, i.e. verbs which cannot or actually do not have a direct object, select their auxiliary according to the following criteria: Those verbs which are known as "unaccusative" verbs, such as *rimanere* 'to stay' ((15)) take *essere*, as well as verbs of motion, like *andare* 'to go' ((16)). Some verbs, like those which specify kinds of weather, take both, depending on the context ((17)). Furthermore, all reflexivized verbs take *essere* in the compound tenses ((18)).

(15) *Sono* rimasto a casa.
be-1-SG-PRES stayed-M-SG at home
'I stayed at home.'

(16) *Sono* andato a casa.
be-1-SG-PRES go-PAST-PARTICIPLE-M-SG at home
'I went home.'

(17) a. *Ha* piovuto.
have-3-SG-PRES rained-M-SG
'It has rained.'
b. *E'* piovuto.
be-3-SG-PRES rained-M-SG
'It has rained.'
c. {*ha, *è*} piovuto tutta la notte.
have-3-SG-PRES rained-M-SG all the night
'It rained the whole night long.'

(18) Non ci *siamo* rivisti.
NEG REFL-1-PL be-1-PL-PRES seen-again-M-PL
'We did not see each other again.'

The selection of the tense auxiliary in active, i.e. non-reflexive sentences is entirely or largely steered by the meaning of the verb. This can clearly be seen in verb alternations, as in (19), where (19a) refers to an action and (19b) to a process.

(19) a. *Hanno* affondato la nave.
have-3-PL-PRES sunk-M-SG the ship-F-SG
'They sank the ship.'
b. La nave *è* affondata.
the ship-F-SG be-3-SG-PRES sunk-F-SG
'The ship sank.'

More precisely, the roles which are associated with the arguments of the verb, and the way in which they are mapped onto grammatical functions determine, or at least strongly influence, auxiliary selection. The choice of *avere* being the default case (Alsina 1996:125), the conditions for the choice of *essere* must be defined explicitly. It has been argued that the criterion for the choice of *essere* is that the "theme" is the highest ranking argument (Manning 1992:40, Frank 1996:6), or that there is no "agent" in the argument structure (Schwarze 1998:95). The question is open as to whether there are some *essere*-verbs which are not captured by this kind of analysis (Maiden 1995:153, Frank 1996:6, Schwarze 1998:96,98), or whether looking at other types of semantic information,

e.g., verbal aspect (Van Valin 1990), can eliminate all exceptions. In any event, there are two principles which make auxiliary selection learnable: in non-reflexive sentences it is the correspondence of form and semantic type, whereas in reflexive sentences it is a correspondence between two formal properties, namely 'be'-selection and reflexivity.[18] Both of the learnability principles mentioned in section 4.2.8, conceptual motivation and formal homogeneity, are thus active in Italian auxiliary selection.

Selection of the Passive Auxiliary

Italian has three passive auxiliaries, *essere* 'to be', *venire* 'to come', and *andare* 'to go'. *Essere* and *venire* are unmarked. They differ in their distributions: *essere* is avoided in contexts that would allow an ambiguity with the homonymous copula ((20–21)), and *venire* is not allowed in compound tenses such as the *passato prossimo* (present perfect, cf. (22)).

(20) La porta *è* aperta.
the door-F-SG is opened-F-SG
'The door is (being) opened.'
(not ungrammatical, but unusual as a passive sentence)

(21) La porta *viene* aperta.
the door-F-SG comes opened-F-SG
'The door is (being) opened.'

(22) La porta è {*stata*, **venuta*} aperta.
the door is {been, *come} opened
'The door has been opened.'

Venire, as a passive auxiliary, has conserved a rudimentary dynamic nuance, so that in sentences that describe relatively static situations, *essere* is felt to be a better choice.

(23) Questa disposizione {*sarà*, *?verrà*}
this regulation {be-FUT, ?come-FUT}
capita dai contribuenti.
understood by the tax-payers
'This regulation will be understood by the tax-payers.'

The auxiliary *andare* has two senses, a deontic sense ((24)) and an anti-agentive sense ((25)).

[18] For those readers who are not familiar with Italian, it should be remarked that reflexivity, in that language, is a functional category, not a semantic one. In fact, as can be found in any grammar of that language, it covers various types of semantic structure. A principled account of the participles must be formulated for all non-finite verb forms (participles, infinitives, gerunds), which is a task for future research. For now, I use the feature PART to identify the verb as a participle and to collect its agreement features.

(24) I responsabili *vanno* processati. (deontic)
the responsible-M-PL go-3-PL processed-M-PL
'Those responsible must be brought to court.'

(25) La lettera è *andata* perduta. (anti-agentive)
the letter-F-SG is gone-F-SG lost-F-SG
'The letter has gotten lost.'

In the anti-agentive reading *andare* is not an auxiliary because it governs the participle as an XCOMP (Salvi 1988:93, Giacalone Ramat 1995:8). In the deontic reading, in which *andare* is a genuine auxiliary, it cannot be used in the compound tenses.

Since selection of the passive auxiliary has semantic consequences, information about the selection requirements must appear at f-structure. This can be acheived by specifying the auxiliary which has actually been chosen, as in (26b)–(27b).

(26) a. Il castello verrà venduto.
the castle-M-SG come-3-SG-FUT sold-M-SG
'The castle will be sold.'

b.
$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'CASTELLO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \\ \text{PRED} & \text{'VENDERE}_{pass}\text{(SUBJ)'} \\ \text{AUX} & \text{VENIRE} \\ \text{TENSE} & \text{FUTURE} \end{bmatrix}$$

(27) a. Il castello va venduto.
the castle-M-SG go-3-SG-PRES sold-M-SG
'The castle must be sold.'

b.
$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'CASTELLO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \\ \text{PRED} & \text{'VENDERE}_{pass}\text{(SUBJ)'} \\ \text{AUX} & \text{ANDARE} \\ \text{TENSE} & \text{PRES} \end{bmatrix}$$

Agreement of the Participle

The perfect participle may agree with its direct object (28), especially when the object precedes it.

(28) Le lettere che abbiamo ricevute.
the letters-F-PL Rel have-1-PL received-F-PL
'The letters that we have received.'

5.3.3 French Auxiliaries

The complexity of French auxiliary syntax stands somewhere between Spanish and Italian. Like Spanish, French has only one passive auxiliary, *être* 'to be'; like Italian, it has two tense auxiliaries, *avoir* 'to have' and *être* 'to be', and as in Italian reflexive verbs take the tense auxiliary *être*. However, the lexically determined selection of *être* plays a relatively small role; only twenty French verbs take *être*, and these are a subset of the corresponding Italian verbs. A correspondence between auxiliary selection and argument structure is thus also evident in French, but is less pronounced. The principle of formal homogeneity, for auxiliary selection, is thus stronger than in Italian, but weaker than in Spanish, where it is absolute.

The perfect participle agrees with its direct object when the object precedes it, as in (29).

(29) Les précautions que nous avons prises.
the precautions-F-PL Rel we have taken-F-PL
'The precautions that we have taken.'

5.4 The Development of Auxiliary Syntax

We now turn to a sketch of how Romance auxiliary syntax developed. The general claim underlying the following analyses is that the rise of the Romance auxiliary syntax is paramount to changes of lexically encoded properties of those Latin verbs which were to become Romance auxiliaries and of the Latin past passive and deponent participles.

Unlike other cases of morphological and syntactic evolution which have been studied recently, the emergence of the Romance auxiliary syntax falls in a period of orality. We do have written data on adjustments in auxiliary selection, but there is no corpus of Proto-Romance. Our method therefore has to be that of classical reconstruction. In addition, since traditional Romance historical linguistics has quite thoroughly investigated the changes in the morphological system which turned Latin into the Romance standard languages, the present study, rather than to present new facts, aims at making well-known hypotheses more explicit.

Our analysis will be limited to three Romance standard languages, Italian, French, and Spanish. We will occasionally also look at the so-called Italian dialects, which are not dialects of the Italian standard language, but other Romance languages which originated on the Appennine Peninsula and which, for external reasons, did not fully develop into standard languages. The evidence they yield mainly concerns an initial instability in auxiliary selection and the options for overcoming that situation.

We assume that modern Italian represents a stage of development that both Spanish and French have passed through. Accordingly, we start out with Italian; the development of the other languages will be discussed later.

5.4.1 Latin Participles

Latin participles, which are involved in all auxiliary constructions, form a well-structured system. Their stem-building morphology (as opposed to their inflectional morphology, which is adjectival) expresses tense and determines voice. There are three types of participles, the so-called present, the past, and the future participle.

The present participle, e.g., *amans* '(one) who loves', *dormiens* '(one) who sleeps', *loquens* '(one) who speaks', is a form of virtually all verbs. In contradiction of what their traditional name suggests, present participles are tenseless, just like adjectives. They have active voice.

The past participle, e.g., *amatus* '(one) who was loved', *locutus* '(one) who spoke', is a form of transitive verbs, such as *amare* 'to love', and so-called deponents, such as *loqui* 'to speak', i.e. verbs which have the inflectional morphology of the passive, but the grammatical functions of the active. The tense of all past participles is the past. Their voice is the passive for transitive verbs and the active for deponents.

The future participle, e.g., *amaturus* '(one) who will be loved', *dormiturus* '(one) who will sleep', *locuturus* '(one) who will speak', differs from the past participle only with respect to tense, which is the future. Their voice is the passive for transitive verbs and the active for deponents.

Like adjectives, participles could be complements of the copula *esse* 'to be'. For instance, the following sentences could be formed from past participles and various forms of *esse*:

(30) a. Amatus est.
SUBJECT-M-SG love-PAST-PASSIVE be-PRESENT
'He is one who was loved.'

b. Amatus fuit.
SUBJECT-M-SG love-PAST-PASSIVE be-PERFECT
'He was one who was loved.'

c. Locutus est.
SUBJECT-M-SG speak-PAST-ACTIVE be-PRESENT
'He is one who spoke.'

d. Locutus fuit.
SUBJECT-M-SG speak-PAST-ACTIVE be-PERFECT
'He was one who spoke.'

Varying the type of the participle, one could also get:

(31) a. Amaturus est.
SUBJECT-M-SG love-FUT-PASSIVE be-PRESENT
'He is one who will be loved.'

b. Amaturus fuit.
SUBJECT-M-SG love-FUT-PASSIVE be-PERFECT
'He was one who will be loved.'

As the glosses and translations suggest, the tense and voice of a sentence are determined by the finite verb *esse*, the participle's tense and voice remain encapsulated. This situation changed, as sentences such as those in (30) were used to fill empty slots in the morphology of the passive.

5.4.2 *Esse* as a Tense Auxiliary

Latin had a passive morphology for the finite verb, but for some tenses there were no simple passive forms; cf. the following partial paradigm of Latin *amare* 'to love':

(32)

	Active	Passive
Present	amo	amor
Future	amabo	amabor
Perfect	amavi	—
Pluperfect	amaveram	—

Likewise, the deponent verbs, such as *loqui* 'to speak', had no inflected forms for the same parts of the paradigm:

(33)

	Active
Present	loquor
Future	loquar
Perfect	—
Pluperfect	—

Now, the past participle plus *esse* could be used to fill these empty slots, and did so in Classical Latin. We can reconstruct this process in the following way.

Initially, (30a) could be used in discourse in order to compensate for the missing perfect passive form, which means that (30a) was interpreted as (34):

(34) Amatus est.
SUBJECT-M-SG love-PAST-PASSIVE be-AUX-PRESENT
'He was loved.'

This interpretation left the past participle unchanged, but affected the copula. Its functional properties, which had been central for the functional structure of the sentence, were no longer passed on at the sentence level. Its argument structure, and consequently, its voice, was discarded, and its morphological tense became merely a factor in computing the tense of the sentence. In other words, *esse* became a tense auxiliary from a copula verb.

Sentences with deponent verbs could receive an analogous interpretation; (30c) could be re-analyzed as (35):

(35) Locutus est.
SUBJECT-M-SG speak-PAST-ACTIVE be-AUX-PRESENT
'He spoke.'

One can think of this process as taking place in two steps: initially, representations like (35) were created by some discourse inference, and *esse* existed as an auxiliary only in the temporary lexicon. Then it became lexicalized as such. (35) could now be accessed in two ways: from the copula construction, by the alleged discourse principle, or via the new lexical entry of *esse* as a tense auxiliary. Since the lexicon search takes place first, access as the new auxiliary prevailed, and the access via discourse inference was given up.

The evolution reconstructed so far laid the ground for the selection of tense auxiliaries in Italian. As mentioned above, in that language, *essere* is selected by non-agentive verbs. This can be traced back to Latin *esse*, which originated as a tense auxiliary for two subsets of the Latin verbs: passivized transitive verbs and deponent verbs. The former's subject is non-agentive by definition. As for the deponent verbs, their subjects are agentive (e.g., *loqui* 'to speak', *minari* 'to threaten') or non-agentive (e.g., *mori* 'to die', *nasci* 'to be born'). However deponent verbs were abandoned as a formal class, and most of them disappeared from the lexicon. Those deponent verbs which lexically survived the doom of their formal class, *mori* > *morire* 'to die' and *nasci* > *nascere* 'to be born', were non-agentive; all Latin verbs in the context of which *essere* started its career as a tense auxiliary are non-agentive.

5.4.3 *Habere* as a Tense Auxiliary

At the starting point of *habere*'s history as an auxiliary are constructions in which it governs an accusative object and an XCOMP that is realized with the passive participle[19] of a transitive verb and whose subject is the same as the accusative object, as in (36a) with its f-structure in (36b).

(36) a. Habeo cibum coctum.
have-1-SG-PRES food-M-SG-ACC cook-PAST-PASSIVE-M-SG-ACC
'I have food in a cooked state.'[20]

b.
$$\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{SPEC} & \text{DEF} \\ \text{NUM} & \text{SG} \\ \text{PERS} & 1 \end{bmatrix} \\
\text{PRED} & \text{'HABERE(SUBJ)(OBJ)(XCOMP)'} \\
\text{TENSE} & \text{PRES} \\
\text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'CIBUS'} \\ \text{CASE} & \text{ACC} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \\
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{'COQUERE}_{pass}\text{(SUBJ)'} \\ \text{SUBJ} & \\ \text{PART} & \begin{bmatrix} \text{PASS} & + \\ \text{CASE} & \text{ACC} \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{MASC} \end{bmatrix} \end{bmatrix}
\end{bmatrix}$$

In this construction the sentence receives its tense in the normal way from its finite verb; the participle, however, characterizes further a state

[19] Tekavčić (1980:II,227) says that this construction is based on a perfect participle ("participio perfetto"). This is probably a misleading formulation, for Tekavčić (1980:231) himself observes that the Latin system of participles has a gap. Along with *venturus sum* 'I am one who will come' and *veniens sum* 'I am one who comes', there was initially no *venutus sum* 'I am one who came'. Ignoring the deponents, in Classical Latin a participle of the form *coctus* 'cooked' is past *and* passive. Whether one can see, like Tekavčić, a gap in the system as the trigger for a linguistic change is a different question. In any case, the system of Latin participles also lacked a present passive and a future passive, and these gaps were never filled.

[20] The analysis of *coctum* in (36) as being a complement of *habeo*, as opposed to a modifier of *cibum* can be justified by examples like *venenum quod praeparatum habebat* (Livius), 'the poison which he had prepared' (Nikolaus Schpak-Dolt, p.c.).

of affairs that has been brought to completion.[21] The passive participle posits an existentially bound agent, i.e. (36) implies that someone exists who cooked the food but leaves open who this might be.

The transition to auxiliary status comprises a number of steps, given here in an order which is not necessarily chronological.

i. The semantically given, but only existentially bound agent of the passive participle is identified so frequently in discourse with the subject of the sentence that a kind of conventional coreference arises. The conditions of coreference are first met when the participle names a psychological event (Pinkster 1987:213, Salvi 1987:230) or the accusative object is a non-separable object like a part of the body (Pinkster 1987:213).[22]

ii. The perfective aspect of the passive participle implies priorness. A situation arises in which aspect and temporal reference vary as alternatives for interpretation, and in which the latter gradually becomes more frequent until it alone remains and the phase of variation comes to a close.[23] In this case an accusative object is no

[21]Cf. Tekavčić (1980:II,227), who points out that, in a construction like *compertum habeo*, 'I received the news', the meaning is the present tense, but also the result of a prior completed event ("... COMPERTUM HABEO 'ho saputo' (lett. 'possiedo [la notizia] saputa' ... Il significato è quello del presente, ma risultato di un fatto anteriore e compiuto.")

