

PERSPECTIVES ON GRAMMATICALIZATION

Edited by

WILLIAM PAGLIUCA
University of Illinois at Urbana-Champaign

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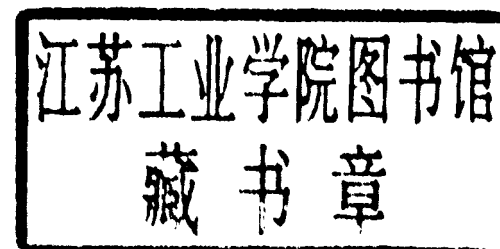
William Pagliuca (ed.)

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Preface

The thirteen papers in this volume represent a selection of the papers on grammaticalization topics presented at the Nineteenth Annual Linguistics Symposium of the University of Wisconsin-Milwaukee. The theme of the symposium was Explanation in Historical Linguistics, and the first volume of selected papers from the conference has already appeared in this series as *Explanation in Historical Linguistics*, Garry W. Davis and Gregory K. Iverson (eds) (*Current Issues in Linguistic Theory*, 84). Most of the papers in the present volume appear in revised form.

The editor would like to thank all those who attended or helped organize the symposium, especially the members of the symposium organizing committee and those who chaired sessions or registration tables. Special thanks go to the College of Letters and Science and several of its affiliated departments at UWM for continued financial and intellectual support of the annual UWM Linguistics Symposium series, and to Garry Davis, who bore primary responsibility for organization and scheduling, and who saw to it that all aspects of what was an exceptionally large symposium ran as smoothly as possible.

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Introduction

In recent years there has been a resurgence of interest in grammaticalization, which may be defined as the evolution of grammatical form and meaning from lexical and phrasal antecedents and the continued formal and semantic developments such material subsequently undergoes. The universality of grammaticalization is most obvious in the striking cross-linguistic consistency of the lexical sources of particular grammatical forms and the formal and semantic changes which characterize their developmental histories. In genetically and typologically distinct languages throughout the world, constructions built up from particular lexical items are repeatedly observed to provide the raw material for particular tenses or aspects, particular adpositions, and so on. Thus constructions built up from the general movement verbs 'go' and 'come', so long as they do not carry past or perfective marking, may evolve into markers of future; constructions with the verb 'finish' may ultimately develop into markers of completed action; and body part terms such as 'stomach', 'heart', or 'mouth' may give rise to prepositions meaning 'inside'.

As a lexical construction enters and continues along a grammaticalization pathway, it undergoes successive changes in meaning, broadly interpretable as representing a unidirectional movement away from its original specific and concrete reference and toward increasingly general and abstract reference. Moreover, as meaning evolves, so does form, so that material progressing along a pathway tends to undergo increasing phonological reduction and to become increasingly morphologically dependent on host material. Depending to some extent on the typology of a given language and the grammatical meaning in question, the most advanced grammatical forms, in their travel along developmental pathways, may have undergone continuous reduction from originally free, unbound items, to affixes entirely dependent on their hosts.

The cross-linguistic regularity of the descent of given grammatical meanings from particular and specifiable precursors suggests that grammat-

ical material is the product of phenomena which are both universal and unidirectional. At a minimum, this in turn suggests that as our understanding of these phenomena increases, so will our understanding of the mechanisms of diachronic change in general. Informed by these advances, diachronic theory and method will inevitably increase in scope and power, and come to be routinely and profitably applied to the internal and comparative reconstruction of grammatical meaning. But analytical and theoretical advances in grammaticalization have even greater potential, which may eventually allow us to address issues of broad interest not only to linguistics, but to other disciplines as well. It is tempting, for instance, to interpret the regularity and universality of grammaticalization pathways as at least in part a reflection of universal aspects of human perception, cognition, and behavior. To discover that expressions we use to refer to salient and familiar objects and activities in the world routinely develop into grammatical material which encodes particular spatial and temporal perspectives is to begin to learn something — about the sometimes mundane or gross origins of the subtle logic of grammar, but also about ourselves, and that is the extent to which our day-to-day perceptual and physical encounter with the world and with each other forms the basis upon which is molded both the substance and the structure of grammar.

Precisely how grammatical material arises from the non-grammatical, and how it continues to evolve semantically and formally, may be seen as the broad issues which the papers in this volume address. These contributions will also make evident the broad scope of inquiry in grammaticalization studies, which ranges from phonetic, morphological, syntactic and semantic concerns proper to explorations of the role of discourse factors in the evolution of grammatical meaning. Not surprisingly, not all authors are in complete agreement on every theoretical and analytic aspect of grammaticalization. They do, however, clearly share much more than a 'broad consensus', and the conceptual and analytic threads running through all the contributions demonstrate the richness and potential of this approach to diachrony.

The papers to follow have been divided into three sections. The two papers of the first section, by Haiman and Hopper, are concerned more with general matters than with specific analyses, and each seeks to extend the range and scope of inquiry of grammaticalization, the first by exploring the behavioral mechanisms underlying the creation of grammatical forms, the second by focussing on their extinction as grammatical material and re-

emergence as phonological elements. The next nine papers are case studies in grammaticalization, arranged in a rough continuum according to the extent to which broader-perspective phenomena, such as discourse factors and syntax, rather than relatively local morphological and semantic factors, figure in the analysis. The studies by Kilroe, Epstein, and Rubba trace the development of particular grammaticalizing forms in analyses which invoke mechanisms such as metaphorical extension, metonymy and alternate construal. In the contributions of Carey, Slobin, Ohori and Paolillo, pragmatic inference and the conventionalization of conversational implicatures are key elements in explanation. Cyr, viewing discourse as playing an even larger role in grammaticalization, explores the relevance of discourse-grounding functions; Claudi, analyzing changes in word order, demonstrates that grammaticalization theory can profitably address the history of change in large and sometimes complex stretches of form. Somewhat different are the two papers which make up the last section. Bybee addresses the issue of the development of meaning in zero-marked forms by examining data from a sample of 76 languages designed to be representative of the languages of the world, and Heine takes up the analysis of a particular case of grammaticalization with the explicit purpose of demonstrating the explanatory power of grammaticalization theory relative to that of a formal synchronic approach.

