

PERSPECTIVES ON GRAMMATICALIZATION

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Ritualization and the Development of Language

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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, Plooi (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 excrement. 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 Plooij. 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-peety-to-even-talk-about-let's-just-forget-she-ever-brought-it-up.* (Roth, *Portnoy'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,

and then to repeat them. The schema

.....X. x.....

corresponds to the very frequent device of tail-head linkage between sentences (She picked it up. *Having picked it up*, she sneered at it), left-dislocation within sentences (The one-l lama, *he's* a priest), and anaphora of the protasis (*If you did that, then I'd believe you*). See Haiman 1978; Ochs 1983, among others.

Topicalization by repetition involves frequently a kind of grammatical downwards rankshifting of the second token of the repeated element. Predication is replaced by attribution; main clauses by complement clauses; full NP and full VP by pronouns and proverbs. This formal reduction, which is typical of the treatment of *old information*, is curiously parallel to the formal reduction of often repeated lexical items which degenerate to grammatical affixes.

2.2.3.2 Sarcastic assent

The most plausible interpretation of repetition is an iconic one: if you say something once, you maybe mean it, but if you say it two or three times, you *really* mean it. Thus, reduplication, as often noted, typically has the vaguely iconic function of signalling plurality or intensification (Haiman 1980).

It is therefore remarkable that repetition of signs of assent, like "sure", "right", "of course", or "yeah" signals not heartiness, but irony. Nor is this limited to colloquial American English. The same is noted by native language consultants for Turkish, Russian, Hungarian, and Oromo renditions of the expression "of course". To be sarcastic, the repeated words have to be pronounced in a weary deadpan way, of course: but for some reason, repetition helps to achieve this. I will return to possible reasons for this remarkable fact in my concluding remarks.

2.3 Aspects of emancipation

2.3.1 Phonologization

In the sound articulation of language, *phonologization* is a well-understood example of codification. Originally automatic or random fluctuations become phonologized (that is, both distinctive and uniform) when they are *emancipated* from their conditioning environments.

Owing to some imprecision in their formulation, some of the classic discussions of phonologization leave the erroneous impression that the pro-

cess is *caused* by the loss of the original conditioning environment. Thus a propos the phonologization of umlaut in MHG, Twaddell 1938/1957:87 states that "the phonetic differences are phonologized.. when the environmental differentiation is eliminated". Jakobson 1931/1972:136 says that "the loss of the reduced vowels (weak "jers") in the Slavic languages brought about [sic] a correlation of phonologization for consonants". A moment's reflection will show that the loss of the conditioning environment does not cause phonologization: it only demonstrates that phonologization has indeed occurred. Consider Twaddell's schematization of OHG umlaut, for example (where "U" represents the original phoneme /u/, with allophones [u] and [y], "x" represents a consonant (cluster) over which umlaut could occur, and "xx" represents a cluster over which umlaut was inhibited). In OHG, the umlaut rule (U → y/____xi), yielded the phonetic results of "stage 1", while in MHG, after the operation of a merger (a,i → ə), "we have" the phonetic results of "stage 2":

Inherited Form	Stage 1	Stage 2
Uxi	yxi	yxə
Uxxi	uxxi	uxxə
Uxa	uxa	uxxə

The question is, how do "we have" the latter results? Obviously, not by virtue of the umlaut rule, which by stage 2 has nothing to apply to. The inescapable conclusion is that already in stage 1, *before the conditioning environment has disappeared*, the contrast [u] ≠ [y] has been established as something that can be maintained. Emancipation from the phonetic stimulus precedes loss of the stimulus itself.

2.3.2 From connotation to denotation

In discussions of "cognitive" vs. "emotive" meaning, the primacy of the former is generally agreed upon (cf. Lyons 1967:449). It is denotation, not connotation, which is the business of the grammarian (just as it is culture, not individual personality, which is the business of the anthropologist). But ontologically, in the documented cases of ritualization, it seems to be connotation which came first. We might say that *denotation is emancipated connotation*. Schematically:

A symptomatic gesture or fidget (let us say, a cry of pain like [aaaa]) accompanies a psychological state. That is, originally the gesture *connotes*

the state. It becomes a signal which still *connotes* that state once it is recognized and responded to by some other animal. Finally, it becomes a sign (say, the English word "ouch") which *denotes* the state only once it is emancipated both from the stimulus which produced it originally, and from the motivated state of which it served as a signal. Denotation, like ritualization, occurs in consequence of this same process of emancipation. Recall the story of the dancing fly.