[22]Green (1987:265) observes that sentences like *Cibum a servo meo coctum habeo* 'I have food that was cooked by my slave' are seldom found, and he appears to draw the conclusion that the construction as such was already favoring subject coreference:

> "It seems that the pragmatic inference of coreferentiality in structures with no overt agent very quickly led to a grammatical constraint against non-coreferential agentives, which in turn was reinforced by adjustments in word order."

The two views—"a certain lexical binding of subject and object favors the development" vs. "the construction as such already implies the course of development"—are not, of course, mutually exclusive.

[23]Tekavčić (1980:II,227) characterizes this development solely in reference to its result. Referring to his example *Habeo litteram scriptam*, lit. 'I have the letter written', he says that the expression of priorness is foregrounded, and from 'I possess the written letter' the meaning slides to 'I wrote the letter'. ("... l'espressione dell'anteriorità terminata viene nel primo piano, e da 'possiedo la lettera scritta' si passa a 'ho scritto la lettera'"). In the same vein Salvi (1987:230):

> "In the original construction the principal axis of the semantic interpretation implied the subject and the verb *habeo* with its complements. With the semantic emptying of *habeo* this axis is transferred to the direct connection between the subject and the complements of *habeo*. ... Thus the original construction which expressed the possession of the result of an action (the construction pivot was *habeo*) finally signifies the past action itself ...."

longer required, and instead of e.g., *intellexi* 'I have understood' one can also say *habeo intellectum* (Penny 1991:142).

iii. The past passive participle of transitive verbs is derived as a past active participle for intransitive verbs, which hitherto had no past participle.

iv. Just as happened in the case of *esse*, the lexical predicate associated with the forms of *avere* loses its argument structure.[24] Since, as we assume, *avere* develops along the same lines as *esse*, it becomes the tense auxiliary for those verbs that do not take *esse*. From the outset it becomes the default auxiliary verb.[25]

The situation that thus developed, and which is preserved to a large extent in Italian, realizes the principle of conceptual motivation to a large degree. A conceptual category—event, with non-agentive or agent-recessive ("anti-agentive") characteristics—corresponds to a grammatical form, namely, selection of *essere* as tense auxiliary. Conceptual mo-

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Pinkster (1987:212), on the other hand, clearly assumes a phase of variation (although he does not use the term):

> "There must have been some overlap in meaning and/or use between the old forms and the new ones on the basis of which the new forms could take over the functions of the old ones. This overlap can be shown quite easily in the case of the new PERFECTUM forms."

In reference to the example *Habeo cibum coctum* (which I have borrowed from him), he says,

> "... in certain circumstances *coxi cibum* could be interpreted as 'and as a consequence the food is now cooked (and no longer raw)': *cibus coctus est*. Such a result interpretation is especially possible with terminative (or: resultative) verbs ... In specific contexts the *habere* + PPP and the normal perfect may be used, and the choice is one of style."

[24]According to Salvi (1980:186, 198), in Old French of the thirteenth century *avoir* is still a MAIN verb that governs an XCOMP. Unfortunately we cannot go into further detail here concerning chronological progression in the development of Romance auxiliary syntax.

[25]Unlike this analysis, which assumes that *esse* is prior to *habere* as a tense auxiliary, Vincent (1987:244) reconstructs the process as simultaneous for both auxiliaries. He derives modern auxiliary selection from the valency of Latin *habere* and *esse*:

> "The process of grammaticalisation ... was conditioned by the valency structures associated with *habere* and *esse*. The former took a Locative in the subject function and a Patient in the object function; the latter a Patient in the subject function. Hence, they would be appropriate vehicles for the formation of periphrases with different classes of verbs, depending on the latters' valency values. In this way, we arrive at the division of the lexicon in terms of auxiliary assigment which is characteristic of modern Italian, and, rather residually, of modern French."

However if the subject of *habere* is a locative, which is a defendable view, why did *habere* develop into the default auxiliary?

tivation did not, however, entirely gain the upper hand. The cases mentioned above, in which non-agentive verbs select *avere* and *essere* is generalized to all reflexive verbs, rests on the competing principle of formal homogeneity. Verbs like *dimenticare* 'to forget', *perdere* 'to lose' etc. have joined the majority of other verbs, giving up their claim to *essere*. The generalization to *essere* for all reflexives displaces the selection criterion from unagentivity, a category of meaning that was not always clearly evident, to the reflexive voice, a consistently decidable syntactic property.

French shifted the relationship between the two principles of learnability in favor of formal homogeneity. The generalization of *être* to all reflexive verbs, which follows from this principle, has been retained fully, while the role of meaning in selecting between *être* and *avoir*, as imposed by conceptual motivation, has been lexically coded and greatly reduced, given the small number of remaining *être*-verbs.

At the end of this road, Spanish has applied the principle of formal homogeneity with radical vigor, eliminating *ser* 'to be' as a tense auxiliary altogether.[26] *Habere* becomes the sole tense auxiliary. Furthermore, in its development it parts ways with the main verb *habere*, whose semantic predicate HAVE comes to be expressed not by *haber* but by *tener*, the outgrowth of Latin *tenere* 'hold'.[27]

The principle of formal homogeneity also prevailed in those Italo-Romance dialects where *esse* became the tense auxiliary of all verbs (Tuttle 1986:267), or where *esse* and *habere* merged into one suppletive paradigm (Tuttle 1986:270).

5.4.4 The Semantics of the New Tenses

According to Tekavčić (1980:II,227), the development of the new compound tenses re-imposed a distinction that was lost in Latin, namely the opposition between a tense that characterized an event simply as being situated in the past and an event immediately preceding the present and, at least its effects, lasting into the present. If true, this would mean that a further displacement in favor of the conceptual motivation principle took place in the Romance tense system. The new formal system

[26]The reconstruction proposed here implies that the compound tenses with *esse* arose earlier (or at least not later) than those with *habere*. This stands in contradiction to Tekavčić (1980:II,231), who sees the *esse*-tenses as more recent, one reason being that they are restricted geographically to the central Romance area. At least this particular justification is false—Spanish developed compound tenses with *esse/ser* and did not lose them until the seventeenth century (Penny 1991:142).

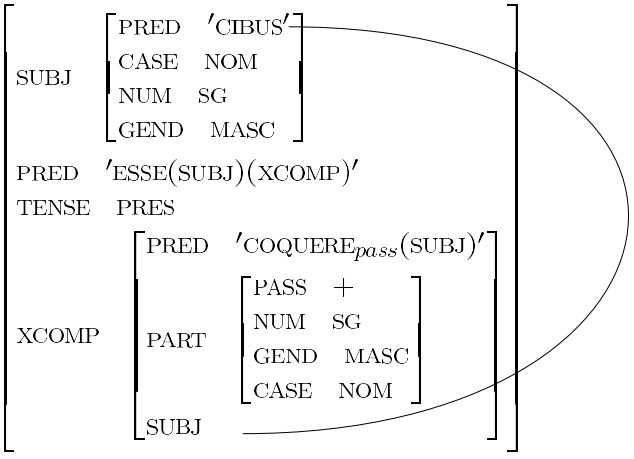
[27]Then again, *tener* participates in an aspectual periphrasis, analogously to the one from which the compound tenses with *habere* arose (cf. Penny 1991:141), and in Portuguese this aspectual periphrase has returned to being a compound tense, as in *tenho feito* 'I have made': the development repeated itself.

with its co-existing simple and compound tenses would correspond to a conceptual distinction. To be sure, however, the opposition proposed by Tekavčić is more valid for a reconstruction of historical circumstances than for the very complex and—in Romance linguistics—controversial state of affairs that exists today.

5.4.5 *Esse* as Passive Auxiliary

The development of the copula *esse* as an auxiliary starts from its use with an XCOMP, realized as a passive participle, as in (37a) and (37b).

(37) a. Cibus coctus est.
food-M-SG-NOM cook-PAST-PASSIVE-M-SG be-PRESENT
'The food is cooked.'

b.


The evolution comprises the following steps:[28]

[28]By contrast, Tekavčić (1980:II,247) assumes that the *esse*-passive arose from the analytic passive of Classical Latin. Taking the example *Porta clausa est*, he explains that this sentence has three readings:

> "1) 'la porta è chiusa' (stato; qualità, clausa = aggett. predic., 2) 'la porta è stata chiusa' (pres. anteriore, cioè perfetto), 3) 'la porta fu chiusa' (aoristo)."

This brings him to postulate a displacement of temporal reference (p. 248):

> "... è stata raggiunta la concordanza tra il livello temporale dell'ausiliare e quello dell'intera perifrasi: se l'ausiliare è al presente (SUM), anche tutta la perifrasi appartiene al presente (PORTATUS SUM)".

Accordingly, there must have been two tense displacements in the development of Romance auxiliary syntax. One, in the tense auxiliaries, was from the present to the perfect, and conversely, the other was a displacement from perfect to present for the passive auxiliary. Such complicated assumptions are superfluous if, as proposed here, we derive the passive auxiliary directly from the copula. Penny (1991:137) proposes a reconstruction that similarly takes the classical passive perfect as its

a. The passive participle loses its aspectual perfective nuance; (37) can mean not only 'the food is cooked' but also 'the food is being cooked'.
b. *Esse* retains its original function as copula. Because passive participles can also be used as adjectives, the new *esse*-passive is inherently ambiguous. The languages under discussion react to this situation by denying the new, formally unclear *esse*-passive some of the functions that the Latin passive had. Where Latin used the impersonal passive (*dicitur* 'it is said'), the reflexive construction appears (Italian *si dice* 'it is said') or a construction with an impersonal pronoun (French *on dit*).

5.4.6 Other Passive Auxiliaries

The later Italian—and not general Romance—development of *venire* 'to come' into a passive auxiliary from a verb of motion may also be a reaction to this situation (cf. Kontzi 1958, Vincent 1987:249, Giacalone Ramat 1995:11ff). The fact that *venire* (like the deontic *andare*) is blocked for the compound tenses is a result of the later development: the innovation has (not yet?) spread to the entire paradigm (cf. also Vincent 1987:249). The situation can be more precisely characterized as follows: the functional paradigm of the tense system splits into two formal paradigms, one for the simple and one for the compound tenses. The *venire*-passive has established itself in the formal paradigm of the simple tenses, but not in that of the compound tenses. Here a peculiarity of the formal homogeneity principle surfaces—it forces the generalization of innovations, but it tends to respect the boundaries of already existing paradigms.

5.5 Summary and Outlook

I have attempted to present the development of Romance auxiliary syntax in such a way that, first, the facts to be explained are given a consistent and formalizable treatment, and second, that the explanations of the processes make reference to variation and changes in the lexicon. Variation was assumed to be present at two levels—locally, at the level of language use, and globally at the level of competing principles of learnability. The particular case of language change studied here suggests that

starting point and thus must postulate a tense displacement. However, he attributes a similar influence to copula sentences with an adjectival complement: "Thus AMATUS EST (by comparison with CARUS EST 'he is beloved', etc.) was assigned a present-tense value ('he is loved') . . .." We take the differing view that the passive participle, in the frame of its allowed synchronic variation, could be used at any point as an adjective, so that the finite verb in *amatus est* could also be the normal copula, and that the sentence has a reading in which the tense is the present.

local variation is more responsible for innovations, while global variation accounts for the further fate of the innovations.

The two types of variation discussed in this study have not been equally well understood in the literature. Variation conditioned by language use is assumed in most accounts of the facts that have been mentioned here, even in those cases when this does not take place explicitly. My assumption that global structures vary under the influence of conflicting principles of learnability is less commonplace and could only be worked out in a limited way in this paper. It concerns aspects of linguistic change that have been studied in the frameworks of classical language typology and in naturalness theory. If the proposed assumption of variability conditioned by learnability should prove tenable, it would represent progress relative to these other approaches, for we would no longer be confronted with the undoubtedly impossible task of explaining change in linguistic structures from just these structures themselves.

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6

Preferred Word Order and the Grammaticalization of Associated Path

JANE SIMPSON

6.1 Introduction

Some Australian languages such as the Pama-Nyungan languages Warlpiri and Warumungu present an apparent paradox.[1] They have free word order, and yet they have rich morphological structure which shows evidence of grammaticalization, that is, of bound morphemes which appear historically to have been free words. For these free words to become bound morphemes, there must have been a stage at which the free words were adjacent to the words to which they then became affixed. That is, there must historically have been some preferred sequences of words. In this paper I examine an instance of this grammaticalization, the development of a category of "associated path"[2] in some Pama-Nyungan languages.

[1]This paper arises from joint work with Harold Koch, and from two ARC funded research projects, one with Luise Hercus, Harold Koch and David Nash, and the other with Toni Borowsky and Mark Harvey. Earlier versions were presented at the Top End Linguistics Circle, Batchelor, August 1996, the LFG Workshop in Grenoble, August 1996, and the Australian Workshop, University of Melbourne, May 1997. I am grateful to my fellow researchers, and to Farrell Ackerman, Avery Andrews, Peter Austin, Miriam Butt, Patrick McConvell, and David Wilkins, for useful discussion. I thank Nigel Vincent for detailed and helpful comments on an earlier draft.

[2]That it is a grammatical category in Arrernte is demonstrated in Wilkins (1991).

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

The associated path category creates a single complex verb which expresses both an action or event and another event involving motion (or direction) of one of the participants. Examples follow from Warumungu,[3] a Pama-Nyungan language spoken around Tennant Creek in the Northern Territory.[4]

(1) a. **Juku-nturrarni**=angi angkinyi kina ngurraji kina?
carry-THITHER.PAST=2S your TO camp to
'Did you take it to your home?'

b. **Juku-ntukarni**=ajjul ngurraji kina.
carry-HITHER.PAST=333S camp to
'They (more than two) brought it here to camp.'
[Simpson, to appear]

The ending *-nturrarni* on the verb 'carry' in (1) shows that carrying took place in a direction away from the speaker (or deictic centre), while *-ntukarni* shows that carrying took place in a direction towards the speaker. The time of this movement or direction relative to that of the main event may be specified. It may, as in (1), be concurrent with, or overlapping, the main event ('do on the way, do while going along'), or may precede it ('do after movement, go and do'), or follow it ('do

[3]Material on Warumungu comes from Hale (1959), Heath (1977), Simpson (1998) and my fieldwork.

[4]Abbreviations used in this paper are as follows: 1 = first person, 12 = first person inclusive, 2 = second person, 33 = third person dual, 122 = first person inclusive plural, 333 = third person plural, ABS = absolutive case, AGENT = derivational suffix, ALONG = case, AS.IF = propositional particle, AT = case, AUX = auxiliary, BUT = conjunction, CAUSE = causative, DAT = dative case, dative auxiliary clitic, ERG = ergative case, EUPH = euphony clitic, FUT = future auxiliary, HAVING = derivational suffix, HITHER = inflection or clitic, IMPER = imperative inflection, IMPERF = imperfect auxiliary clitic, IMPLSS = implicated clause same subject inflection, INCEP = inceptive inflection or derivational suffix, MANY = derivational suffix, NOM = nominative case, NOW = clitic, NPST = nonpast inflection, OBJCOMP = complementizer with object control, O = object, OTHER = derivational suffix, PAST = past inflection, PLS = plural subject, POT = potential auxiliary, PPL = participle, PRES = present auxiliary clitic, PURP = purposive case, S = subject, SAME.SUBJECT = complementizer with subject control, SELF = clitic, SEQ = sequential complementizer, SO = auxiliary, STILL = clitic, TAM tense/aspect/mood, THITHER = inflection or clitic, USED.TO = auxiliary. '-' indicates morpheme boundary. '.' indicates default meanings, or meanings in unanalysable portmanteau morphemes, or as a substitute for a word space in an English gloss for a single Warlpiri morpheme. '=' indicates clitic boundary. The source of example sentences is given in square brackets at the end of each. H59 refers to Ken Hale's 1959 fieldnotes, HN to his 1966 fieldnotes, Darby to texts provided by Darby Jampijinpa. (Copies of this material are available at the Australian Institute of Aboriginal and Torres Strait Islander Studies). "Kuruwarri" refers to Warlukurlangu Artists (1992). "Warlpiri Dictionary" refers to Warlpiri Dictionary Project (1997). [ML:RJG/JNE:1976] refers to Mary Laughren's fieldnotes; [JS:JNW:1987] to my fieldnotes. Other sources are in the bibliography.

before going, do and go'). Many central and southern Australian languages have such a category, which ranges in expression from inflection to derivation to compound to, in some languages, free verbs.