In the remainder of this introduction, we consider each contribution individually.

John Haiman, noting the fundamental role of repetition in the design features of language, explores the striking similarity of the formal and conceptual aspects of grammaticalization to habituation and emancipation, two fundamental mechanisms long recognized in psychology and ethology, respectively. In habituation, frequent repetition of a stimulus results in steadily decreasing responses to it, and eventually to the erosion of both its form and original significance. Habituation is illustrated in human language not only by greetings and clichés, but by grammaticalization generally. Another result of repetition is automatization, which Haiman identifies as the probable source of the design feature of double articulation, whereby the smallest meaningful units (words or morphemes) are made up of even smaller units (individual phonemes or speech sounds) which are themselves meaningless. Since the meaningless units are the remnants of originally meaningful units via the series morpheme > affix > phoneme (as Hopper argues), repetition is implicated not only in the final as well as earlier stages

of grammaticalization, but in the origin of double articulation itself. Emancipation is the phenomenon by which an instrumental action become disassociated from its original primary motivation and is thus free to serve a communicative function; it acquires meaning and becomes a sign. Haiman shows that, much as communicative behavior in other species arises from the ritualization of originally non-communicative behavior, various phenomena in human language also have their origin in emancipation; these include phonologization, the ritualization of stress and intonation, and the rise of stereotyped patterns of intonation. Language itself, Haiman argues, may be conceived as action emancipated from an instrumental function.

The question that Paul Hopper poses and answers in "Phonogenesis" is: Given that the phonological substance of grammatical as well as lexical morphemes is subject to inexorable erosion over time, where do the new segments that constitute the phonological 'bulk' in words come from? Phonologization, which accounts for paradigmatic gain arising from syntagmatic loss, cannot explain how syntagmatic loss is compensated for syntagmatically. Rather, Hopper argues, syntagmatic renewal is the result of phonogenesis, by which erosion over time results in morphemes surviving as phonological parts of words. The maxim version — 'no matter how remotely, all phonemes were once morphemes' — extends Givón's familiar dictum 'today's morphology is yesterday's syntax' and, like it, reminds us of the long-term perspective which diachronic theory can and should offer, and of the seamless continuum such a perspective reveals. Here Hopper's concern is with the phonological-to-morpholexical stretch of the continuum, and he illustrates phonogenesis with examples from English, German, and other languages, examining its three characteristic features of layering, compensatory accretion, and divergence. Both layering and divergence reveal the relation of phonogenesis to grammaticalization, and, in addressing phenomena falling outside the usual purview of morphology, point to the continuum: over time, morphemes become less productive and their meanings residual, with consequent difficulties for traditional analysis. Rather than treating such remnants as 'defective morphemes', Hopper suggests they be studied from the complementary perspective, i.e. as phonological remnants, and thus the source of new segments, and proceeds to show how profitable this approach can be by offering fresh perspectives on relatively well-known phenomena and surveying the implications of phonogenesis for our conception of language.

Patricia Kilroe traces the evolution of the Modern French preposition *à* from the principally allative *ad* of Latin through the Late Latin, Old French and Middle French periods. Four stages of semantic development are identified, each continuing a unidirectional trend from the concrete spatial relations present in *ad* to increasingly abstract senses, with concomitant syntactic developments by which relative freedom of occurrence is gradually curtailed, resulting in complete dependence and fixation in conventionalized syntactic frames. Kilroe argues for the role of metaphor and metonymy as mechanisms of semantic transfers in Stage 1 (e.g. from allative to goal of motion, locative, comparison) and for the generalization of these transferred senses in Stage 2, with consequent increases in their frequency and syntactic distribution (e.g. from *à* + locative noun to *à* + infinitive). At Stage 3, continued generalization of particular transferred senses results in syntactic conventionalization (e.g. of *à* as an allative to a purpose and goal marker, and from goal marker to the basic dative). In Stage 4 *à* is emptied of sense and eventually replaced in certain constructions. Kilroe points out that, although the progression is clear enough from our current perspective, the stages are actually approximate focal points on a continuum; in real time, there was some simultaneity of different stages, with new senses appearing as others were being generalized.

Richard Epstein seeks to explain a body of Old French data not accounted for by the traditional analysis of the use of the definite article, which assumes that the presence or absence of the article is predictable on the purely semantic grounds of definiteness, specificity, and unique identifiability. Epstein argues that the explanation of such apparent anomalies as the appearance of the definite article with nouns with generic reference and the zero article with semantically definite count nouns requires a richer conception of semantics than referentiality and definiteness alone provide. Such a model is provided by Cognitive Grammar, which incorporates such considerations as communicative intent, salience, figure/ground organization and thematic continuity, and asserts that speakers can construe situations in different ways to accord with the choice of an image which most closely fits the meaning they wish to convey. Thus, although count nouns tend to be construed as definite, abstract and mass nouns as generic, alternate legitimate construals are possible, allowing speakers to construe a noun as either definite or generic in particular instances. Applying this analysis to the Old French data, Epstein argues that such unusual construals add expressive nuances to the basic meanings supplied by the articles, an

interpretation which is in accord with Traugott's proposed motivation for the early stages of grammaticalization — the desire of speakers to seek out novel expressive possibilities for linguistic forms. As forms increase in frequency, extend to new contexts, and become obligatory, however, they become less and less able to convey the more expressive kinds of meaning they were recruited for. This leads Epstein to make a case for a distinction between early and late stage motivations in grammaticalization.