(That emancipation from its referent or "abstractness" is a crucial and defining property of a linguistic sign is wittily illustrated in an essay by Umberto Eco on mirrors. A reflection, he argues, cannot be a sign, because it is never emancipated from the stimulus which produces it. Since a mirror can never show anything other than what is in front of it, it is also incapable of providing significance through contrast. I owe to Lisa Miller the confirmatory counterexample: a reflection would be meaningful if vampires existed and had the miraculous property attributed to them of not having reflections. The "mirror code" would then have two contrasting signs, [+vampire] or [-vampire].)

2.3.3 Ritualization of stress

Consider the familiar contrast between *black bird* and *blackbird*. The latter, clearly a ritualized form (note that the incorporated morpheme *black-* has undergone the semantic bleaching characteristic of grammaticalized forms), is treated for stress purposes as a single word. The former is treated as two. It is misleadingly reductionist to characterize the difference as one between compound stress (stress on the first syllable) and nuclear stress (stress on the last syllable). The essential difference is between a single word whose predictable grammaticalized ictus is automatically on the first syllable, and between a string of two words either one of which may be stressed at the will of the speaker.

2.3.4 Ritualization of intonation

A frequently observed property of ritual or play activity is its stylization: the originally instrumental act when ritualized is rhythmically repeated, or its component parts exaggerated (Morris 1956a; Blest 1963:110; Loizos 1966:7; Miller 1973:89; Moore & Myerhoff 1977:7). How do analogs look in human language?

Uncoded natural signs (or symptoms) of anger, boredom, disgust, or excitement are universal (cf. Fonagy 1962, 1971a,b,c for some pioneering

studies). But they are not ritualized: Sebeok (1962:431) suggests that they are "codified" in analog terms, while other "rational" aspects of existence are codified in digital terms. What Jakobson called the *ars obligatoria* of Grammar (ritual or codification in our sense) begins formally, as we all seem to agree, with digitization. Digitization is perhaps necessary for intersubjectivity and replicability: it may be what distinguishes movable type from personal handwriting, linguistic from paralinguistic verbal behaviour, or, more generally, what distinguishes culture from personality. It is certainly one of the features which distinguishes ritual from spontaneous instrumental behaviour. A number of ethologists have commented on the feature of *typical intensity*: the tendency for a ritual gesture to remain constant irrespective of the force (or even of the presence) of the stimulus which produced it:

Postures or movements which have a typical intensity are more easily recognized but correspondingly convey less information about the signaller's motivational state. (Manning 1967:138)

The locus classicus is Morris 1956.

Conceptually, the ritualization of such symptoms occurs when the "exuded expressions" over which the speaker has no control, are replaced by "standardized vocal comments on circumstances that are not, or no longer, beyond emotional or physical control" (Goffman 1983:100,107). It occurs, in other words, where the universal symptomatic expression of pain, for example, is replaced by language-specific digitized coded signs like "ouch". Language begins, ritual begins, where etiquette begins, at the point where it becomes possible for the speaker to lie. For what is lying but a kind of emancipation from the external world? (In associating ritual with lying, I take issue with Gombrich (1966:398), who declares that "animals lack that distinctively human achievement, the lie". Insofar as animal communication through ritualization of gestures with a typical intensity is possible, to this extent, animals communicate something other than the way they feel.)

A sign of adulthood is the "insincerity" of originally autonomous actions. A smile is no longer the betrayal of a feeling but a purposive act intended to please. The hollow laugh and the crocodile tear are instinctive gestures that have become part of etiquette. (Bolinger 1975:20)

Mutatis mutandis, surely the same could be said of the courtship ritual of the male balloon fly.