Koch (1984), Tunbridge (1988), Austin (1989, 1997) and Wilkins (1991) have argued for related Pama-Nyungan languages that the grammaticalization of the category of associated path often develops from the compounding of a participle with a finite motion verb. This results in change in argument selection and in assignment of the SUBJECT's case from assignment by the finite verb to assignment by the participle. In Warlpiri, the Western neighbour of Warumungu, this has happened at least twice in the past, resulting in compounds involving verbs of motion, and a derivational affix derived from the verb *ya-ni* 'to go', *-i-ni* 'start to do'. Some semantic evidence suggests that a construction involving a participle with a complementizer suffix indicating 'after doing X' is following the same path, and thus provides a synchronic model for several stages of the path to grammaticalization.

The question arises as to how could such grammaticalization take place? The first problem has to do with word order; in a free word order language how could the participle and verb get to be together enough for grammaticalization to take place? The second problem has to do with the path of grammaticalization. Hopper and Traugott (1993) have proposed a cline for apparently similar grammaticalizations in other languages:

> *full verb* > *(vector verb)* > *auxiliary* > *clitic* > *affix*
> (Hopper and Traugott 1993:108)

However, the Hopper and Traugott stages conflate morphological form and argument structure properties. A term like "affix" or "clitic" is purely a label of morphological form. A term like "auxiliary" may refer to a special syntactic subclass of verbs (as in English) as well as to argument structure properties of transparency (does the whole clause show the case assigning properties of the verb acting as the complement of the auxiliary?) (Rosen 1997, but see Butt 1999 for a distinction between light verbs and auxiliaries). Warlpiri and Warumungu do not have, synchronically, auxiliaries or light verbs as free words. In fact, more generally, Warlpiri and Warumungu do not allow arguments to be realized by verb phrases or clauses. We must therefore look elsewhere to find a path from "full verb" to morpheme. We must in fact distinguish, as Butt (1997a) points out, between what happens during reanalysis at different levels of the grammar—what happens in the semantics and what happens in the morpho-syntax.

In this paper I shall first illustrate the cline of grammaticalization of associated path in the morphology. Then I will describe a synchronic participle-verb sequence which I believe provides a model for the move from phrase sequence towards word. I will then outline the conditions that have to be satisfied in different parts of the grammar (constituent structure, functional structure and argument structure) for grammaticalization to take place. My focus is on the path that leads to such grammaticalization, and in particular what Lehmann (1995) has called the "point of shift" where syntactic reanalysis takes place.

6.2 Morphological Expression of Associated Path

6.2.1 Inflectional

In Warumungu, concurrent associated path is so deeply embedded in the language that it has become inflectional. Tense, aspect and associated path form portmanteau affixes. The forms of these endings are determined by conjugation. Thus the ending *-nturrarni* in (1a) is a portmanteau of direction away from deictic centre, past tense and punctual aspect of the L conjugation. Table 1 shows part of the paradigm for a verb of the Y conjugation, in which *-njirrarni* is the correspondent of *-nturrarni*. TAM stands for tense, aspect and mood.

TAM	NEUTRAL	HITHER	THITHER
FUTURE	pari 'will get'	pari-nji.rra 'will bring'	para-nji.(rr).karl 'will take'
PRESENT	paranjan	pari-nji.rr.apan	pari-nji.rr.arnta
PAST PUNCTUAL	parinyi	pari-nji.(rr)ka.rni	pari-nji.rr.a.rni
PAST CONTINUOUS	parinjina	pari-nji.rr.ajina	*no attested form*
ADMONITIVE	parangkurn	pari-nji.(rr).pun.kkurn	pari-nji.rr.arn.kkurn
IRREALIS	parangara	pari-nji.(rr).pun.ngara	pari-nji.rr.arn.ngara

TABLE 1 Tense and Associated Path in Warumungu (Y Conjugation verbs)

Column 1 represents the neutral form, used when the speaker does not wish to specify the direction of the action. Columns 2 and 3 represent motion towards the deictic centre HITHER, and away from it THITHER. The endings differ according to tense, aspect and mood (TAM), and there

are no obvious morphemes marking HITHER or THITHER. Moreover the endings differ according to conjugation,[5] as Table 2 shows.

There seems little doubt that the Warumungu HITHER and THITHER endings are inflectional, given that they differ according to tense, aspect and mood, attach to different stem forms of the verbs, have different forms depending on the conjugation of the verb, and cannot be linked to a single element across conjugation, tense, aspect and mood.

Ending	0 conj.	Y conj.	L conj.	R conj.
PRESENT	apan	paranjan	pakanta	kuranta
	'going'	'getting'	'spearing'	'running'
PRESENT	apirrapan	parinjirrapan	pakintirrapan	kurarrapan
HITHER	'coming'	'bringing'	'spearing	'running
			this way'	this way'

TABLE 2 PRESENT HITHER in different conjugations

However, the forms contain intriguing hints of origins in free words. For example, in Table 2 it seems that the *-apan* ending of PRESENT HITHER is identical to the PRESENT *apan* 'go', a finite form of a free verb in modern Warumungu. While no other ending of the HITHER and THITHER set corresponds to a free verb, most of the endings are relatable to TAM endings on ordinary verbs of different conjugations.[6] Following the verb stem are formatives *-nji-, -nji-rr, -nti-* and *-rr-*, the choice of formative being determined by conjugation. Of these, the formative *-nji-* found in the Y conjugation has the same shape as one allomorph of the synchronic Warumungu morpheme *-nji* ∼ *-ji* which nominalizes verbs creating a kind of participle. That is, most of the HITHER and THITHER forms appear to consist of "base-ligative-ending". Some appear to contain old participles followed by TAM endings, and in one case by a finite verb.

The suggestion that the source of associated path inflection is an old participle with a suffixed finite verb is strengthened by the existence of a third set of associated path endings, the INCEPTIVE endings, given in Table 3.

[5]Warumungu has four major conjugations, named from the form of the FUTURE ending: 0, L, Y and R.

[6]For example the *-arnta* of *pari-nji.rr.arnta* THITHER is identical to the present tense of L and R conjugations. The retroflex /rnt/ is derived by an automatic phonetic change following the tap /rr/.

Tense/Aspect/Mood	INCEPTIVE
FUTURE	para-nji.(rr).parti 'will go off and get'
PRESENT	para-nji.(rr).parta-n
PAST PUNCTUAL	pari-nji.(rr).parti-nyi
PAST CONTINUOUS	pari-nji.(rr).parti-na
ADMONITIVE	pari-nji.(rr).parta-kurn
IRREALIS	-(rr)parta-ngara

TABLE 3 Warumungu INCEPTIVE endings

These forms consist of: "base.verb - ligative[7] - *parti* - tense inflection". *parti-* and the tense/aspect endings are identical to the free verb *parti-* 'getting up, arising' and its tense/aspect endings. This suggests that the INCEPTIVE was created by compounding a free motion verb with the stem of another verb plus the ligatives *-nji-* and *-rr-*. The formative *-rr* (which is optional for many speakers) is not synchronically analysable.[8]

Using Lehmann's[9] (1995) criteria for grammaticalization we can see that many hold of the Warumungu associated path inflections:

(i) Phonological substance has been lost—it is no longer possible to find sources for most of the HITHER and THITHER forms. There is even synchronic phonological attrition with the loss of /rr/ for some speakers preceding a consonant.

(ii) There is a generalization of meaning—for *parti-*—from 'arise, set off' to 'start an action'.

(iii) Bondedness is strong—nothing intervenes between the old participle and the verb stem.

(iv) Paradigmatic cohesion holds in part—there appear to be just the four options: NEUTRAL, HITHER, THITHER and INCEPTIVE. However, it is a moot point whether the NEUTRAL form has a single meaning. The NEUTRAL form of a motion verb most likely means that the deictic centre has no relevance to the path; while the NEUTRAL form of other verbs is used when the speaker is not focussing on motion or path.

So, the Warumungu HITHER and THITHER forms, and to a lesser extent the INCEPTIVE, represent a late stage of grammaticalization of the associated path category, in that the endings are portmanteaux of

[7] *parti-* attaches to one of four ligatives *-rr-*, *-rri-*, *-nti.rr-* and *-nji.rr-* depending on the conjugation of the base verb. Of these, only the form *-nji.rr-* bears a resemblance to the synchronic Warumungu participle form *-nji* ~ *-ji*.

[8] Historically it may be related to the ligative *-rr* found in the neighbouring Arandic language Kaytetye on intransitive participles (Koch 2000).

[9] I thank Harold Koch for discussion of this.

direction and TAM. Associated path has become part of the inflectional system.

6.2.2 Compounding

In Warlpiri, the category of associated path has not been grammaticalized as much as in Warumungu. It does not form part of the inflectional paradigm. Instead, associated path is expressed on verbs in two main ways, a productive process of compounding, and a single derivational suffix. I discuss each in turn.

Existing verbs of motion are productively compounded with participial forms of verbs, illustrated in (2).

(2) a. Lulju ka=lu **kiji-kiji-rninja-parnka**
heap.ABS PRES=333S throw-throw-PPL-run.NPST
yurrampi-rli.
honey.ant-ERG
'The honey-ants move back and forth making piles of dirt.'
[Warlpiri Dictionary: lulju]

b. Yapa-ngku ka=jana **mirriki-nya-nja-parnka-mi**
person-ERG PRES=333O check-see-PPL-move.fast-NPST
ngurra-kari-kirra jijanu=rlangu.
camp-OTHER-TO visit=FOR.EXAMPLE
'A person is all the time going to another camp to see them—like to visit them.' [Warlpiri Dictionary: mirriki-nyanyi]

c. Pirlijimanu-rlu wiyarrpa **yuka-nja-yirra-rnu**
policeman-ERG poor.thing enter-PPL-put-PAST
'The policeman put the poor fellow (in jail).'
[Warlpiri Dictionary: yirrarni]

The verb in (2a) parallels morphologically the INCEPTIVE in Warumungu. *kiji-kiji-rninja-* consists of the reduplicated transitive verb *kiji-* 'throw' followed by a non-finite suffix *-rninja-*, compounded with an intransitive finite verb, *parnka* 'run'. In (2b) *nyanja* consists of the verb stem *nya-* followed by a non-finite suffix *-nja*. The allomorphy *-nja, -ni.nja*, or *-rni.nja*,[10] depends on the conjugation of the verb. The non-finite suffix behaves like the Warumungu participle suffix *-nji-*. It creates a form of the verb which must be followed by an ending, either a complementizer suffix, e.g. *maninja-karra* 'get-PPL-SAME.SUBJECT' 'while getting', or a derivational suffix, as in *ngarri-rninja-panu* 'growl-PPL-MUCH' 'bad mouth, growler', or a finite verb or bound verb. Following a tradition in studies of Warlpiri grammar I call the verb plus non-finite suffix the "participle", and gloss the suffix as PPL.

[10]The *-ni* or *-rni* is identical to the nonpast tense of the verbs concerned.

Semantically the verb *kiji-kiji-rninja-parnka* expresses a complex event consisting of overlapping subevents of moving quickly and taking away. The complex verb has the case-frame of the transitive participle verb *kiji-* (shown by the ERGATIVE case on the SUBJECT *yurrampi-rli* and by the presence of an ABSOLUTIVE OBJECT *lulju*), and not that of the intransitive finite verb *parnka* (whose SUBJECT would normally have ABSOLUTIVE case).

If however the finite verb is transitive and the participle intransitive, as in (2c) *yuka-nja-yirra-rni* 'enter-PPL-put-NPST' 'cause to enter, imprison', then the SUBJECT has the ERGATIVE case required of its SUBJECT by the finite transitive verb 'put' and not the ABSOLUTIVE case required by the intransitive participle 'enter into' of its SUBJECT. Thus if an argument requires ERGATIVE case, this requirement takes precedence regardless of whether the argument belongs to the participle or to the finite verb. The relevance of the finite verb to the combined argument structure is also shown in (2b) which includes a directional argument *ngurra-kari-kirra* added by virtue of the motion meaning of the finite verb *parnka*.

Thus, the number of arguments and their cases are determined jointly by the combination of the argument structures of the participle and the finite verb. However, morphologically the form of the TAM ending (zero in (2a) and *-mi* in (2b)) is determined by the finite verb *parnka*, (*kiji-* and *nya-* belong to different conjugations; the nonpast tense of *kiji-* is *kiji-rni*, and of *nya-* is *nya-nyi*).

When such participles are compounded with motion verbs the whole sometimes undergoes meaning extensions away from plain associated path or motion. For example, participles combined with *ya-* 'go' can be used for extent as in (3a) or for aspect (3b).

(3) a. Pirli ka **parnta-parntarri-nja=mpa=ya-ni.**
hill PRES crouch-crouch-PPL=ALONG=go-NPST
'The hills stretch out in front.' [H59:798os]

b. Ngula-ngurlu=ju ka=lu **manngi-nya-nja-ya-ni=lki**
that-from=EUPH PRES=333S understand-PPL-go-NPST=NOW
yuwurru-rlu=lku.
initiate-ERG=NOW
'Then the newly initiated men understand them (rituals) and remember them.' [HN1567]

So, while the form "participle-finite verb" is that of a productive compound, the meaning is sometimes not transparently derivable from the meaning of the parts.

The compounding structure "participle-finite verb" is not unique in Warlpiri; it resembles the common preverb-verb structure. Combining preverbs, an open class (*mirriki* in (2b), *manngi* in (3b) and *jurnta* in (4)), with verb roots, a closed class, is the major way in Warlpiri of expressing the ideas expressed by verbs in English. The meanings of preverbs cover a wide range, from manner to direction (Nash 1982).

(4) M: Yuwayi— Kapi=rna=jana **jurnta-ya-ni** wurnturu.
Yes FUT=1S=3SO away-go-NPST far
'Yes—I'll go far away from them.' [H59:7.95]

In what follows I shall draw parallels between preverbs and participles, because the preverb-verb structure provides a useful model for lexicalization.

The first point to note is that the associated path participle-verb compounds in Warlpiri vary from being tightly bound to being quite loosely bound, as I show below.

A primary signal of tightness of boundary is the fact that in Warlpiri the participle form of a verb cannot appear on its own. A form like *maninja-parnka-mi* 'go and get' consists of *maninja-* 'getting' and *parnka-mi* 'move fast'. Phonologically there is no reason why *maninja-* could not be a prosodic word, since it is more than one syllable long and ends in a vowel. But, as mentioned above *maninja-* cannot appear in isolation. Moreover, the order is fixed; *parnkami maninja* is not possible. In this respect it differs from preverbs in Warlpiri, many of which normally precede the verb, but can follow it, as in (5), in which the preverb *jurnta* seen in (4) follows the verb.

(5) **Ma-ninja-parnka-ja**=jala=lpa=jana **jurnta—**
get-PPL-move.fast-PAST=indeed=IMPERF=3SO away
wijipalka-rlu.
thief-ERG
'He went and really got it all from them—the thief.'
[Warlpiri Dictionary: jurnta]

For the vast majority of participle-verb compounds, the meaning of the whole is predictable from the meanings of the parts. However, there is some fluctuation as to the relation of the motion to the event, or indeed as to whether there is only direction, and no motion. We have seen that when the participle is compounded with *ya-ni*, 'going' there is often the meaning of "accompanying motion". But in some of the constructions with other finite verbs of motion, the participle shows not accompanying motion but rather the end state of an argument resulting

from that motion. Thus in (6) *parntarri-* denotes the bent state of the SUBJECT resulting from the downward motion of *wanti-*.