Using data from an Iraqi dialect of Northeastern Modern Aramaic, Jo Rubba offers a Cognitive Grammar analysis of the evolution of body part terms into spatial prepositions, a well-attested grammaticalization pathway. Her principal intent is to demonstrate that in grammaticalization, semantic change is the driving force, with changes in form following as direct consequences. Thus she regards the two major stages of development along this pathway — successive generalizations of the body part noun, and the category shift from noun to preposition — as involving semantic changes only, the last of which results automatically in morphosyntactic dependence. She defends her position with detailed analyses of the meaning shifts involved in each stage, demonstrating where the cognitive linguistics approach is compatible with, and where it may be seen to complement, other approaches to grammaticalization. Thus Rubba interprets metaphorical extension and metonymy, the mechanisms underlying the transition from body part term to general object part term and from object part term to locative noun, respectively, in terms of figure/ground profiling and schematization. She also argues that the analysis of the category change from locative noun to preposition as a profile shift or change in construal highlights the special contribution that her approach can make to grammaticalization theory.

Kathleen Carey's focus is on the early stages of the evolution of the *have* + participle construction of Old English into the modern present perfect. Perfect-like but not yet a true perfect, the early Old English construction referred to a current state rather than a past action. Exactly how this meaning arose from one in which the participle functions as an adjectival complement referring to the state of the object has been an issue for some time. Kurylowicz argued that perfect meaning necessarily conventionalized first in verbs with external objects; Benveniste, almost the reverse — that the seed constructions involved verbs of sensation and intellection. Addressing what she views as the two principal shortcomings of earlier accounts, Carey provides a definition of the early, perfect-like meaning which is precise enough to allow tracking of the shift from adjectival meaning, and

examines OE textual data to determine the frequency with which particles of verbs of different semantic classes occur. Appealing to pragmatic factors, she argues that although perfect-like readings may have occurred as conversational implicatures in constructions with external objects, the perfect-like meaning was likely to be conventionalized first in mental state and reporting verbs. Carey concludes that the shift from adjectival to perfect-like meaning is best conceived of as a process in which both metaphor and pragmatic forces are operative.

Dan Slobin, also focussing on the role of pragmatics in the development of the 'present perfect', evaluates the significance of the apparent parallels between the diachronic and ontogenetic courses of the development. Just as the first use of the emerging perfect in Old English and elsewhere was the resultative, English-speaking children first use the present perfect in immediate resultative contexts, suggesting that resultative constitutes both the ontogenetic and diachronic core. Arguing that acquisition data complement historical materials by providing a window on the core meanings of grammatical forms in their youngest uses and by allowing study of the interpersonal use of forms in dialogue, Slobin explores the basis of the parallels. He shows that both parent and child use the present perfect for negotiation of consequences of completed activities and to draw attention to results, in which the perfect is differentiated from the preterite by the intent of the speaker and by the hearer's drawing the invited inferences; this finding, he notes, is in direct accord with the pragmatic analysis proposed by Carey for the rise of the resultant state reading in Old English. Slobin identifies the cognitive inference from resultant state to antecedent process, whereby perception of a consequence leads to recall of its cause, as the natural mental process at work both developmentally and diachronically, and the reason why results are the 'starting points' for perfects in both. Having shown that the parallelism appears to run even deeper, Slobin then explains why he believes it is in fact illusory: Young children, though exposed to the entire range of current uses of the present perfect, begin with the core meaning of resultant state with inference to immediately preceding process because it is cognitively simple and accessible; later uses appear only with attainment of a certain level of cognitive maturation. Diachronically, however, resultant state appears first because only after it is conventionalized can later uses, which are metaphorical and metonymic extensions based on it, arise. Thus, new uses over time are the products of continued pragmatic inferences which young children are incapable of drawing, discovering them only as they mature.

Toshio Ohori's purpose is to explain the gradual decline of the switch-reference marking function of the conjunctive marker *BA* from Old through Middle Japanese. Although Old Japanese *BA* and *TE* are generally assumed to have been principally reference-tracking devices (*BA* linking clauses with different subjects, *TE* linking clauses whose subjects are the same), not all of their properties are thereby explained. Examining operator scope and relativization in older texts, Ohori first shows that what *BA* and *TE* actually code are different degrees of clause integration, and that their reference-tracking properties follow from this difference. With this understanding of the roles of *BA* and *TE*, Ohori then addresses the question of why the switch-reference function of *BA* eroded in Middle Japanese. He finds that, while the interpretation of *TE*-linked clauses remained relatively constant over time, the interpretation of *BA* was extended from its canonical function of marking temporal sequence and simple juxtaposition to the marking of causal, conditional, and other relations between clauses. The basis of such extensions, Ohori argues, is that juxtaposed clauses invite pragmatic inferences, so that, for example, an antecedent event comes to be taken to be the cause of a following event. As the bonds between more and more *BA*-linked clauses strengthened in this manner, *BA* linkage came to code retention of subject, and was thus no longer a reliable marker of switch reference in late Middle Japanese. The strengthening of pragmatic inferences, a mechanism proposed by Traugott, was thus the basis of the grammaticalization of clause linkage toward higher degrees of clause integration, which in turn led to the decline of the switch reference function of *BA*.