As a theory of language origins, the historical change from the personal involuntary *aaaaargh* to the codified *ouch* seems suspect, if only

because involuntary expressions are controlled by different portions of the brain than human language: citing a recent dissertation, Bolinger suggests that:

Whereas language and tool using are related in the brain, language and primitive cries are not. In man, an electrical stimulus on the cortex — the region of highest organization — will cause vocalization; in animals the stimulus generally has to be applied below the cortex. This makes it highly unlikely that there was any direct transition from emotional noises to propositional language. (Bolinger 1975:315, citing Van Lancker 1974:chapter 5, p.5).

Bolinger's hesitation may be overcautious. Throughout the animal kingdom, ritualization is often marked precisely by "the transfer of the signal function from one set of effectors to another" (Blest 1963:110-1 enumerates some spectacular examples). More to the point, even higher level and demonstrably recent functions such as *reading* in humans take place in different brain locations, depending on whether the act is one of processing unfamiliar letter strings or the ritualized one of recognizing familiar vocabulary (Sieroff and Posner 1988; Sieroff Polatsek and Posner 1988; Posner et al. 1989: all cited in Givón and Gernsbacher ms.)

Almost completely lacking a palaeontology of language, as of most other behaviour, we should treat comparative observations of this sort as some of the best data we can build our speculations on. But not the only data.

With insignificant exceptions like "ouch" and "boo hoo", we cannot observe how words developed out of non-words: however far back we go, it seems that all our etymologies of words trace back to nothing but other older words. But, we may be able to observe the genesis of codification in the stereotyping of intonation, which, as it has often been noted, lies at the border between paralinguistic and linguistic behaviour. Although there is much stereotyping (codification) in this realm, it is inherently less digitally coded than morphosyntax, more inherently iconic (cf. Bolinger 1985), and more subject to personal variation.

The quintessentially ritualized or stereotyped intonation is the array of singsong chants (cf. Liberman's (1979) (M)HL in English), which signal clichés (cf. Ladd 1978, Fonagy et al. 1983). For reasons which we will get to in a moment, the ritual in the case of (M)HL is something uttered playfully, or whose informative meaning is not attended to.

A good locus of singsong intonation cross-linguistically is in the self-

conscious repetition of phrases that are felt to be clichés. Among these are

- a. stale proverbs which the speaker feels to be irrelevant or dull;
- b. clichés of greeting etc. (cf. Fonagy et al. op cit.)
- c. rote speeches of instruction, greeting, etc. uttered by those whose sad business it is to deliver them *repeatedly* (auctioneers, bus drivers, receptionists, telephone operators, clerks, airline stewardesses) — mostly, as it happens, women (cf. Justice, ms., but cf. also Kuiper and Haggo 1984).

It also occurs (relatively infrequently, but with impeccable semantic motivation, cf. Haiman 1989b, 1990) in

- d. utterances which are intended playfully or sarcastically. Examples of clichés so uttered with the (L)HM melody with which most of us are highly familiar include "Too bad", "Never mind", "Thank you", "Sorr-eee" or "Oh boy", uttered to the tune of "Ho-hum" (Bolinger 1986:230) or "Boring".

A more complex example of the same (L)HM melody occurs at one point in the Jonathan Demme film *Married to the Mob*, where the philanthropic villain, in a nightmare, is confronted by his homicidally jealous wife. Aiming a rifle at his groin she smiles sweetly and chants:

L H M

"Kiss it good-by eee"

Another example is in the Ziggy cartoon in Figure 1.

Ziggy / By Tom Wilson



Figure 1

The (L)HM is not the only ritualized or stylized intonation in English, of course. Another is LH, which is similarly ironic when used for stylized expressions of congratulation:

L H
 Waita go, dad
 Good job
 Nice going

What is most remarkable about singsong intonation not only in these examples, but in a variety of languages where I have observed it is that it correlates with much the same range of (meta-) messages: one of these is what Bolinger (1986:231) calls the meta-message that "everybody knows". Another is predictability or boredom, the meta-message "here we go again" (cf. Ladd 1978:520, Kuiper and Haggio 1984:216). Another is playfulness or sarcasm, the meta-message "I don't mean this" or "this is play" (cf. Bateson 1955; Fonagy et al. 1983:157,178). It is playfulness, of course, which is signalled by the homicidal wife in *Married to the Mob* and by the sadistic waitress in the Ziggy cartoon of figure 1. Why is singsong never used to code anger, grief, shame, or ecstasy (to cite some paralinguistic and personal messages)? Why is it never used to code interrogation (to cite only the most impeccably "grammatical" message)?