(6) Parntarri-nja-wanti-mi
crouch-PPL-fall-NPST
'He is stooping.' [Nash 1982]

Likewise a transitive verb like *yirra-rni* 'put' in a compound *nguna-nja-yirra-rni* 'lie-PPL-put-NPST', 'put someone down to sleep' has as its end point the state of the OBJECT resulting of the motion. That is, there is not a single consistent interpretation of the meaning resulting from compounding a participle with a motion verb.

The construction shows signs of becoming a regular morphological construction, so that it can incorporate elements which have no synchronic Warlpiri counterparts. For example, the regular Warlpiri verb for 'to return' is *kulpa-mi*. The Arandic form is *alpeme* (itself cognate with the Warlpiri free form). It is used in associated motion constructions in Arandic for meanings like 'do coming back' (Wilkins 1991, Koch 1984). It is also found borrowed into Warlpiri, as in (7). The form *yalpi-mi* does not occur in isolation.

(7) a. Nguna-nja-**yalpi-**ja=lu.
lie-PPL-?return-PAST=333S
'They went back and lay down.' [Warlpiri dictionary: ngunami]

b. nya-nja-**yalpi-**mi
see-PPL-?return-NPST
'return to some place and see something'
[Warlpiri dictionary: nyanyi]

So, the fixed order participle-verb, the fact that the participle cannot appear in isolation, the occasional apparent non-compositionality of meaning, and the incorporation in the verb position of elements that are not freestanding verbs in Warlpiri, all suggest a relatively tight boundary between the participle and the verb.

However, even though the participle cannot appear on its own, in some respects the morphological boundary between it and the verb is loose. This is shown by the appearance of clitics between the participle and the verb. Warlpiri has several types of clitics, all enclitic. One class, directional clitics, has the property that they can follow the tense endings on finite verbs, *ya-ni=mpa* 'go-NPST=ALONG', or preverbs, *pina=rra ya-nu* 'back=THITHER go-PAST', or participles. In a preverb-verb structure, directional clitics are free to attach to the preverb or the verb, but apparently not to both. Thus they attach to verb constituents, and either part of the preverb-verb constituent will do. The same is true of participle-

verb structures, as in (8a), where the directional clitic *=rra* THITHER attaches to the verb, and (8b), where the directional clitic *=mpa* ALONG attaches to the participle.

(8) a. Winpirli-nja-ya-nu=rra.
whistle-PPL-go-PAST=THITHER
'He went whistling all the way.' [H59:1079os]

b. Pirli ka parnta-parntarri-nja=mpa=ya-ni.
hill PRES crouch-crouch-PPL=ALONG=go-NPST
'The hills stretch out in front.' [H59:798os]

Another type of clitic are the auxiliary (AUX) clitics, much discussed in the literature on Warlpiri (Laughren 1982, Hale 1982 and 1983, Nash 1986, Simpson 1991, Hale et al 1996). The auxiliary constituent is a sequence of particles and clitics which carries information about grammatical functions, tense, aspect, complementizers and propositional information such as negation. It must occur in first or second position in the sentence. Thus the AUX *ka* follows *pirli* 'hill' in (8b). Depending on its content and phonological shape, the AUX must be cliticized.

The positioning of the AUX has been used as a test of constituency in Warlpiri; elements that precede the AUX within the same clause form a single constituent (Hale 1982). Both preverb-verb and participle-verb structures can precede the AUX, showing that they are treated as a single constituent, as a complex verb or verb phrase. However, interestingly, the AUX can cliticize to the first element of the complex verb, whether it be preverb (in (9a) the AUX clitic *=jana* attaches to the preverb *jurnta*) or, less commonly, participle. (9b) is a rare example showing not only a directional clitic *-rni* HITHER, but also an AUX clitic *-lpa* IMPERFECT intervening between the participle and the verb of motion.

(9) a. **Jurnta**=jana **wuruly-ka-ngka** kulu-parnta panu-ku.
away=3330 secret-carry-IMPER anger-HAVING many-DAT
'Take her away from the cheeky ones.' [H59:7.91]

b. Nya-nja=rni=lpa=ya-nu.
look-PPL=HITHER=IMPERF=go-PAST
'He would go along looking.' [Kuruwarri: Door 8 p.44]

In sum, the fixed order "participle-verb" (in contrast with the reversal possibilities of "verb preverb") and the shift of case-assignment from the finite verb to the combination of participle-verb indicate that the combination is a single word. Moreover, while compounding of participle and motion verb is productive, and the meaning normally compositional, specialized meanings have been acquired in some instances of these structures, suggesting the start of attrition of the boundaries be-

tween the participle and verb. However, the ability of clitics, in particular the AUX clitics whose position is syntactically determined, to intervene between participle and motion verb suggests a retention of their origin as separate words.

6.2.3 Derivation

While associated path is commonly expressed through compounding a finite verb of motion with a participle as just discussed, or through preverbs as *jurnta* 'away' in (4), or through directional clitics such as *-rni* HITHER, *-rra* THITHER and *-mpa* ALONG in (8) and (9), Warlpiri has another, more grammaticalized way of expressing associated path. This is the INCEPTIVE, a derivational suffix which appears originally to have been a compound of participle and the verb 'go' *ya-*. It expresses the idea that the event denoted by the verb is initiated, probably by some movement. Examples follow.

(10) a. Jinta-ngku ka=jana yangka yapa-ngku wirrpiyi-rli
one-ERG PRES=3330 the person-ERG enlisting-ERG
yaja-rninji-ni.
recruit-INCEP-NPST
'One person goes enlisting support asking them to join in with him.' [HN:0388]

b. Kuyu=lpa **luwa-rnunju-nu**,
game=IMPERF shoot-INCEP-PAST
ka-ngu=rnu=lpa.
carry-PAST=HITHER=IMPERF
'He went and killed some animal and brought it back.'
[Warlpiri Dictionary: luwarni]

The INCEPTIVE allomorphs *-rninji-*, (10a), *-rnunju-*, (10b) and *nunju-* (not illustrated) are identical to the allomorphs of the participial suffix *-rninja-*, *-ninja-* -and *-nja-* bar the final vowel. The choice of allomorph is determined by the conjugation of the verb stem in exactly the same way as the allomorphs of the participle ending are determined. The new verb belongs to the same conjugation as the verb *ya-* -'going', a small conjugation whose only other member is the causative *ma-*. Following Nash (1982, 1986) I propose that the INCEPTIVE represents an old compounding of participles with the verb *ya-*, identical to that which we have seen in the previous section. However, the participle and the verb *ya-* have undergone a phonological change of the form: *-nja-ya-* ⟶ *-nji-*, which obscures the compounding boundary.

The INCEPTIVE suffix *-nji-* is sufficiently tightly bound that the form undergoes regressive vowel assimilation (*-rnunju-*) which otherwise ap-

plies only to verbs and their inflections, and to a limited set of words (Nash 1986). This assimilation is blocked by the vowel /a/, as shown in the regular compounding with the verb *ya-ni*, illustrated in Table 4.

larra[11]-pant*i-rni*	split-spear-NPST 'he's splitting it by poking it'
larra-pant*u-rnu*	split-spear-PAST 'he split it by poking it'
larra-pant*u-rnunju-nu*	split-spear-INCEP-PAST 'he went and split it by poking it'
larra-panti-*rninja-ya-nu*	split-spear-PPL-go-PAST 'he went along splitting it by poking it'

TABLE 4 Comparison of INCEPTIVE derivational suffix with compounding with *ya-ni*

Another property of the INCEPTIVE which indicates tightness of boundary and the start of morphological reanalysis is change in inflectional allomorphy. Some speakers use for the INCEPTIVE IMPERATIVE a third conjugation IMPERATIVE form *-ngka*, rather than *-nta*, the normal fifth conjugation IMPERATIVE of 'go', *yanta*, (Laughren 2000), as in (11).

(11) Jupurrula yangka=lu **ma-ninji-ngka** miyirtingi-ki!
Jupurrurla the=PLS get-INCEP-IMPER meeting-DAT
'Go and fetch that Jupurrurla for the meeting!'
[Robin Granites Japanangka Y 1988, in Swartz 1996]

However, a trace of the INCEPTIVE's origin as a verb remains, in that it attracts stress, unlike other monosyllabic suffixes (Nash 1986).

Thus the boundary between participle and INCEPTIVE has become weakened. We can no longer treat it as a compounding boundary. But it does not form part of a paradigm with the TAM inflections in Warlpiri. Nor does it form a paradigm with other associated path inflections as the Warumungu INCEPTIVE does. I propose that the INCEPTIVE in Warlpiri be treated as a derivational affix.

We have now seen how the category of associated path can be expressed by compounding (as in Warlpiri), by derivation (as with the Warlpiri INCEPTIVE), and by inflection (as in Warumungu). In each case we have seen some evidence for an earlier participle-verb stage. This suggests a historical development:

phrase (participle verb) ... > compound > derivation > inflection

[11] *Larra* is a preverb.

The morphological progression from compound to derivational suffix to inflection is fairly straightforward (Koch and Simpson 1995), involving phonological reduction and morphological change within a word. The semantic change probably involves the same progression that Hopper and Traugott (1993) have posited of semantic shift of the bound verb morpheme from the kind of content and argument structure associated with full verbs to the aspectual and argument structure information associated with auxiliaries. What requires discussion is the hypothesized progression from two syntactically independent words to a single compound word.

6.3 Grammaticalization of Associated Path

We have now seen that there is some blurring of the distinction between phrase and compound in Warlpiri. This provides circumstantial evidence for the historical development of a compound word *Participle-Finite.motion.verb* from a sequence *Participle Finite.motion.verb*. In Table 5 (see also Diagram 2 of Austin (1989) and Figure 3 of Wilkins (1991)), I lay out a proposal for a path for grammaticalization of associated path from a construction consisting of a participle with a "prior action" sense modifying a finite verb of motion. I choose the "prior action" sense because I will discuss a similar construction in Warlpiri.

Stage 1—Participle and Verb: Biclausal

- Language: free word order
- Case of SUBJECT determined by finite verb
- Participle is an ADJUNCT, appears freely in the clause.
- OBJECT of Participle appears in the same phrase as the Participle.

'After yam.ABS digging, I.ABS went to the camp.'
I went to the camp after yam-digging.
I, after yam-digging, went to the camp ...

Two separate events are envisaged:

EVENT 1	TIME j	EVENT 2	TIME i
x does sth	before i	x does sth	at i

Stage 2—Participle and Verb with Preferred Order: Biclausal

- Speakers develop a preference for placing the Participle phrase directly before Verb.

'I.ABS	**after yam.ABS digging**	went to the camp'
	ADJUNCT	HEAD OF S
	...Participle phrase	V .....

Stage 3 [possibly concurrent with Stage 2]

- Speakers develop a second meaning for the position directly preceding the verb.
- In both (I) and (II) the case of SUBJECT is determined by the finite verb, and the OBJECT of Participle appears in the same phrase as the Participle.

(I) Two events, as in Stage 1: maintains biclausality
Participle anywhere '**after yam.**ABS **digging,** I.ABS went to the camp'

(II) One event: shifting to monoclausality
A periphrastic construction develops, losing sequential meaning of participle: Participle directly preceding Verb
'I.ABS **yam.**ABS**-dug went** to the camp'

EVENT	TIME
x does sth &	x does sth (e.g. moves)

Stage 4—Complex Predicate: Monoclausal

- Mirroring the single event meaning, speakers treat the new Participle-Verb construction as a complex predicate, perhaps as V′.
- The case of SUBJECT is assigned by participle and finite verb jointly.
- The OBJECT of Participle appears in the same phrase as the Participle.

'I.ERG **yam.**ABS **dug went** to the camp' [Participle V]V'

Stage 5—Morphological Word

- Boundary between Participle and V is weakened so as to become a single verbal word.
- OBJECT is now free to move anywhere.
- The single verbal word is transitive, having the arguments of both the motion verb (the directional *to the camp*) and the old participle (the OBJECT *yam* and the agentive SUBJECT).
- The meaning of the incorporated motion verb shifts.

'I.ERG **dug-went** yam.ABS to the camp'

TABLE 5 Stages of grammaticalization of associated path from a "prior action" participle

For the stages posited in Table 5 to take place, at least three different processes would need to happen at different parts of the grammar.

i. Constituent structure
The word order of the earlier stage must not only allow the participle to precede the finite verb but also must make this common enough that compounding is likely to happen.[12]

ii. Transition from syntax to morphology
There must be an easy transition from a sequence of free words X Y with particular grammatical functions to a sequence of morphemes X-Y. That is, if analogy can be invoked, the transition will be easier than if there are no analogous structures in the constituent structure, functional structure and the morphology. In this case, the compounding structures of the language must permit the structure X-V-verb.inflection.

iii. Argument structure
The language must have means for linking or merging argument structures which allow for the creation of complex predicates (Mohanan 1994, Butt 1995, Alsina 1996). The merger of argument structures in complex predicates then allows a change of case assignment, so that if there's an Agent and an OBJECT, regardless of whether the Agent is provided by the participle or the finite verb, the Agent can be assigned ERGATIVE case. In the compounding structures, the case of the SUBJECT of the sentence is determined by the case of the old participle, if the finite motion verb is intransitive as in (1). In the few cases of compounds with finite transitive motion verbs, then the case of the SUBJECT is determined by the transitive verb as in (2c). However, in a normal clause with a finite verb and a participle, as we shall see, the case of the SUBJECT of the clause is determined by the finite verb—if that verb requires an ERGATIVE SUBJECT, then the SUBJECT of the whole clause is ERGATIVE; if it requires an ABSOLUTIVE SUBJECT, then the SUBJECT of the whole clause is ABSOLUTIVE (Hale 1982).

It would strengthen the plausibility of the proposed path of grammaticalization if a synchronic construction could be found that provides a model for the path. Fortunately there is a participial construction in Warlpiri for expressing prior events which resembles the construction posited for Stage 1 of Grammaticalization in Table 5. This is a construc-

[12]As Nigel Vincent points out, this assumption parallels Fleischman's (1982:119) argument that the development of the Romance future from the auxiliary (for example French *chanterai* '(I) will sing' and Latin *cantare habeo*) requires a period when the auxiliary *habeo* tended to follow the verb.

tion involving a participle inflected with the SEQUENTIAL complementizer suffix -*rla*. It shows a preferred word order, satisfying condition (i), linked with a meaning change (which moves it to Stage 3 of Grammaticalization in Table 5). Moreover the order of the Participle-*rla* and the Verb fits a normal compounding pattern (the preverb-verb structure) in Warlpiri, satisfying condition (ii). Finally, the modifier-head structure of the preverb-verb structure provides the model for argument structure merger needed for satisfying condition (iii). The final part of this paper shows examples from the Karnic language Yarluyandi (spoken well to the south-east of Warlpiri, Austin 1989) that satisfy condition (iii), where argument structure merger has taken place.

6.3.1 The Participle -*rla* Construction

Warlpiri makes much use of subordinate clauses consisting of suffixed participles and their arguments. The inflected participle consists of the verb stem followed by a non-finite (participle) suffix, followed by a complementizer suffix. The complementizer suffix indicates whether the action described by the non-finite verb precedes, or is simultaneous with, or follows the action described by the finite verb[13] (Hale 1982, Simpson 1988), and what controls the SUBJECT of the participial clause.

Thus, in (12) the SEQUENTIAL complementizer suffix -*rla* indicates that the event denoted by the participle clause takes place before the event denoted by the finite verb clause, and that the SUBJECTs of the two clauses are the same.