The role of pragmatics in diachrony also figures prominently in John Paolillo's explanation of the development of attitude-marking functions in what were originally markers of subject-verb agreement in Sinhala, an Indo-Aryan language of Sri Lanka. In Modern Sinhala, the forms which mark hortative, volitive optative, and other communicative attitudes are remnants of person-number-gender forms in the agreement system of Classical Sinhala. Paolillo argues that the development is explicable in terms of the conventionalization of implicatures, whereby the particular speaker attitude implicated by each form in the agreement system in certain tenses and aspects came to be reanalyzed as the actual content of the form. Paolillo thus views the change in the agreement system as consistent with Traugott's Tendency III type grammaticalization, whereby meanings tend to become more situated in the speaker's mental attitude toward the situation, but argues that what set the stage for the change was a prior develop-

ment in the system of focus markers, which themselves were associated with communicative attitudes. A paradigm leveling of the focussing system and the expansion of the discourse role of focussed sentences led to the closer association of focus and agreement markers, and ultimately to the regularization of their meanings in favor of attitude marking.

Givón has characterized the diachronic cycle in terms of successive phases of renewal of the following series: discourse gives rise to syntax, which in turn evolves into grammatical morphology, which then, via continued phonological erosion, results in morphophonemics, which eventually disappears. Hopper, as we have noted, finds that the last stage of the series is more accurately described in terms of absorption rather than complete erosion to zero. Danielle Cyr questions whether the step-wise events in the diachronic cycle always involve parallel changes in form and function, and, in particular, whether the functions of original discourse strategies necessarily decay as they develop into syntax and then morphological elements. She is led to this concern by her study of the role of the three verbal orders of Algonquian as they appear in Montagnais. Although ancient and obligatory (no verb stem can appear without one or another of these bits of inflectional morphology), the meanings they express have been notoriously difficult to determine. Cyr argues that the puzzle is resolvable when discourse is examined, and identifies foregrounding, backgrounding, and grounding as the discourse functions of the three orders, relating them to perfectives, imperfectives and focussing markers in other languages. She concludes that the orders might have evolved without ever completely losing their discourse-grounding functions, and suggests that, if this is so, then function does not necessarily decay in parallel with form.

In a detailed analysis of the development of SOV from earlier SVO order in a number of constructions in languages of the Mande subgroup of Niger-Congo, Ulrike Claudi demonstrates that word order change may arise without any actual transposition of constituents. Although others have argued that SOV order in Mande is a retention from Proto-Niger-Congo, with the more common SVO pattern elsewhere in Niger-Congo the result of a pragmatically-motivated transposition of constituents, Claudi defends an alternative view, which maintains that SOV order in Mande is an innovation arising directly from grammaticalization. Examining tense and aspect marking in Mande languages, she shows that, in the grammaticalization of an auxiliary verb into a marker of tense or aspect, the syntax of an original periphrastic construction, and hence its word order, is thereby

changed. The inevitability of these changes in word order is shown to follow from certain morphosyntactic properties characteristic of Mande: the absence of derivational morphology, which allows verbs to be used as nouns, and the fact that periphrastic constructions in Mande are instances of nominal periphrasis, in which the main verb is encoded as the direct object of the auxiliary. Predicate-initial marking arises when these periphrastic constructions break down by simple bleaching of the auxiliary or by bleaching accompanied by loss of a location marker after a verbal noun; in either case, the former infinitival complement is necessarily reinterpreted as an OV sequence. Post-verbal marking arises when the auxiliary is lost and the former location marker or nominalizer is left as the sole indicator of tense or aspect, resulting in tense or aspect suffixes and SOV order. In these developments, Claudi argues, some of the changes are instances of grammaticalization proper, but others — such as the reanalysis of an infinitival complement as a finite verb and the reanalysis of a possessive modifier of an infinitival complement as a direct object — are rather examples of what she calls 'restoring reanalysis', by which the elements revert to their 'natural' categorial status, thereby creating OV order. Claudi concludes by surveying the predictive power of her analysis for word order changes in general.

Joan Bybee argues that meaning arises in zero-marked tense and aspect forms by some of the same mechanisms which create meaning in overt grammaticalizing forms. When, by the conventionalization of implicatures, licensed inferences come to be taken as part of the explicit meaning of an overt grammaticalizing form, the absence of the form is taken as a signal of other meanings in the same tense or aspect domain, even if they previously had no grammatical expression in the language. Because inferencing is dependent on the discourse and cognitive context, and because the conceptual domain of tense and aspect is universally available, the meaning a zero will express following the creation of an overt tense or aspect marker is predictable. In particular, Bybee hypothesizes that the meanings expressed by zeroes depend on the default or most common interpretation within the conceptual domain, which differs for presents and pasts: the default function of the present is to describe how things are, whereas the default of the past is to narrate what happened. Thus, in the present, the default aspectual interpretation for dynamic verbs is habitual, which describes the general characteristics of scenes and their participants; this default is signaled by zero when a present progressive develops. In the past, the default

interpretation is perfective, which zero will signal when a past imperfective develops. Examining forms marking present and past tense and imperfective, perfective and related aspects in a stratified sample of 76 languages, Bybee finds solid support for her claims. Zeroes are not distributed randomly over conceptual space; certain meanings are expressed by zeroes, others never are. Moreover, the meanings zeroes cover are the same prominent areas in the tense and aspect domain which may also be expressed by overt grams. Crucially, in no case is a default meaning expressed by an overt grammatical marker and the non-default by a zero — we do not find languages with an overt present habitual and a zero present progressive, or an overt perfective and a zero past imperfective. The cross-linguistic distribution of zeroes thus conforms to Bybee's predictions.