(12) Yinga=lpa=lu nga-rnu. **Nga-rninja-rla ya-nu**
SO=IMPERF=333S eat-PAST eat-PPL-SEQ go-PAST
wirlinyi=lki
hunting=NOW
'So they'd eat it. Having eaten it he'd go off hunting now.'
[Kuruwarri: Door 10]

I argue that the SEQUENTIAL participle clauses are undergoing a change which may lead to their eventual grammaticalization. They often involve motion subevents, but not necessarily so, and thus they cover a wider range than the associated path constructions examined in previous

[13]This complementizer suffix is probably cognate with the LOCATIVE case ending. Complementizer suffixes also attach to nominals, in which case they often carry the meaning of an action, e.g. *karli-karra* 'boomerang-SAME.SUBJECT' 'while (Subject of main clause) does something with a boomerang'. We might expect to see traces of complementizer inflections such as -*rla* in the compounding structures. It is true that these are not found in Warlpiri. But in Kaytetye Harold Koch (Koch 1984, Koch and Simpson 1995) has found ligatives -*le*-, -*rre*- and -*ye*- in associated motion forms which he traces back to participial endings. A similar origin is likely for the Warumungu ligatives -*rr*-, -*rri*-, -*ntirr*- -and -*njirr*- (depending on the conjugation).

sections. I first describe some properties of the SEQUENTIAL participle clauses before showing how they fit into stages of grammaticalization.

Syntactically, the order of the participle and the finite verb is free, as (13) shows (repetitions found in a conversation).

(13) a. M: Kajika=npa ngaka pina=rni=ya-ni
POT=2S later back=HITHER=go-NPST
warungka-ma-ninja-rla.
deaf-CAUSE-PPL-SEQ
'You might forget all about it later and come back.'

b. M: Kajika=npa **warungka-ma-ninja-rla** ngaka
POT=2S deaf-CAUSE-PPL-SEQ later
ya-ni=rni.
go-NPST=HITHER
'You might forget all about it later and come back.' [H59:7.207]

The participle and its arguments form a single constituent. As such they can precede the AUX, *ka-rna* in (14).

(14) **Mawu ngaja-rninja-rla**=ju ka=rna murrumurru-jarri
urine.ABS excrete-PPL-SEQ=EUPH PRES=1S sore-become.NPST
'It hurts when I urinate.' [Warlpiri Dictionary: mawu]

Semantically, the finite verb can denote motion, as in (12) and (13), or the participle can (15), or neither need denote motion, as in (16).

(15) **Wurnturu wapa-nja-rla**, ngula=rna manu
far go-PPL-SEQ, then-1S get-PAST
jaru-kari=lki.
language-OTHER=NOW
'After going far I got another language.' [Warlpiri Dictionary: jaru]

(16) Kuja=ka=rnalu nga-rni jalangu-rlu=lku **paji-rninja-rla**
which=PRES=122S eat-NPST today-ERG=NOW cut-PPL-SEQ
'which we cut and eat today still.' [Kuruwarri: Door 10]

In (12) and (13) the SUBJECT of *ya-ni* and *ya-nu*, if expressed as a nominal, would have ABSOLUTIVE case, as befits the SUBJECT of a finite intransitive verb. This is shown in (12) by the lack of case-marking on *wirlinyi*, a secondary predicate agreeing with the understood SUBJECT. In (16) the SUBJECT of *nga-rni* 'eat' if expressed as a nominal would have ERGATIVE case, as befits the SUBJECT of a finite transitive verb. This is shown by the ERGATIVE case-marking on *jalangu*, a time expression agreeing with the understood SUBJECT. That is, the case of the SUBJECT of these sentences is determined by the finite verb, and not by the participle.

More than one participle may appear, denoting different but related events:

(17) **Panti-rninja-rla** kala=pala **purra-nja-rla**
spear-PPL-SEQ USED.TO=33S cook-PPL-SEQ
kulpa-ja=rni yijalyi-kirli.
return-PAST=HITHER piece.of.cooked.meat-HAVING
'When the two had speared it (an animal) they would cook it and then come back home carrying the pieces of cooked meat.' [Kuruwarri: Door 2]

Semantically, a sentence with a SEQ participle involves two (or more) events, which are connected, at least sequentially in time. In terms of LFG grammatical functions, the finite verb heads the main clause, and the participle is linked to the main clause as a clausal ADJUNCT, with the SUBJECT of the participle being controlled obligatorily by the SUBJECT of the main clause.

Syntactically, a sentence with a *-rla* participle is biclausal. With respect to the internal syntax of the participle construction, it is well on the way to "desententialization" (Lehmann 1988). First, unlike finite clauses, it cannot have its own AUX clitic. Second, it is rarely accompanied by overt arguments or adjuncts. If they are expressed, they must precede the participle, as in (14) and (15). The OBJECT of the participle is usually not expressed, as in (12) (13) and (17). Third, if both the finite verb and the participle verb are transitive, the OBJECT of the participle is often also understood to be coreferent with the OBJECT of the finite verb, as in (16).

With respect to the distribution of the participle construction, the examples show that the *-rla* participle form appears in a variety of places in a sentence, as one would expect in a free word order language. However, Hale made an important observation about the meanings associated with a particular order of SEQUENTIAL participle and finite verb, namely the order Participle Verb, as in (12) and (17). Hale writes:

(149) c. Kurdu-ngku karnari **wajili.pi-nja-rla**
child-ERG lizard.ABS running.verb-PPL-SEQ
puulymarda-rnu.[14]
catch-PAST
'The child chased the reticulated dragon (lizard sp.) and caught it.'

[14]The glosses have been slightly altered to fit the conventions used in the rest of this paper.

d. Karnta **yuka-nja-rla** wangka-ja
woman.ABS enter-PPL-SEQ speak-PAST
'The woman entered and spoke.'

> ...The pattern represented by (149c-d) above is extremely popular in Warlpiri, particularly where the main and subordinate clauses share all arguments, as in these two sentences. The close succession of infinitive and finite verbs, in that order and without intervening intonational break, achieves an effect which is semantically more closely akin to co-ordination than to subordination. ...Although it is somewhat difficult to make secure judgments on matters of this sort, it is my impression that in usages of the type represented by (149c–d) neither verb can properly be said to correspond to the main assertion of the sentence—rather, the two together co-operate to make a single assertion.
> (Hale 1982:303–304)

That is, it appears that in this order, the participle verb construction is turning into a serial construction, rather than an ADJUNCT HEAD construction. This is the meaning shift posited in Stage 3 of Table 5, in which two events come to be seen as a single event. Such a meaning shift then would allow the participle and verb to merge their argument-structures, so that both act as co-heads of the clause, and thus the original biclausal structure becomes a monoclausal structure (Mohanan 1994, Butt 1995, Alsina 1996).

However, while the sequence "participle-*rla* finite verb" seem to merge semantically, they do not form a single syntactic constituent. This is demonstrated by the fact that they cannot both appear in front of the AUX as a single intonational unit:

*[participle-*rla* finite verb] AUX ...

Nor do the *-rla* participle and the finite verb form a unit for the assignment of case to the SUBJECT of the sentence. They appear to be a serial construction, sharing a SUBJECT, which is assigned case by the finite verb. Functionally, the finite verb is still the head of the sentence. Thus they have not yet reached the point of shift where syntactic reanalysis has taken place. We now investigate the conditions for this point of shift.

6.3.2 Constituent Structure and Functional Structure

The first condition (condition i) is syntactic adjacency. Before tackling the possibility of preferences in word order in a free word order language,

I first outline how word order is and isn't used in Warlpiri, using the notion of constraints as in Optimal Syntax (Bresnan 1996) to express the preferences.

In finite clauses in Warlpiri, case and AUX agreement are used instead of word order or hierarchical configuration to express argument functions such as SUBJECT, COMPLEMENT. Case and AUX agreement also allow discontinuous nominals to be construed as referring to the same entity. Thus an ADJUNCT modifying a nominal may be in the same NP or may appear separated from it as a sister. There is no evidence for a VP at the level of the finite clause. Hence Austin and Bresnan (1996), Nordlinger (1998) and Bresnan (2001) have argued for Warlpiri and languages like it, having a flat structured S, in which grammatical function assignment is "lexocentric", that is, provided by the words rather than the configuration. They argue that these languages lack the special syntactic prominence given to the SUBJECT in English, which, it is suggested, is due to the high ranking in English of a constraint that has the consequence that discourse-significant positions are on sentence margins. "Specifiers of functional categories are the grammaticalized discourse functions" (i.e. SUBJECT, TOPIC and FOCUS) (Bresnan 2001:118). The English SUBJECT achieves this prominence by being the specifier of a functional projection IP.

The lack of prominence for SUBJECT in Warlpiri is due to the appearance of the SUBJECT within S rather than as the specifier of IP. Austin and Bresnan (1996) attribute this to a high ranking of "a competing structural principle of predicate-argument locality, which favors closer proximity between a verb or other predicator and its arguments, including the subject." (Austin and Bresnan 1996:224). Clearly, if the SUBJECT is the specifier of IP it is more removed from the head argument-taking predicator (PRED) of the clause than if it and the PRED are sisters. Moreover, having a VP daughter of S would place a greater distance between SUBJECT and verb than between OBJECT and verb. The relative ranking of these principles then explain the lack of configurational expression of argument functions in main clauses in Warlpiri.

What about ADJUNCTs? Bresnan (2001:110–111) proposes that an ADJUNCT binds to the head (PRED) in its immediate functional structure. I suggest that this can in many languages be manifested as word order preference: a principle of adjunct-head locality, which favors closeness between a head and its modifiers. For example, if this principle is ranked highly enough, it will make discontinuous nominal modifiers unacceptable. In Warlpiri it will result in ADJUNCTs which modify nominals striving to be as close to them as possible, and thus in the existence of NPs. But if other principles, for example information structure weight,

come into play, then an ADJUNCT modifying a nominal may be at a sentence margin, rather than being adjacent to its head.

The principles of predicate-argument locality and adjunct-head locality result at the clause-level in competition between ADJUNCTs modifying the verb or clause, and argument functions such as SUBJECT and OBJECT. They all compete to be as close to the PRED of the clause (V or N). Since there are only two positions adjacent to a PRED, inevitably there will be some violations, resulting in apparent freedom of word order.[15]

Returning to the principle of discourse-prominent constituents on the clause margins, this does operate to some extent in Warlpiri. Swartz (1991) has argued that placing an element in clause initial position gives informational structure weight to that element.[16] Initial position is the normal place in Warlpiri for operators having scope over the whole clause. For example, for a sentence to be interpreted as a WH question, the WH question must appear in sentence-initial position. Another example comes from Laughren (1982:148–149). In (18a) the propositional particle *kulanganta* 'as if' appears clause-initially, and the whole event is unrealized. In (18b) the act of spearing takes place, but not of people, as the appearance of *kulanganta* directly in front of *yapa-patu-juku* shows.

(18) a. **Kulaŋanta**=lpa yantarli nyina-ja, kala lawa
AS.IF=IMPERF home sit-PAST BUT no
'I thought that he was at home, but he wasn't.'
(Laughren's (57))

b. Pantu-rnu=jana **kulanganta** yapa-patu=juku, kala
spear-PAST=3330 AS.IF person-MANY=STILL BUT
mingkirri-patu.
antbed-MANY
'He speared them as though they were real people, but they were termite mounds.' [Warlpiri Dictionary: kala]

Armed with these three principles (discourse functions on margins, predicate-argument locality, adjunct-head locality), I now turn to the preferred word order question. To test Hale's claim about the popularity of the Participle-*rla* Verb order, I did a search of an electronic corpus of Warlpiri material, totalling about 100,000 words. The results

[15]In fact, it seems that in Warlpiri predicate-argument locality may outrank adjunct-head locality. As Laughren (1989) and Hale (1982) have pointed out, the preferred position for the OBJECT of a verb in a participial construction is directly before the participle without any intervening adjunct, which suggests the outranking of adjunct-head locality.

[16]However, an important way of indicating discourse status is not configurational but morphological—adding clitics which specify how and why one is drawing attention to some element, e.g., a definite/topic clitic *-ju*, a contrastive clitic *-jala*, etc.

are given in Table 6. The corpus covered material recorded between 1966 and 1984 from several speakers. Much of the material consisted of monologue narratives (e.g. "Darby"), but there were descriptions of paintings ("Kuruwarri"), some elicitation as well as vernacular definitions.

A more thorough-going study of this data is needed, in particular to consider sentence length and alternative parses for each sentence. But from Table 6 there are two favorite places for the participle to appear.

(a) There is a strong tendency for the participle to appear at the margin of the clause or punctuated as an independent sentence (this is particularly true of the Hale–1–1101 texts). (These two figures are not independent, since some of the instances of participles appearing clause-initially include instances of the participle-AUX-verb order).

(b) The other favorite place is for the participle to precede the main verb directly (or with only the AUX intervening). The reverse is attested but is much less common.

The preference for the participial construction to occur at clause margins is common crosslinguistically (Lehmann 1988). Participles occurring clause-initially, and, to a lesser extent, clause-finally, are easily interpreted as modifying the clause as a whole. They are also likely to bear discourse prominence. So the principle that discourse-prominent elements appear at margins could explain the preference for this position.

	Position of the Participle vis à vis the Verb				
	Darby-3 1972–83	Kuruwarri	Hale-1–1101	all 3 collections	%
word count	25,235	5,340	69,506	100,081	
PPL precedes V in S (not necessarily adjacent)	83	25	117	225	55%
PPL follows V in S (not necessarily adjacent)	37	11	64	112	28%
PPL without V[17]	2	2	61	65	16%
other			5	5	1%
Total	**122**	**38**	**247**	**407**	**100%**

[17]This refers mostly to participles occurring as separate clauses. To some extent this is hard to distinguish because Warlpiri punctuation is not yet settled—at what point does an intonation break representing an ADJUNCT become strong enough to represent a separate clause?

	Position of the Participle vis à vis the clause margins				
	Darby-3 1972–83	Kuruwarri	Hale-1–1101	all 3 collections	%
PPL final in S	13	9	32	54	13%
PPL pre-AUX in S	33	3	37	73	18%
PPL without V	2	2	61	65	16%
Subtotal: PPL on margin (or separate unit)	**48**	**14**	**130**	**192**	**47%**
PPL not on margin	74	24	117	215	53%
Total	**122**	**38**	**247**	**407**	**100%**

	Participle adjacent to V (or with only AUX intervening)				
	Darby-3 1972–83	Kuruwarri	Hale-1–1101	all 3 collections	%
PPL (AUX) V	68	20	82	170	42%
V (AUX) PPL	7	2	11	20	5%
PPL not adjacent to V (or separated by intonation break)	47	16	154	217	53%
Total	**122**	**38**	**247**	**407**	100%

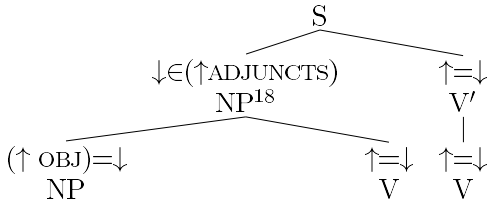
TABLE 6 Counts of Warlpiri *-njarla* participle-verb orders

The other favorite position, directly preceding the finite verb, probably has to do with semantic interpretation. Elements acting as ADJUNCTS may modify the head of the clause (usually a finite verb) or they may modify the clause as a whole (that is, the event). I suggest that when a participle appears next to a verb it is interpreted as modifying that verb, whereas when it appears clause-initially or finally it modifies the whole event. The principle of adjunct-head locality would result in a preference for the participle being adjacent to the verb. This principle competes with the principle for ADJUNCTS carrying informational structure weight, (as TOPIC, say), to appear in marginal positions, or even as separate intonational units.

The two favorite positions for the participle then arise from general constraints on the word order realization of grammatical and discourse functions, one deriving from the adjunct-head relation, and the other from discourse prominence.

Annotating the constituent structure with information on the functions produces a tree as follows.

Participle-Verb Sequence



But the adjunct-head locality constraint does not explain why the participle precedes the verb, rather than following it. Semantically, we could guess that iconicity provides a partial explanation; the SEQ participle usually denotes an event which precedes the event denoted by the main verb. Syntactically, we might expect that the position would stem from general principles of headedness in Warlpiri. However, headedness in Warlpiri is not simple.

Headedness falls into two types: the relation between the head and an argument of the head, and the relation between the head and a modifier of the head. In Warlpiri, the argument-head relation in lexical categories and their projections is strongly right-headed. This is true both in the morphology and in the syntax. Table 7 illustrates this.

In Optimality Syntax terms, the constraint "Head right" for government of argument by argument-taking predicate seems to do the job for

[18]Arguments for treating the participle and its arguments and adjuncts as an NP are given in Simpson (1991). However, nothing in the paper hinges on this.

Morphology	**Syntax**
Compound of noun	OBJECT
+ agentive form of verb	+ Participle [Order obligatory]
kuyu-pantu-rnu	kuyu pi-ŋja-ku
meat-spear-AGENT	meat hit-PPL-PURP
= 'eaglehawk'	= 'to kill game'

TABLE 7

both morphology and syntax. But note that, as I mentioned in the introduction, Warlpiri, arguably, does not have phrasal arguments. There are no sentential subjects and only marginal examples of verb-headed complements (Hale 1982). So the head structures in Warlpiri are all of governed noun phrases, not of governed verbs. We cannot look to a light verb or to an auxiliary verb structure to provide a model of headedness. However, the relation between a participle and a verb in the constructions we have been looking at is not that of argument-head. Rather, the participle is an ADJUNCT, a modifier of the verb. We therefore need to look at modifier-head relations in Warlpiri. These are rather more complex, depending both on category and on the type of head property. I review them briefly.

In nominal projections, the semantic head comes first, obligatorily in compounds, optionally (but preferred) in phrases, as in Table 8. However, case-marking has to occur on the rightmost element of the phrase, showing a divergence between semantic head (left-headed) and syntactic head (right headed). This divergence becomes acute with the existence of discontinuous constituents. An attribute can occur in an NP constituent on its own, and thus has no head at all in the same constituent.

Morphological	**Syntactic**
milpa-liirlki	karnta wita-ngku
eye-white = 'crow'	girl small-ERG ='little girl'
	wita karnta -ngku [less preferred]

TABLE 8

Thus, the only help gained from looking at the position of semantic adjuncts in nominal constructions is that inflections must occur on the right of a word. Since verb inflections occur on the right of verbs, the participle would have to precede the verb for this to continue to be the case. But this is a weak argument.

More important is the observation that the only projections of verbs that there are in Warlpiri (the preverb-verb structures mentioned above) conform to the general right-headed principle of Warlpiri. The preverb only rarely represents an argument of the verb—instead it ranges from event quantification to adverbs of manner, direction, medium, to relations that introduce affected participants ('because of', 'for the sake of'), to predicating a resultant state of an argument. That is, they modify the verb, or perhaps the event. Thus the preverb-verb structure provides a structure "modifier-head" which fits the Participle Verb sequence.

This section has shown that there are two preferred positions in a clause for a participial ADJUNCT. Both are predictable, at least in part, from general principles determining word order. One of those orders, placing a participle directly in front of a verb, is placing it in the position of a preverb, the major class of ADJUNCTs for verbs. Thus, the syntactic adjacency requirement for reanalysis is fulfilled.

6.3.3 Transition from Syntactic to Morphological Structure

The structural similarity between pre-verbal participles and preverbs leads onto the next condition, the existence of an easy transition from a sequence of words to a sequence of morphemes (condition ii). Once a sequence of words, such as a participle-verb sequence, can be analyzed as a preverb-verb sequence, the path to compounding, and then reanalysis is relatively clear-cut, as we now show.

The preverb-verb sequence can be analyzed as a verb phrase or sometimes as a verb, depending on the tightness of boundary between the preverb and verb. For example, the relation between *jurnta* and the verbs in (19) is a loose relation best described as a verb phrase (but with no complements), while *raa-pungka*, 'spread' in (19a) is a tight combination best described as a word. The inflection of the whole is usually determined by the conjugation of the verb root, except for the most lexicalizedd preverb-verb combinations.

(19) a. Marna=ngalingki milpa-ku **jurnta-raa-**pu-ngka.
grass=12O eye-DAT away-spread-hit-IMPER
'Spread the (tall) grass apart away from our eyes.' [H59:863]

b. Kaji=rna jarrama-ni, **jurnta-rdilyki-ya-ni** ka=ju=rla.
if=1S strike-NPST away-break-go-NPST PRES=1O=DAT
'When I strike it [match], it breaks off on me.' [H59:101]

In either case, the preverb-verb sequence, or even preverb-preverb-verb (19b) can precede the AUX, suggesting that the sequence forms a single constituent. Certain preverbs, like *jurnta*, can follow the verb (20),

with little apparent difference in meaning, which suggests that they do not form words with the verb.

(20) Ngati-nyanu-ku ka=rna=rla=jinta kurdu marda-rni
mother-SELF-DAT PRES=1S=DAT=DAT child.ABS hold-NPST
jurnta.
away
'I am looking after the child for his mother (who is away).'
[ML:RJG/JNE:1976]

As I mentioned earlier, the boundaries between preverb and verb can be even looser than those described between participle and verb: like the participle-verb structures, clitics can intervene between the preverb and the verb, but unlike them a preverb can immediately follow the verb. Table 9 shows the range of preverb-verb structures, from compounds to syntactic structures (Nash 1982).

Morphological	**Syntactic**
Preverb-verb (compound) (tightness of binding shown by final consonant of preverb[19])	Preverb verb (looseness of binding shown by *-pa* augment of preverb)
wuruly-ya-ni [order obligatory] secret-go-nonpast	wurulypa-ya-ni [preferred] secret go-nonpast ya-ni wurulypa [less common]

TABLE 9 Preverb-Verb structure

In fact, there is evidence of the preverb-verb structure becoming so lexicalizedd that new verbs are occasionally added to the small existing stock. An example[20] is the verb *tirlpi-mi* 'to flake, knap' (first conjugation), which almost certainly relates to the preverb *tiirl(pa)* 'split', as in *tiirl-pi-nyi* 'to flake, chip' (third conjugation). Comparative evidence suggests that *tiirl* is widespread as a preverb, and that the verb *tirlpimi* is an innovation, in which an old finite verb (quite possibly *pi-* which is widespread as a transitive verb 'hit' and often bleaches to a transitivizer) has been reduced and reinterpeted as part of the root.

Thus there is an attested path from preverb-verb sequences in the syntax to verbs in the morphology. This in turn provides a path for

[19]Warlpiri does not allow independent words to be consonant-final. The fact that consonant-final preverbs can appear with or without the augment *-pa* indicates their ambiguous status. If they follow the verb, the augment is obligatory (Nash 1982, 1986).

[20]I thank David Nash for this example.

the eventual transition of the Participle-*rla* Verb sequence from a syntactic sequence to a compound. The first requirement would be for the Participle-*rla* verb sequence to become a syntactic phrase, which would allow it to appear as a single constituent in front of the AUX. This has not yet happened. Equivalently, the Participle-*rla* could be reanalyzed as a preverb. There are no phonological barriers to this happening.

6.3.4 Argument Structure Merger

In the discussion of the first and second conditions I suggested that the preverb-verb structure provides a useful parallel for the modifier-head relation of the participle-verb sequence. I also showed that preverb-verb structures are often lexicalized, and can even lose trace of the source finite verb. The creation of such complex verbs requires some kind of argument structure merger, which is where condition (iii) comes in.

The shift from a biclausal to a monoclausal structure is accompanied by merging of argument structures between two verb forms. The best documented of such mergers involve constructions such as causatives, permissives and auxiliaries (Mohanan 1994, Butt 1997a,b, Alsina 1996, Rosen 1997) in which one verb or verb phrase could historically be construed as an argument of the other, and elsewhere in the language such complement structures exist synchronically. For example, many Indo-European languages allow verbs to have infinitive complements in which the SUBJECT of the infinitive is functionally controlled by some argument of the higher clause. It is easy to see how the merger of argument structures involved in sharing one argument through functional control of the SUBJECT of an XCOMP can then lead to sharing more than one argument, and then to the transparency of argument sharing that results in the raising of the former XCOMP to the status of "co-head", and thus to the creation of permissives, causatives and auxiliary verbs.

But, as I mentioned earlier, Warlpiri does not allow arguments to be realized by verb phrases or clauses. There are no good examples of free verbs taking arguments realized as XCOMP or even COMP in Warlpiri. And there are no good examples of sentences with two verbs, one of which is comparable to an auxiliary verb or to a light verb. Instead, the merger of argument structures between participle and verb involves the raising of an ADJUNCT to co-head status. As Butt (1999) points out, grammaticalization resulting from the functional embedding relations involving XCOMPs (which often leads to the development of auxiliaries) could be expected to differ from grammaticalization involving co-heads.

However, the existence of links between the arguments of the ADJUNCT participle and the finite verb make merger of argument structures in the participle-verb co-head structure in Warlpiri more likely. Just as

the argument structures of a verb and an XCOMP are linked by the sharing of the argument expressed as SUBJECT, so the argument structures of SEQUENTIAL participle and finite verb are linked by the obligatory anaphoric control by the SUBJECT of the main verb of the SUBJECT of the participle which is required by the SEQUENTIAL complementizer. Moreover, when both SEQUENTIAL participle and finite verb are transitive, both are often also linked by sharing an OBJECT. Finally, Warlpiri uses zero anaphora for third person objects. This means that even when the participle and the verb are at either end of the sentence the sharing of an unexpressed OBJECT through zero anaphora looks on the surface no different from sharing a SUBJECT through obligatory anaphoric control via the SEQUENTIAL complementizer. This makes for promising conditions for the merger of argument structures between participle and verb.

For the merger of participle and verb argument structures to take place, it would be helpful to have comparable instances of a similar merger. The preverb-verb structure again provides a model. The evidence comes from preverbs which add DATIVE arguments to the argument structure of the clause.

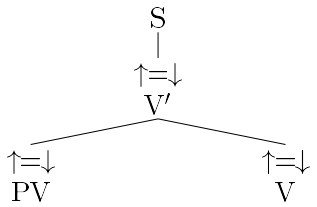
(21) Ngarrka ka=**rla** karnta-ku wangka-nja-kurra-ku
man.ABS PRES=DAT woman-DAT talk-PPL-OBJCOMP-DAT
jangkardu-karri-mi.
against-stand-NPST
'The man is standing aggressively against the woman talking.'
[JS:JNW:1987]

In (21) the preverb *jangkardu* is added to an intransitive verb *karri-mi*. It adds an argument marked with DATIVE case which is cross-registered in the AUX by the DATIVE clitic *=rla*. Participles modifying this DATIVE argument have the OBJCOMP complementizer *-kurra* which otherwise only attaches to participles modifying OBJECTs of the clause (Hale 1982, Simpson 1991). This indicates that the argument added by *jangkardu* is an OBJECT (Warlpiri allows DATIVE OBJECTs elsewhere) and thus that merger of the argument structures of the preverb and verb has taken place. Observe however that the merger of arguments is not complete: despite the fact that there is an OBJECT, the case of the SUBJECT is ABSOLUTIVE not ERGATIVE.

To explain the merger of argument structures that results from adding a preverb like *jangkardu* to a verb, in Simpson (1991) I analyzed the preverb-verb combinations as being formed in the lexicon. But this failed to account satisfactorily for the existence of the reverse order, the verb-preverb sequences illustrated in (5) and (20).

Subsequent work on argument structure merger in complex predicate formation (Mohanan 1994, Butt 1997b, Wilson 1999) suggests that a better approach is to retain the syntactic distinctness of the preverb and verb (except in the obviously lexicalizedd instances where the two must appear in the order "preverb verb" and the meaning is not compositional), and to express the addition of a DATIVE argument through argument structure merger. That is, the preverb and the verb are co-heads of the clause, as shown below.

Preverb-Verb Structure



Once the participle-verb sequence is reanalyzed along the lines of preverb-verb, with both participle and verb acting as co-head, the stage is set for merger of the participle's argument structure with that of the verb. This then allows later reanalysis as a complex verb, just as the verb *tirlpimi* 'to flake' has been created from a preverb and a verb.

Further evidence that the participle-*rla* verb structure has not yet undergone full merger of argument structure has to do with the case of the SUBJECT of the clause. In sentences with the sequence Participle-*rla* Verb, the case of the SUBJECT of the whole sentence is determined by the case assignment properties of the finite verb, that is, by the case required by the finite verb of its SUBJECT. There is no reason for saying that the participle and the verb form a syntactic complex predicate (although semantically they seem to). However, the transitivity has changed in verbs with associated motion inflections such as the Warumungu forms in (1), or consisting of associated motion compounds as the Warlpiri forms in (2), or of derived associated motion as the Warlpiri INCEPTIVE forms in (10). For these, the case is determined by a merger of argument structures—so that if there is an agent, it is expressed by ERGATIVE case, regardless of whether the agent is originally an argument of the finite transitive verb, or of the compounded participle. This raises the question—can this merger of argument structures only take place inside words—is there a necessary difference in case assignment between the phrase and the word?

There is no such necessary difference. While in Warlpiri there is a clear difference in behavior between associated motion compound verbs and sequences of Participle-*rla* Verb, Austin (1989) in a discussion of

auxiliarization in Karnic languages[21] provides data which suggests an intermediate stage. (The data is not entirely parallel, because these languages, unlike Warlpiri, use auxiliary verbs, and lack the rich preverb-verb structure of Warlpiri.) Austin shows the existence of phrasal constructions in which the participle determines the case of the SUBJECT of the sentence. In (22) (from the Karnic language Yarluyandi) the verb *yuri-yarra* 'want' is separated from the non-finite verb *thayi-langga* 'eat' by the OBJECT of the complement. The SUBJECT of the whole sentence has NOMINATIVE case.

(22) Nganyi yuri-yarra [parrkulu thayi-langga].
I.NOM want-PRES three eat-IMPLSS
'I want to eat three.' [Austin 1989:63 ex. 25]

However, if the non-finite verb directly precedes the finite verb, then the two verbs are treated as a single intonational unit realized syntactically as a phrase. The case of the SUBJECT of the clause is determined by the case of the non-finite verb. (23) shows this (*thayi-langga* 'eat' is a transitive verb which would normally have an ERGATIVE SUBJECT). The finite verb has become an auxiliary or light verb.[22]

(23) Parrkulu ngathi [thayi-langga yuri-yarra].
three I.ERG eat-IMPLSS want-PRES
'I want to eat three.' [Austin 1989:63 ex. 26]

Observe the importance of word order in Yarluyandi—the association with the verb that adjacent linear precedence provides seems to be the trigger for allowing case assignment by the participle. That is, the participle and the verb form a complex predicate in which the case of the SUBJECT of the whole is determined by the transitivity of the new complex predicate. The SUBJECT of the clause is ERGATIVE if the case of the SUBJECT of the participle would be ERGATIVE. Argument structure merging takes place.

The 'want' construction in (23) shows two predicates, one of which represents an argument of the other, and thus is comparable to mergers of light verbs discussed elsewhere in the literature. But (24) shows that this merger, like those of serial constructions and of associated motion constructions, can involve two predicates which describe different aspects of the same event, rather than the situation in which one is an argument

[21]The Karnic languages are spoken well to the southeast of Warlpiri.

[22]The kinds of tests used by Rosen (1997) to distinguish between auxiliaries and serial verbs are hard to use in these languages because they usually lack syntactic manifestations of unaccusativity. However, the fact that the case of the SUBJECT is determined by the participle exemplifies the transparency that characterizes Rosen's auxiliary class.

of the other. (*thika* is the finite verb of (24), and would normally take a NOMINATIVE SUBJECT).

(24) Yindi kurrha-rnda thika.
You.ERG put-PPL return.IMPER
'You put (it) back!' [Austin 1989:55 ex. 16]

Thus these Karnic examples provide the missing intermediate stage in grammaticalization—a phrase construction in which the case of the SUBJECT switches from being determined by the finite verb to being determined by a free participle. The Yarluyandi participle construction has reached Stage 4 in Table 5, at which a point of shift of syntactic reanalysis has been reached.