Bernd Heine focusses on the progressive in Ewe (Niger-Congo), a construction with apparently odd morphosyntactic properties, in order to demonstrate the explanatory power of grammaticalization theory. He first draws a distinction between weak and strong explanations: a weak explanation is said to be provided when a linguistic feature is accounted for by reference to other linguistic features or to aspects of a given theory; a strong explanation relates the phenomena under consideration to independently motivated principles and to parameters outside of linguistic structure. Grammaticalization, Heine argues, may be regarded as a complex parameter which provides strong explanations of linguistic phenomena. Grammaticalization is complex in the sense that it accounts for grammar in terms of pragmatic and cognitive manipulation by means of conversational implicatures, which in turn lead to context-induced reinterpretation and conceptual transfer, by which concrete concepts are recruited to express more abstract ones. Turning to the Ewe progressive, Heine illustrates its morphosyntactic characteristics: it is marked by both a preverbal particle and a suffix, by the reduplication of intransitive but not transitive verbs, and by a change in the order of object and verb in transitives; an added wrinkle is that both reduplication and the presence of the preverbal particle are optional. Although some of these properties are attributable to the partly nominal character of the construction, Heine shows that synchronic accounts which seek to explain the relevant facts about the construction on the basis of its nominal character raise more questions than they answer. By contrast, a grammaticalization analysis explains not only the diachronic origins of the construction, but also precisely those properties which appear most puzzling, including the absence of reduplication with transitives and

the synchronic variation occasioned by the optionality of both reduplication and the preverbal particle. By surveying the evolution of progressives cross-linguistically, Heine then shows that the ostensibly problematic properties of the construction in Ewe are not only typical, but are to a large extent predicted by grammaticalization theory. He concludes that although the individual accounts offered to explain each particular property constitute a series of weak explanations, taken together they approximate a strong explanation in terms of the more general parameter of grammaticalization.

William Pagliuca

I

Groundwork

Ritualization and the Development of Language

John Haiman
Macalester College

0. Introduction

Like all human institutions, human languages change through use. In particular, languages and grammars change because over time utterances are *repeated*. In what follows, I want to look at varieties of change which are brought about through routine repetition: I will use the term "ritualization" as a cover term for all of these related changes. Unlike many linguists who insist on the uniqueness and autonomy of language, I found it profitable (at least for my approach to this discussion) to compare language not only with other human institutions, but with the development of language-like behaviour (including ritual and play) in other animals. The first part of this essay accordingly deals with emancipation, habituation, and automatization in both human and non-human non-linguistic behaviour. Part two deals with the linguistic analogs of these: habituation as grammaticalization, automatization as double articulation, and emancipation as the genesis of coded forms.

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1. Non-linguistic ritualization

1.1 *Emancipation*

Wishing to copulate with the female dancing fly (which would as soon eat him as copulate), the male signals his availability by giving her as a "wedding present", a balloon of silk. While her attention is distracted in unbundling the package, he mounts her and then, if he is lucky, makes his getaway. (The package is empty.) On the basis of comparisons with closely related species which evince fragments of this extraordinary and all-too-human routine, Kessel (1955) has surmised that it became established in the following way: originally, the male dancing fly distracted the predaceous female with a distracting gift of a dead insect; at this point, the gift was purely instrumental. Later, the gift was interpreted as a signal to the female, a signal whose message was something like "this fly is available for mating". Originally, also, the male partially wrapped his tiny prey up in silk exuded from his anal glands, probably in order to subdue it: the silk, like the dead insect, had an instrumental function, and its similarity to "wrapping" was incidental. Finally, however, the male achieved his original "purpose" by giving the female the elaborated wrapping alone, and it is the wrapping which serves as the mating signal (Kessel 1955).

After this, any other examples of what I believe to be the same phenomenon will necessarily seem very tame. To give some idea of the generality of the phenomenon, however, I will list a few.

Item: the wolf's snarl as a preparation for aggression evolves into or is replaced (over time? in many interactions) by the same snarl as a signal of anger.

Item: the mare automatically lowers her head and bends her ears back when preparing to kick with her hind legs. The bent-back ears alone now function as a signal of hostility (Givón, ms.).

Item: the searching behaviour of bees at food sites (elements of which are attested in the behaviour of a number of other non-social and emphatically non-communicative insects) becomes stylized and evolves into the celebrated bee language (Frisch 1954; Bastock 1964; Dethier 1957).

These are paradigmatic examples of what ethologists since Tinbergen have been calling *ritualization* (cf. Tinbergen 1952; Morris 1956; Blest 1963; J. Smith 1966:168; H. Gleitman 1986):

in the course of evolution, both locomotory movements and acts (concerned with comfort, with heat regulation, and with the capture of prey) have been selected and modified to produce signals (Blest 1963:102).

In other words, ritualization is the creation of (a) language.

Ethologists and anthropologists have noted, incidentally, that ritual in many cases (though not all the ones that I have enumerated here) is akin to *play*. In both cases, an activity is found to occur when the animal is free of environmental and physiological pressures or in effect can take a holiday from the otherwise exceptionless rules of social hierarchy (Loizos 1966; Miller 1973). Structurally, the ritualized activity differs from the phylogenetically prior act which gives rise to it in its greater elaboration and its repetitive nature.