The Karnic languages show a situation in which the finite verb appears to reach the auxiliary stage in the grammaticalization stages postulated by Hopper and Traugott (1993) (Stage 4 in Table 5). The *-rla* construction in Warlpiri has reached Stage 3, a meaning shift associated with a preferred word order. However, there is no need to suppose that it will go through the auxiliary verb stage of the Karnic languages, as the possibility of reanalysis of the participle as a preverb allows the main verb to become part of a compound without ever going through the stage of reanalysis as a syntactic auxiliary verb or clitic.

6.4 Conclusion

At the start of this paper I raised two questions about grammaticalization of associated motion in some Pama-Nyungan languages. The first was how in a free word order language could the adjacency required for grammaticalization occur? I have shown that we need the notion of preferred or favorite word order. A model for grammaticalization of associated motion exists in a synchronically attested participle construction in Warlpiri. A corpus count showed that there were two preferred places for the participle to occur, on clause margins, or directly preceding the verb. In the latter case, Ken Hale has observed a shift of meaning to a single event. The adjacency and meaning shift provide the platform for a move towards grammaticalization.

The second question concerned Hopper and Traugott's path from full verb to affix via auxiliary verbs. The languages concerned do not have, synchronically, light verbs or auxiliary verbs which could act as an intermediate stage of constituent structure. This is of concern, because common sense tells us that it is dangerous to postulate stages for which there is no synchronic or independently attested diachronic model. However, Hopper and Traugott's "auxiliary verb" stage conflates constituent structure properties and argument structure properties. An

auxiliary (or light) verb provides both a constituent structure model (adjacent constituents), and an argument structure model (the main verb is an argument of the auxiliary or light verb, and argument structure merger allows the necessary change of argument structure properties). In Warlpiri the constituent structure adjacency is provided by preverb-verb constituents. Preverb-verb constituents also show argument structure merger, but the relation between a preverb and a verb is between adjunct and head, unlike that of light verb and verb. The adjunct-head argument merger is also involved in the unification of participle and verb, and thus provides the necessary argument structure model.

The conclusion then is that grammaticalization involves the coordination of reanalysis in different parts of the grammar, the constituent structure, functional structure, word structure and argument structure.

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7

Language Change, Lexical Features and Finnish Possessors

IDA TOIVONEN

7.1 Introduction

The main goal of this paper is to demonstrate how morphosyntactic change can be understood and described with reference to lexical features, and also to show that the formal framework of Lexical-Functional Grammar (LFG) provides all the tools necessary to do so.[1] The data that will be considered comes from the Finnish possessive system, which involves both independent pronouns and bound affixes. These independent words and affixes interact in a complex manner, and this paper will adopt a "lexical split" analysis of the affixes, argued for in Toivonen (2000). A "lexical split" is an instance where one form corresponds to two distinct sets of lexical features. Section 6.2 presents the Finnish pronominal possessors and outlines the lexical analysis that will be the basis for the subsequent discussion. Section 6.3 explores the origins of the lexical split and shows how the present lexical analysis can help us understand the evolution of the modern system. Section 6.4 presents further changes that have occurred in various Finnish dialects, and we will see that these changes can easily be captured with the lexical fea-

[1]I would like to thank the following people for helpful comments and discussion: Ash Asudeh, Joan Bresnan, Mark Hale, Paul Kiparsky, Charles Reiss, Peter Sells, and two anonymous reviewers. The opinions presented in this paper are ultimately my own and none of the people mentioned here should be held responsible for those views. Also, any mistakes in this paper are entirely my own.

Time over Matter.
Miriam Butt and Tracy Holloway King (eds.).

tures posited in Section 6.2, together with the view of language change presented in Section 6.3.[2]

7.2 Modern Standard Finnish

Pronominal possession in Standard Finnish constitutes a complex system. It is described in Dolbey (1995), Hakulinen & Karlsson (1979), Kanerva (1987), Karlsson (1991), Leino (1989), Nevis (1984), Pierrehumbert (1980), Stenberg (1971), van Steenbergen (1989), Toivonen (2000), Trosterud (1993), Vainikka (1989), and Vilkuna (1996). What follows below is only a brief sketch of the main characteristics of the Finnish possessors, and I therefore refer to the works cited above for fuller descriptions of all aspects of the data.

7.2.1 First and Second Person Possessors

Let us first look at the first and second person possessors, which differ interestingly from the third person possessors. The first and second person possessors can be expressed either with an independent pronoun (e.g., *minun* for first person singular) together with a possessive suffix on the possessed noun (*-ni* for first person singular), or with a possessive suffix alone. This is shown in (1).[3]

(1) a. Pekka näkee (minun) ystävä-ni.
P. sees my friend-1SG.PX
'Pekka sees my friend.'

b. Pekka näkee (sinun) ystävä-si.
P. sees your.SG friend-2SG.PX
'Pekka sees your friend.'

c. Pekka näkee (meidän) ystävä-mme.
P. sees our friend-1PL.PX
'Pekka sees our friend.'

d. Pekka näkee (teidän) ystävä-nne.
P. sees your.PL friend-2PL.PX
'Pekka sees your friend.'

[2]It should be noted that this paper is not (nor is it meant to be) any kind of complete description of the possessive system in different (contemporary or extinct) versions of Finnish. The data here is carefully chosen to illustrate the main differences between distinct varieties of the language, but it would naturally be both interesting and possible to go into much more detail. That is, however, beyond the scope of this paper.

[3]The following abbreviations are used in this paper: PX=possessive suffix, SG=singular, PL=plural, NOM=nominative case, ACC=accusative case, PART=partitive case, ALL=allative case, ILL=illative case, ELA=elative case, ADE=adessive case, COND=conditional, HUM=human.

The parentheses indicate that the independent pronouns are optional. The possessive suffixes, however, are obligatory.

Pronoun optionality is often referred to as "pro-drop". In LFG it is analyzed as an ambiguity, or a "split", in the affix. When the independent pronoun, e.g., *minun*, is present, it functions as the pronoun and the suffix is a mere agreement marker. However, when *minun* is absent, the suffix itself has pronominal status. This analysis does not need to refer to any empty category such as "little pro".[4] Formally, this is encoded in the entries of the relevant lexical items. The lexical entry with a PRED feature has pronominal status.[5] The PRED feature value 'pro' for pronouns represents the referential semantics of the lexical item. Each PRED feature value 'pro' has a unique index and cannot unify with another feature, according to the principle of functional uniqueness:

(2) **Uniqueness Principle:**
Every attribute has a unique value.

Thus, if both *minun* and *-ni* had a PRED feature, it would be impossible for them to unify in the f-structure, because of the "PRED clash".[6] Exactly one PRED feature needs to be provided for the possessor function, so when *minun* is absent, it must be provided by the possessive suffix. We thus need to posit an optional PRED feature in the lexical entry for *-ni*. The lexical entries for *minun* and *-ni* are given below:

(3) *minun*:
$$\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}$$

(4) *-ni*:
$$\begin{bmatrix} \text{POSS} & \begin{bmatrix} (\text{PRED} & \text{'pro'}) \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}$$

Since the PRED feature of *-ni* is optional, the suffix *-ni* in effect corresponds to two different lexical entries, one with a PRED feature and one without:

[4]Previous LFG accounts of subject and object *pro-drop* phenomena include Bresnan and Mchombo (1986) for Chichewa, Andrews (1990) for Spanish, and Nordlinger (1998) for Wambaya.

[5]LFG allows for alternative analyses of similar phenomena. For example, the suffix could be an unambiguous pronoun, and it could be anaphorically related to an antecedent (Bresnan (2001); see also footnote 13). This alternative is not appropriate for Finnish, however, as argued by Toivonen (2000).

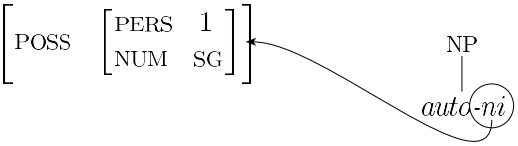
[6]For an introduction to the general principles of LFG, see Bresnan (2001) and references cited there. For a more detailed discussion of the specific feature analysis assumed here, see Toivonen (2000).

(5) *pron.* *-ni* : $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}$

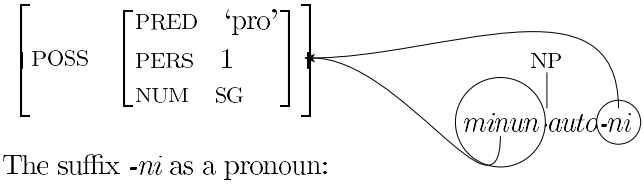
(6) *agr.* *-ni* : $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}$

The c-structure to f-structure mappings in (7-9) further illustrate the ambiguity of the suffix *-ni*:

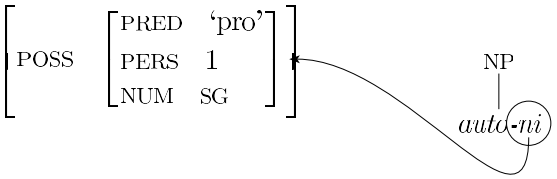
(7) The suffix *-ni* as an agreement marker:



(8) The agreement marker *-ni* together with *minun*:



(9) The suffix *-ni* as a pronoun:



In (8), the independent pronoun *minun* contributes the PRED feature, but in (9), the PRED feature comes from the suffixal pronoun. In sum, the possessive suffix acts as an agreement marker when the independent pronoun is present, and the suffix itself has pronominal status (i.e., it has a PRED feature) when the pronoun *minun* is absent.

What we see above is a "lexical split" analysis of *pro*-drop: One form corresponds to two distinct sets of features. Once we allow for these kinds of splits (which are empirically motivated), we predict that homophonous suffixes could differ in more than one feature. The third person possessors provide evidence for further differences, as we will see in the next section. Importantly, this analysis allows for each entry to change independently of the other (for example, (5) could change independently of (6)). In sections 6.3 and 6.4, we will see that such independent changes do, indeed, occur.

7.2.2 Third Person Possessors

The third person possessors are a bit more complicated than the first and second person possessors. In the third person, it is not the case that the independent pronoun is simply optional, as in the first and second person. The presence of an independent pronoun in the third person indicates an important difference in meaning, illustrated in (10-11):[7]

(10) a. Pekka näkee hänen ystävä-nsä.
P. sees his/her friend-3PX
'Pekka$_i$ sees his/her$_{*i/j}$ friend.'

b. Pojat näkevät heidän ystävä-nsä.
boys see their friend-3PX
'The boys$_i$ see their$_{*i/j}$ friend.'

(11) a. Pekka näkee ystävä-nsä.
P. sees friend-3PX
'Pekka$_i$ sees his$_{i/*j}$ friend.'

b. Pojat näkevät ystävä-nsä.
boys see friend-3PX
'The boys$_i$ see their$_{i/*j}$ friend.'

In (10), the possessor and the subject have disjoint reference, whereas in (11), the possessor and the subject are coreferential. This will be formalized here with the feature SB, subject binding. The pronouns *hänen* and *heidän* have the feature [SB −], which prevents them from being subject bound. The pronominal suffix *-nsA* (11) has the feature [SB +], which makes it obligatorily subject bound. In contrast, the agreement marking *-nsA* does not have the [SB +] feature, since that would prevent it from agreeing with *hänen* and *heidän* (10).

Another interesting characteristic of the third person possessors is the fact that although the pronominal suffix can be bound by a non-human subject (12), the agreement suffix cannot agree with a non-human possessor (13):

(12) Se heiluttaa häntää-nsä.
it wiggles tail-3PX
'It$_i$ wiggles its$_i$ tail.'

(13) a. Minä annan koiralle sen ruokaa.
I give dog.ALL its food.
'I give the dog its food.'

[7]The third person possessive suffix *-nsA* is the same in singular and plural. Because of vowel harmony, the suffix is sometimes realized as *-nsa* and sometimes as *-nsä*.

b. *Minä annan koiralle sen ruokaa-nsa.
I give dog.ALL its food-3PX

This is captured here with a human gender constraining equation (which will be represented here by an asterisk in the structure (e.g., GEND HUM*)) on the agreement affix, requiring it to agree with a human possessor. The constraining equation requires that a human gender feature be provided to the f-structure into which the agreement suffix *-nsA* will be mapped. The agreement suffix does not itself provide this feature, since it does not have a (↑ GEND) = HUM defining equation, which inserts [GEND HUM] in the f-structure.[8]

The relevant lexical entries are thus the following:[9]

(14) *hänen*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \\ \text{GEND} & \text{HUM} \\ \text{SB} & - \end{bmatrix} \end{bmatrix}$

(15) *pron. -nsA*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \\ \text{SB} & + \end{bmatrix} \end{bmatrix}$

(16) *agr. -nsA*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PERS} & 3 \\ \text{GEND} & \text{HUM*} \end{bmatrix} \end{bmatrix}$

The lexical entries in (14–16) capture the data cited above.[10]

In the third person, we see that the lexical split goes beyond the theory-internally motivated split based on the PRED clash argument given for the first and second person possessors. The presence or absence of the SB feature, and also the constraining equation, provide further ev-

[8]For a formal definition of the difference between defining and constraining equations, see Kaplan and Bresnan (1982) and Bresnan (2001). The standard notation for a constraining equation in a lexical entry is: (↑ GEND)=$_c$ HUM. This notation is avoided here, since it would involve introducing symbols that are not otherwise needed for the discussion. Regardless of the notation, the point remains the same.

[9]For clarity of exposition, only the features relevant for the discussion of historical change are included in (14–16). For a full analysis of the modern Finnish data, more features are required. For example, the agreement suffix needs a feature that prevents it from agreeing with pronouns. Culy (1996) and Toivonen (2000) use PRO + for this: Bresnan (2001) suggests that the difference in binding features between pronominal and non-pronominal elements may be used for this purpose.

[10]It should be noted that there are more quirks to the third person possessors than this presentation would lead us to believe. I have only introduced the characteristics of relevance for the discussion which follows. For more data, I refer to the works cited in the beginning of this section.

idence for the split. Once it is recognized that this kind of "pro-drop" phenomenon should be analyzed as a lexical split, it is not surprising that features other than PRED can be involved.[11]

7.3 From Older Finnish to Modern Standard Finnish

The "split system" we see in modern standard Finnish is a fairly recent development. Consider the following examples, which include third person possessive suffixes but no independent possessive pronouns, even though the possessors are not bound by the subjects (note that *marja* and the possessor are not coreferential in (17)):

(17) Niin marja ylemä nousi polosille polville-**nsa** niin marja
so berry up rose dear.ALL knees.ALL-3PX so berry
yelmmä nousi riveille rinnoille-**nsa**
up rose nimble.ALL breasts.ALL-3PX
'Thus the berry rose up onto her dear knees, thus the berry rose up onto her nimble breasts...'

(18) Piltti pieni piikase-**nsa** sekä juoksi jotta...
P. little servant.girl-3PX both ran and
'Piltti, her little servant girl, both ran and...'

Examples (17–18) are taken from Juhana Fredrik Cajan's transcriptions of folk poetry (DuBois 1995). DuBois discusses numerous examples which are similar in structure to (17–18). It is not difficult to find sentences like (17–18). Penttilä (1957), for instance, discusses similar examples,[12] and he notes that the structure is outdated. One of the examples cited by Penttilä is given in (19):

(19) Silloin taannoin, kun isä-**nsä** vielä eli, oli Osku katsonut
then recently when father-3PX still lived, had O. looked
erääänä keväisenä päivänä...
certain springlike day
'Recently, when his father was still alive, on a springlike day, Osku had looked...'

The sentences in (17–19) would be ungrammatical in modern Finnish, since the possessive suffix *-nsA* is not agreeing with an independent possessive pronoun, nor is it bound by a subject. We can thus conclude that the lexical entries for the pronominal possessors were different in older

[11] The present analysis could be extended to the Finnish subject agreement system. However, since many details (including the binding facts) are different, we will not be concerned with subject agreement here.

[12] Penttilä's examples are not from folk poetry.

Finnish. Recall that the lexical entries for the third person possessive suffix *-nsA* in modern Finnish are (15–16), repeated here as (20–21).

(20) *pron. -nsA*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \\ \text{SB} & + \end{bmatrix} \end{bmatrix}$

(21) *agr. -nsA*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PERS} & 3 \\ \text{GEND} & \text{HUM}* \end{bmatrix} \end{bmatrix}$

It is clear that (20–21) are not appropriate for older Finnish, since the binding requirements are different. There are two possible ways to analyze the older suffix:

(22) (H1) The third person suffix was a true pronoun (with an obligatory PRED feature), which could optionally be doubled by an independent pronominal adjunct.

(H2) The third person suffix used to be like the modern first and second person pronouns, with an optional PRED feature.

I consider both of the alternatives in (22), but focus on H1, since that hypothesis needs to appeal to more changes in order to arrive at the modern suffixes. Under the hypothesis that the older *-nsA* was unambiguosly a pronominal element, a single lexical entry is sufficient:

(23) *'old' -nsA*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 3 \end{bmatrix} \end{bmatrix}$

The lexical entry in (23) is consistent with the data in (17–19). The suffix *-nsA* is a pronominal element which marks third person possession, regardless of whether the possessor is coreferential with the subject or not. We now need to answer the question of how the lexical split of the modern *-nsA* could have come about.

It is clear from the examples in (17–19) and from the lexical entry in (23) that no independent pronouns were necessary in older Finnish. Such elements did, however, exist, although their function must have been different from their modern day function. I propose that these pronouns were in older Finnish adjoined *topics*[13] which did not have

[13]This pronoun might have been a dislocated topic or external topic. This kind of topic is anaphorically linked to the pronominal suffix through the referential indices of the two functions. This topic and the suffix are not linked through the f-structure value of the two functions and there is thus no functional uniqueness violation (see Bresnan (2001) for details on how dislocated topics are formalized in LFG).

argument status. These topics were presumably added for emphasis, since the suffixes cannot receive stress.

It used to be possible for the possessive suffixes to attach to independent pronouns, as can be seen in (24), from Ljungo Thomsson (1609), cited in Forsman Svensson (1983).

(24) Mies cuole ennen quin emändä tiesi **hänens** wastoin oleuan.
man dies before that wife knew her.3PX pregnant be.PRT
'The man dies before the wife knew that she was pregnant.'

This supports the proposal that the independent pronouns had adjunct status, since it is not likely that two arguments with the same referent could be affixed to each other.

Under the hypothesis outlined above, the difference between the older stage and modern Standard Finnish looks like (25).

(25) *Old:* hänen kirja-nsa
he.GEN.TOPIC book-3PX.PRON
'as for him, his book'
Modern: hänen kirja-nsa
he.GEN book-3PX.AGR
'his book'

Although the lexical representations corresponding to the specific morphemes differ, the surface string of words is identical in the two phrases in (25). Since the surface string *hänen kirjansa* is ambiguous, it is easy to see how the change could have taken place as *reanalysis*, presumably in language acquisition, as discussed in Hale (1997).[14]

Once the reanalysis has taken place, the lexical representation of *-nsA* has no PRED feature, and its sole function is that of an agreement marker. However, the acquirer who has posited such a representation will also be faced with sentences where there is no independent pronoun *hänen* (that is, a sentence that, as far as the speaker is concerned, contains no external topic), and the possessor is marked solely with a possessive suffix. The learner is then forced to posit another lexical entry for *-nsA* which has a PRED feature. We now have a "lexical split", comparable to (20–21). In contrast to (20–21), however, the hypothesized situation we have here is a case of pure optionality — the *hänen* is optionally present. That is, the presence of *hänen* does not entail a difference in meaning (cf. the first and second person possessors, discussed in Section 6.2.1). This would put us in the same position as hypothesis (H2) in (22). The

[14]For discussions of reanalysis, see, e.g., Harris and Campbell (1995) and Lightfoot (1999:215–220).

rest of the discussion in this section will thus cover hypothesis (H2), as well as the final steps of hypothesis (H1).

Clark (1993) assumes that there is a universal "principle of contrast" available to the language learner. This means that the learner assumes that different forms never have exactly the same meaning. When faced with structures containing *hänen -nsA* and also structures containing only *-nsA*, the child posits a difference in meaning (following the contrast principle). Such a difference is, in the case under consideration, the coreference vs. non-coreference with the subject, marked with a simple SB feature in our representation.

It might seem puzzling that the binding distinction should emerge only in one person, namely third. There is a straightforward functional explanation for this. The first and second person reference is always fixed within the discourse: the first person is the speaker and the second person is the hearer. Although it is of course possible for first and second person to develop morphologically specified reflexive forms (e.g., *myself*), this will not serve to disambiguate utterances, since the first and second person reference is never ambiguous. Third person, however, is quite different. In a sentence like *John washes his car*, the pronoun *his* is ambiguous, since it could either refer to John or to someone else. It is therefore not a mystery that the third person might develop special morphological marking denoting reference: if only one person differentiates the form of the reflexive and the form of a non-reflexive, it should be third person where a difference in form in a concrete way serves to disambiguate the meaning. This difference between the first and second person pronouns on the one hand and third person on the other may be, strictly speaking, grammar-external, but it could still influence the kinds of changes that are likely to take place in the lexical entries referring to the different persons.[15]

One could attempt to incorporate these kinds of generalizations directly into the theory of grammar. That is, one could try to make differences in likelihood of change for different lexical entries a direct consequence of the way grammatical knowledge is represented. This could be formalized through incorporating markedness hierarchies into the grammar, for example. However, since facts such as the one under discussion here are *tendencies* rather than absolute, universal truths, and since a functional, grammar-external explanation seems sufficient, my personal preference is to leave the formal model of the grammar and the lexicon unbiased as to which changes should occur under what circumstances.[16]

[15] See Comrie (1998) for a similar line of argumentation.

[16] It should be pointed out, however, that a lexical approach such as the one outlined here is not in principle incompatible with the view that the model of grammar should

Above I have posited a sequence of changes which are consistent with the data and with a principled view of language change. I have not, however, made a choice between the two hypotheses in (20). Hypothesis (H2) is obviously simpler, since it is contained in (H1). However, (H1) addresses the question of how lexical splits can emerge in the first place. It is very difficult to make a choice between (H1) and (H2) based on the available data, and I will therefore leave this issue unresolved. I hope, however, to have made clear that given a careful analysis of the lexical features of the possessive pronouns, the emergence of a lexical split can be seen as a natural step in the historical development of the possessors. The explicit lexical feature analysis made available by the LFG framework provides the tools necessary to explore the path of changes that the possessive suffixes have undergone.

7.4 Dialectal Variation

There is rich dialectal variation in Finnish concerning the possessive suffixes. This section examines some of the variation documented in the literature. We will see that the feature system outlined in Section 6.2 allows us to understand and make explicit exactly how the changes which led to the variation came about. We will also see that the dialectal data provide evidence that the lexical split hypothesis is correct.

7.4.1 The Tampere Dialect

The possessive system of the colloquial Finnish dialect of Tampere differs interestingly from the system of Standard Finnish. Below, I summarize Vainikka's (1989) description of the properties of the Tampere dialect possessors.[17] In the Tampere dialect, the possessive suffixes have been lost in the plural, although they are retained in the first and second person singular. The examples in (26) are adapted from Vainikka (1989:217):

(26) a. mun kissa-ni
my cat-1SG.PX
'my cat'

directly reflect historical tendencies. Lexical hierarchies such as the ones standardly adopted in Head-Driven Phrase Structure Grammar (Pollard and Sag 1994) could be organized with such tendencies in mind, for example. In recent work combining LFG and Optimality Theory, we see crosslinguistic markedness tendencies directly encoded in the grammar, see, e.g., Bresnan (1998, 1999).

[17]The dialect Vainikka describes is that of younger Tampere speakers. Naturally, there is variation within the Tampere community as well. That is not crucial for our present purposes, since the main point here is the fact that the feature system of Section 6.2 can be drawn upon to understand the dialectal variation. The focus will therefore be on the data that Vainikka describes.

b. sun kissa-s(i)
your.SG cat-2SG.PX
'your cat'

c. sen kissa
her/his/its cat
'her/his/its cat'

d. Jukan kissa
J.GEN cat
'Jukka's cat'

e. meiän kissa
our cat
'our cat'

f. teiän kissa
your.PL cat
'your(pl) cat'

g. niitten kissa
their(human/non-human) cat
'their cat'

Note that the third person pronouns *hänen* and *heidän* which specifically refer to human referents are lost in the Tampere dialect.

Let us first consider the first and second person singular pronouns. According to Vainikka, it is very awkward to include the independent pronouns *mun* and *sun* in sentences where the subject is the possessor, as in (27):

(27) Mä kävelytin koiraa-ni/ ?mun koiraa-ni.
I walked dog-1SG.PX/ my dog.1SG.PX
'I walked my dog.'

This parallels the behavior of *hänen* in Standard Finnish, which is marked [SB −], and cannot be coreferential with the subject. The lexical entry for *mun* in Tampere Finnish would then be (28):

(28) *mun:*
$$\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \\ \text{SB} & - \end{bmatrix} \end{bmatrix}$$

Note that the difference between (28) and the lexical entry for Standard Finnish *minun* is minimal, only the feature [SB −].[18]

[18] If we replace *mun* with *minun*, some speakers of Standard Finnish agree with the judgements in (27). For those speakers, the entry for *minun* looks like (28).

Now let us consider the third person pronominal possessor. As we saw in (26), there is no third person agreement suffix in Tampere Finnish, perhaps due to the fact that the human third person pronoun *hänen* and *heidän* have been lost.[19] However, there *is* a third person possessive suffix, but only in the function of a reflexive pronoun:

(29) Jukka/se kävelytti koiraa-nsa.
J./(s)he walked dog-3PX
'Jukka/(s)he$_i$ walked his/her$_i$ dog.'

This development is not surprising, under the present assumptions. In section 6.2, it was recognized that the agreement suffix and the pronominal suffix are two different lexical entries. It is then predicted that one could be lost while the other is retained. This is exactly what we find in Tampere Finnish.

7.4.2 Other Dialects

This section briefly presents other varieties of Finnish, which differ in their possessive system. When suffixes are lost, other suffixes might take over their function. The suffixes that take over new functions lose some of their feature specification, as we will see below.

In some dialects of Finnish, the third person possessive suffix has become unspecified for person (recall that it was already unspecified for number). This is exemplified in (30–31):[20]

(30) Veisatkaa kukin kovalla äänellä ja
sing.2PL.IMPERATIVE each.one loud.ADE voice.ADE and
sydäme-nsä pohjasta!
heart-3PX bottom.ELA
'Sing loudly and from the bottom of your hearts, everybody!'

(31) no täällä-kö sinä vielä asut emäntine-nsä?
well here-Q you.SG still live wife-3PX
'so, do you still live here with your wife?'

In the dialects where sentences like (30–31) are found, the pronominal suffix *-nsA* can be represented with the following feature matrix:

(32) *-nsA*: $\left[\text{POSS} \quad \left[\begin{array}{ll} \text{PRED} & \text{'pro'} \\ \text{SB} & + \end{array} \right] \right]$

[19] Recall that the third person agreement marker in Standard Finnish has a constraining equation which requires it to agree only with an element that contributes human gender to the f-structure.

[20] Example (30) is taken from Penttilä (1957:126). Example (31) is taken from Tauli (1966).

Note that there is no person specification in (32), so the binder is not necessarily a third person element. The feature specification difference between Standard Finnish *-nsA* and (32) is, as we can see, quite small: the only difference lies in the absence of a person feature. The surface realization of this difference is, however, quite notable.

Tauli (1966) reports that in some South-West Finnish dialects, the first and second person plural suffixes have been replaced by the first person singular form. Since Tauli does not comment upon any further peculiarities, it will be assumed here that the dialects are like Standard Finnish in other respects, as far as the pronominal possessors are concerned. The lexical representaion of *-ni* is given in (33).

(33) *-ni*: $\left[\text{POSS} \quad \left[\text{PRED} \quad \text{'pro'}\right]\right]$

Since the first and second person plural suffixes have been lost, *-ni* will appear in their place. The suffix *-si* is still present and specified for person and number (second person singular) and *-nsA* is specified for person (third). Why is it impossible for *-ni* to appear in the place of *-nsA* and singular *-si*? I propose that this is due to a simple *blocking* mechanism: more highly specified lexical entries block less specified ones (see e.g., Andrews 1990, Lightfoot 1999:97–100, and references cited therein). We see that the suffix *-ni* in (33) contains very little information. When it functions as an agreement marker, it contains no syntactic features at all.[21] It is then present only to satisfy some morphological requirement,[22] and not to contribute syntactic information. From a functional perspective, it is easy to understand why this type of morphology is often lost over time, since it does not add any information to what is already indicated by other parts of the sentence (see, e.g., Hopper & Traugott 1993:163–164).

In the eastern part of the dialect area where South-West Finnish is spoken, the first and second person plural suffixes have been lost, just like in the dialects described above (Tauli 1966). The difference here is that the second person suffix *-si* covers singular and plural second person possessors, while *-ni* covers singular and plural first person possessors, and *not* second person plural. This is easily accounted for if we

[21]Except perhaps the feature [PRO +], which prevents it from agreeing with a non-pronoun (see footnote 9).

[22]Similar to the English subject agreement marker */-z/* in *calls*, for example. Note, however, that the third person singular verbal agreement marker in English is actually more specified than *-ni* in (33), since the English marker actually does contribute some f-structure information, which unifies with information already contributed by the subject.

assume that the lexical entries for *-ni* and *-si* have lost their number specifications.

(34) *-ni*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 1 \end{bmatrix} \end{bmatrix}$

(35) *-si*: $\begin{bmatrix} \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'pro'} \\ \text{PERS} & 2 \end{bmatrix} \end{bmatrix}$

This change may have come about through *analogy* with the third person possessor, which was never specified for number. Again, we see that the difference between the dialects of South-West Finnish is featurally quite small, but the consequences of these featural differences are significant.

The dialectal differences presented in this section have served to illustrate two important points: First, we have seen that it is necessary to recognize the existence of "lexical splits" in order to explain how certain changes can occur (e.g., the loss of the agreement marking *-nsA* in Tampere Finnish). Second, it has become clear that careful investigation of the relevant lexical features helps us describe and understand the changes that have led to dialectal variation.

7.5 Conclusion

The main goal of this paper has been to show that a detailed and specific theory of the lexicon can be useful for understanding morphosyntactic change. Section 6.2 presented a straightforward lexical account of the Finnish possessive system, which has proven to be difficult to analyze in non-lexicalist theories (see Pierrehumbert 1980, Nevis 1984, and Trosterud 1993, for example). We saw that relatively simple lexical entries together with independently motivated principles of LFG managed to capture all the relevant data. Sections 6.3 and 6.4 then went on to explore how the specific lexical features posited in Section 6.2, together with the theoretical frame of LFG, could be used to make each individual change explicit. The lexical features were also useful to refer to in the discussion of how and why it was possible for the changes to occur. We saw evidence that slight featural differences may result in significant surface differences. Finally, we have seen that some changes affect the agreement marking suffixes, but not the pronominal suffixes. This lends support to the "lexical split" analysis assumed in this paper (and generally assumed in LFG for crosslinguistic occurrences of pro-drop): if there was no difference between the pronominal and the agreement marking suffixes, it would not be possible for one to be lost and the other retained.

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Subject Index

Name Index

The field of historical linguistics has a long and venerable tradition whose main focus has been a study of phonological and morphological changes. In this century, the study of language change has found a place within generative syntax and has established itself as a fruitful line of inquiry.

The book presents, for the first time, a collection of work done in historical linguistics from the perspective of Lexical-Functional Grammar (LFG), a lexical unification-based theory. The problems tackled are representative of the field of historical linguistics. However, this volume stands apart through the number and types of languages surveyed. In addition to presenting new approaches to data from much studied languages like the Romance languages and Germanic, the book introduces issues in the diachronic development of less well studied languages, including Finnish, South Asian languages, and Australian languages. The volume thus offers fresh perspectives on a number of phenomena such as the development or shift of case marking systems, the development of possessive systems, the rise of auxiliaries and the origins of complex predication involving verb particles or light verbs.

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