Both ethologists and anthropologists, then, have used the same word *ritualization* to describe the very general process whereby phylogenetically instrumental actions are *emancipated* from their primary motivation and free to serve a communicative function instead (Tinbergen 1952; Morris 1956; Blest 1963; Manning 1967; Callan 1970; Koenig 1970:64; Jurgens & Ploog 1974:34). In this sense, ritualization is the acquisition of meaning. A ritual is identified as one when it ceases to be a purely instrumental act and becomes a sign.

Codification, the creation of signs, is a dual transformation: on the one hand, the ritualized activity is regularized so that its form is relatively independent of (emancipated from) its original stimulus:

It is a basic property of simple signals, when these are contrasted with other types of response, that they remain constant in form regardless of any change in the circumstances which cause them. (Morris 1957:1)

Whereas stimuli of varying strength for the release of the unritualized precursors of display movements elicit responses of varying intensity and form, following ritualization, the derived responses acquire an almost constant form and intensity to a wide range of stimulus strengths. (Blest 1963:104)

A corollary to this *fixity of form* is that the ritualized act does not necessarily even occur in the same context as the act which is presumed to be ancestral to it (ibid. 116).

On the other hand, the form (of the ritual or the play) may become stylized and (when viewed in purely instrumental terms) hypertrophied to the point where it is actually dysfunctional (Daanje 1950; Morris 1956; Loizos 1966:7; Miller 1973:89,92). This hypertrophied stylization is characteristic not only of ritual, but of art in general:

[There is] a tendency on the part of human fantasy, once it is emancipated from the restraint of practical needs, to run riot... in medieval cathedrals, this sometimes went so far that Ruskin even discovered carvings in places where no human eye but his own — if we except the original worker — had probably ever beheld it. (Mumford 1960:69)

It has been suggested that stylization (insofar as it involves standardization) is nevertheless functionally motivated in two ways: first, a stylized signal is easier to recognize (Morris 1956:1; Manning 1967:138); and, second, it is easier to reproduce (Fonagy et al. 1983:173-4; Bolinger 1986:231), than a spontaneous gesture. I will yield once again to the irresistible urge to quote the wisdom of Lewis Mumford on the related transition from handwriting to movable type:

For the sake of legibility and universality, it was important that the human being who copied a book should achieve a certain kind of neutrality and impersonality,...making each letter conform to a common type, rigorously standardizing the product... After a copyist repeated the same letter a thousand times, his letters would achieve that impersonal quality... at which time [they] could be transferred into movable types. (Mumford 1960: 69).

The emancipation of art from its instrumental functions, succinctly summed up in the slogan "art for art's sake", is a characteristic of almost every human institution. A fine example of both emancipation and hypertrophied stylization is the very familiar ritual of a liberal arts college education in America today. The still barely discernible goal of such an education, to prepare the young for their lives and careers as adults, is reflected in the (by now) paradoxical-sounding ceremony of *commencement*, whose original meaning is but dimly recalled. The same emancipation from any practical application defines a great deal of what we call scholarship: a commentary on our values is that "esoteric knowledge" is more prestigious than "exoteric" or practical knowledge (cf. Veblen's *Theory of the Leisure Class* for the classic statement). Not only the university, but almost any bureaucracy affords a good illustration of an organization which has become "emancipated" from the original purpose for which it was created. The ritual nature of such institutional fixtures as "the news" have been searchingly analyzed by critics such as Boorstin (1962) and Richardson (1975).

1.2 Habituation

To be sure, an often repeated ritual can pall. With staleness comes very often a reduction of its formal manifestation, and although not always, a diminution of meaning. (We express this familiar insight with idioms like "a ritual apology".) Almost any abbreviated or sublimated gesture or verbal symbol of greeting or farewell, from a handshake to "goodbye" (cf. Firth 1972) is a ritual in this sense, as is any cliché, or the signing of one's own name. Ethologists sometimes use the term "ritualization" for this process of formal reduction also. Thus, Plooj (1978:123) in his discussion of beckoning behaviour among wild chimpanzees uses "ritualization" to describe the change whereby the abbreviated gesture of leaning slightly backwards comes to replace the original gesture of lying down.

All of these are good examples of what psychologists call *habituation* or adaptation: a decline in the tendency to respond to stimuli that have become familiar due to repeated or persistent exposure (Bassett & Warne 1919; Karsten 1928; Riggs et al. 1953; Lambert & Jakobovitz 1960; Smith & Raygor 1956; Peeke & Herz 1973; Gleitman op.cit 88,160,200). These investigators have provided quantitative proof for the homely proverbs that "you can get used to anything", that "familiarity breeds contempt", that "what we look at habitually, we overlook" (Mumford 1960:103). Repetition may lead to formal reduction (think of your signature), but independently of this, it may drain meaning away also. As Mumford puts it, "there are paintings by Van Gogh and Matisse and Picasso that are descending the swift slippery slope to oblivion by reason of the fact that they are on view at all times and everywhere" (Mumford 1960:102).

1.3 Automatization

But other things come with repetition as well. For example, the sequence of numbers

149162536496481100121144169196225.....

may seem impossible to learn as long as the student relies on memory alone. But as the sequence

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225,

it is learned in a moment. In the same way, while it is relatively difficult to learn a seven-digit telephone number, it *seems* easy to learn a seven-letter mnemonic like L-A-W-Y-E-R-S, or F-O-R C-A-R-S where each letter corresponds to a number. Or again: an expert telegraph operator receiving a coded message can keep six to twelve words behind the instrument when receiving: this means storing, on an average, about 200 clicks — a truly amazing achievement. On the other hand, if the clicks represent disconnected numbers, the most skilled operators can hold only three or four numbers at a time — a maximum of about twenty clicks (Bryan and Harter 1899:353-4). These are paradigm examples of *chunking* or *automatization*: the acquisition of what Bryan & Harter called “a hierarchy of habits” (Bryan & Harter 1897,1899; Gleitman op.cit. 233,270). Although objectively, *learning seven digits involves less information processing than learning a sequence of seven letters*, and the digits in the ascending sequence of squares are identical with the digits in the seemingly random list above it, nevertheless, the work seems to be less when the “principle” which generates the sequence has been learned. Strangely, this is true whether the principle is a real generalization, one which can be expressed as a mathematical formula (as in the case of the sequence of squares), or where the “principle” is simply a painfully acquired skill (as in the case of reading or reconstructing spelling from Morse). In either case, some computation is done automatically and in a sense “doesn’t count” as a burden on the person who performs it. Mere repetition leads to automatization as effectively as possession of a formula: “sheer plod makes plow down sillion/shine”.

I have sketchily reviewed three processes in evolution that are driven (at least in the world of human institutions) by repetition: the creation of signs, illustrated most vividly by the mating language of the balloon fly; the replacement of instrumental substance by “empty ritual”, illustrated by the trivialization of “the work of art in the age of mechanical reproduction”; and automatization, illustrated by the virtuosity of the experienced telegraph operator. The second and third processes find familiar analogs in traditional linguistics, where they are known as grammaticalization and double articulation.

2. Ritualization in language

2.1 Grammaticalization

“So common indeed was [the word fuck] in its adjectival form that after a short time the ear refused to acknowledge it and took in only the noun to which it was attached... Far from being an intensive to express strong emotion, it became merely a conventional excrescence. By adding -ing and -ingwell, an adjective and an adverb were formed and thrown into every sentence. It became so common that an effective way for the soldier to express emotion was to omit this word. Thus, if a sergeant said ‘Get your ---ing rifles!’ it was understood as a matter of routine. But if he said ‘Get your rifles!’ there was an immediate implication of emergency and danger. (Brophy and Partridge 1931:16f)

This is a paradigmatic example both of markedness reversal (Andersen 1972), and of ritualization in the sense used by Plooi. Another paradigmatic case of grammaticalization, quite parallel to the degeneration of the “---ing” word, is the erosion of referential pronouns with argument status to verbal agreement markers, the mechanics of which have been described in many languages and language families (cf. Meinhof 1936; Givón 1970,1976,1979; Haiman 1989a).

2.2 Double articulation

- My kid said his first word today!
- Well, my kid can say half a word.
- Oh yeah, what’s that?
- Mother.

In the end result of automatization, of course, we can also recognize *double articulation*: the smallest meaningful signs are made up of still smaller units which are themselves meaningless. This is of course a language universal the origins of which are almost as disreputable a subject of study as are the origins of human language itself (but cf. Wescott 1967).

The standard model of erosion whereby morphemes are reduced, first to bound affixes, then to phonemes, and finally to silence, may provide the observable mechanism whereby languages evolved double articulation (cf. Wescott 1967 and now Hopper 1990). Sounds now meaningless may have evolved originally from meaningful morphemes.

The physiologically mysterious process whereby for example the phone number L-A-W-Y-E-R-S is easier to remember than the corresponding sequence of digits, bears witness to automatization (cf. the well-known Stroop effect, Gleitman 1986:17 et passim), chunking, and double articulation. The recognized word "lawyers" involves a sequence of letters, but we count remembering this as a simpler act than remembering a sequence of random letters, or a sequence of digits, because the effort of having learned the spelling of the word is taken as a given. Before chunking, or automatization, learning the spelling of lawyers (or of any other word) involves no less work than learning any sequence of random letters. Automatization, it need hardly be emphasized, is the result of repetition. Erosion through repetition may be the major source of meaningless phonemes (and of "half-words" like "mother") in all human languages.

But perhaps not the only one. In any discussion of this structural property, we must note the ubiquity of double articulation. The genetic code of DNA and RNA, no less than English, is characterized by double articulation: codons (or, the "words" of DNA) are formed from sequences of three bases. The codon UCU is "meaningful", in that it forms a neutral acid called serine, and as such has "synonyms" like UCA, UCC, and UCG, but the base U (Uracil) has no such restriction or significance (cf. Ayala 1978).

The genesis of double articulation can also be observed in the simplest codes, like the Library of Congress classification system and the system of arithmetic: signs X, Y, Z (the minimal units in the code) have invariable meanings "x", "y", and "z". In principle, these are codes with single articulation, in which every sign is meaningful and has a single fixed denotation. But now consider the efflorescence of possibilities of meaning in the LC system for a single letter, say "B". Initially, it means "philosophy, religion"; but following other letters, it has other specific meanings: CB is "civilization" (within "history"); GB is "physical geography" (within "geography"); HB is "economics" (within "social sciences"); LB is "theory and practice" (within "education"); NB is "sculpture" (within "fine arts"); QB is "astronomy" (within "science"); and so on. A parallel, though somewhat impoverished efflorescence, is possible for the digits in the decimal system of notation, since the actual value of the quantity represented by any digit depends on its position relative to the decimal point. In both cases, the "grammar" of the code assigns a number of context-sensitive semantic rules:

sign X has meaning "x"/____A

sign X has meaning "y"/____B

...

sign X has meaning "*" / ____N

Even where the meaning of the sign is fixed by context, the more possibilities of meaning a sign has, the less of a meaning it has intrinsically. The difference between the various meanings of a digit in arithmetic is nevertheless smaller than the various meanings of a letter in the Library of Congress classification system. (Obviously: various meanings of a digit in arithmetic are related by a single simple rule, while various meanings of a letter in LC classification are not).

Cases of this sort, which I would like to call "creeping double articulation", may arise spontaneously in the context of any system of signs whose interpretation is determined by context-sensitive grammatical rules. On the origins of context-sensitivity, I have nothing whatever to say.

I do think however that it is highly likely that the converse of double articulation — a kind of codification or sign creation — often arises through repetition. What I have in mind is the creation of phonaesthemes like English <gl->, or <cr->, which are now associated with "a vague impression of light" or an equally vague "impression of crushing" as a result not of onomatopoeia, but of a number of coincidences. That is <gl-> has the associations that it does because of the prior existence of words like *gleam*, *glare*, *glow*, *glisten*, *glimmer*. (cf. Barthes 1972:119, cited in Goffman 1974:34fn: "chance is supposed to vary events; if it repeats them, it does so in order to signify something through them: to repeat is to signify". More homely is the repeated aphorism from the James Bond novels: "the first time it's coincidence; the second time it's happenstance; the third time it's enemy action".) Similar "promotion from the ranks" of the originally meaningless is observed in innovative forms like "tele-thon" and "pre-quel".

Rather than accepting double articulation as an irreducible given, we might get a handle on its origins by thinking of degrees of significance, with signs arranged in a hierarchy:

- | | |
|-----------------------------|---|
| Biggest (most "wordlike"): | 1. words, lexical morphemes |
| | 2. affixes, grammatical morphemes |
| intermediate signs: | 3. sub-morphemic sounds with associations |
| Smallest (most "soundlike") | 4. phonemes |

Through etymologically coincidental associations which are often repeated, phoneme sequences (4) may become phonaesthemes (3), thus acquiring significance. Through frequent repetition, lexical morphemes (1) may become grammatical affixes (2), thus losing significance. The first process corresponds to codification (of which more below), the second to habituation and automatization.

2.2.1 *The act of direct quotation*

Part of the driving mechanism which reduces words to meaningless sounds is erosion through repetition. In fact, *direct* quotation itself (essentially nothing more than the repetition of an utterance) does this kind of work through a single act: in saying "I quote" (or "I repeat"), the speaker is at least in principle disavowing a personal interest in the meaning of what s/he utters, and *imitating* what may well for the speaker be meaningless sounds. The same point is made by Quine in his many discussions of the use/mention distinction, among them the following:

From the standpoint of logical analysis, each whole quotation must be regarded as a single word or sign, whose parts count for no more than serifs or syllables. A quotation is not a description but a hieroglyph: it designates its object not by describing it in terms of other objects, but by picturing it. *The meaning of the whole does not depend upon the meanings of the constituent words.* (Quine 1965:26, emphasis supplied).

Quine could have been describing double articulation in this passage. That the internal structure of a quotation is not in itself significant, since it is the mere accurate imitation of the original which counts, is also an implicit insight of all programming languages like Pascal and LISP which distinguish fixed strings (in quotes) from concatenations of *interpretable* and manipulable symbols.

2.2.2 *Double articulation in clichés*

The insight that repetition drains meaning from words, converting them into phonemes, is also implicit in the use by many authors of hyphens to indicate *cliché phrases* which are reduced to the status of words (whose component words are thereby reduced to the status of Quine's "serifs, syllables", or phonemes):

But now those Democrats can find easy cover in the weak-kneed *it's-just-not-politically-feasible argument*. (David Corn: in *The Nation*, Sept 4/11, 1989).

"Nuts with that *ruining-me-in-this-town stuff*" I said. (Budd Schulberg, *What makes Sammy run?*, (1971:245).

– Show business is a *dog-eat-dog* world.
– No, it's worse. It's a *dog-doesn't-return-the-other-dog's-phone-calls* world.
(Woody Allen: *Crimes and misdemeanors*, cited in *People* magazine September 1989)

Moreover, when she loses at mah-jongg, she takes it like a sport, *not-like-the-others-whose-names-she-could-mention-but-she-won't-not-even-Tilly-Hochman-it's-just-too-petty-to-even-talk-about-let's-just-forget-she-ever-brought-it-up*. (Roth, *Portmoy's complaint*, (1969:12).)

But the essence of this orthographic insight is that all direct quotation (whether of the single utterance or of the oft-repeated cliché) is an act of *repetition*. It differs profoundly from the act of indirect quotation, which is essentially an intelligent act of *translation*: shifting from one code to another a message whose meaning is preserved. (A parrot may directly quote an utterance in an unknown language, but indirect quotation is beyond its powers).

It is notable that the rather *recherché* practice of rendering clichés with dashes parallels a more widespread practice, which is encountered in written representations of the act of "spelling out": one spells "lawyers" L-A-W-Y-E-R-S. To spell out a word, of course, is to represent it in its phonological articulation: again, the components between the dashes are understood to be themselves meaningless. And what makes them meaningless (I contend) is that they have been repeated.

2.2.3 *Repetition within the speech act itself*

There is clearly a pragmatic difference between repetition of a gesture within the same speech act (by a single speaker), and repetition of the speech act itself (by many people over time). Our discussion focusses on the second, the only one which is related to questions of diachrony. Still, there are both formal and semantic-pragmatic parallels between these kinds of repetition. By way of illustration, I should like to mention two otherwise totally dissimilar varieties of repetition within the single speech act: topic creation and sarcastic assent.

2.2.3.1 *Topic creation*

Direct quotation is not the only speech act which requires repetition. It is frequent in the chain of spoken language for speakers to introduce topics,