Repetition alone is not enough to explain this restriction: people have been expressing emotions and asking questions for some time. But *self-conscious* repetition is something else. What is common to each of the meta-messages which singsong intonation can be used to code is precisely this:

"I am repeating";
 "I quote".

(That is why I am bored, insincere, playful.) Here are some striking examples of the (L)HM chant, accompanied by commentaries from the speakers who produced them.

In American English: "Bo-ring", "too bad", "sor-ree" etc.

In Turkish: the expressions *şeker çocuk* "sweet child" or *zavallı çocuk* "poor child" can be uttered in a singsong fashion. When so uttered, they are no longer expressions of compassion or appreciation, but of sarcastic denigration. One consultant suggests that the first can be addressed to a close friend (and only to such a friend: other people might take offence) who "did something wrong, but is acting innocent". The understood mes-

sage is "I'm on to you, you hypocrite". To call someone's name on this same melody (HM) is "acceptable for women: for a man to do this is sarcastic, and equivalent to calling the person named a sissy". The expression *tabi, tabi* "sure sure" uttered in normal form can be an expression of agreement. Chanted as a HM melody, it denotes sarcastic agreement, exactly as does English "sure, sure", or "yeah, right". The singsong melody of the lexical representation of weeping *y hy hy hy hy* conveys the same sarcasm. The expression *dikkat* "watch out" uttered with this melody is similarly playful: "you might imagine 'warning' someone in this way who was about to get water dumped on him as he lay on the beach — as if to say, 'you're gone'." Alternatively, it could be uttered in the same way as "oops", "by a teacher to a student who got a wrong answer". In the same way that a schoolteacher's question is not a sincere question (inasmuch as the teacher knows the answer s/he is trying to elicit), the schoolteacher's warning is not a sincere warning: the frame of the classroom is far removed from the dangers of the real world.

In Korean: the expression *čušim he* "watch out" is restricted to girls only. The reason given by my (female) consultant was that there was a connotation of non-seriousness.(?)

In Classical Arabic: the expression *hedaađim* "big", when uttered in a singsong fashion is sarcastic, and means something like our "big deal". A name called on this chanted melody connotes a teasing reproach to someone small who has done something wrong.

In Russian: the expression *konečno, konečno* "sure, sure" has the same interpretation as our sarcastic "sure, sure" when it is uttered in a singsong chant.

In Berber: the expression *sm he jii* "excuse me" is meant sarcastically when the final syllable [jii] "me" is lengthened, and the melody is stylized.

Perhaps singsong is one means of marking an oft repeated cliché. But another one may be the mimicry of the act of repetition itself. I suggest that a possible reason for the sarcastic flavour of repeated "yeah, yeah" is that speakers who repeat such expressions are themselves *mimicking the process* whereby these words, like any others, have lost their original meanings through repetition by other speakers. It is notable that sarcastic repetitions are uttered on a series of downstepped tones, mimicking a fading of intensity over time.

2.3.5 Ritual language

If language is action emancipated from an instrumental function, ritual language is language which has been emancipated from meaning. Its formal properties and development are both accessible, and of the highest interest.

Goffman's classic *Frame Analysis* (1974) can be read with profit by any linguist who makes the effort to substitute the word "code" for Goffman's "frame". The fundamental insight of this profound study is not that frames determine our perception of "objective reality" — this is already familiar to linguists from Sapir and Whorf, and to everybody else from the poets. Rather, it is the recognition that mutually exclusive languages or personal attitudes are not the only codes there are. Quite the contrary: in any situation, and at the disposal of any person, there are simultaneously shimmering a number of overlapping, superimposed, alternative codes. And, at the very heart of Goffman's discussion lies the important idea that any given event may be viewed through what he calls "successive laminations" or *codes within codes*. Ritualization may be thought of as a repeated process of lamination or emancipation from brute reality.

As human acts (like expressive cries of rage and pain) become emancipated from the laws of nature, they become what Goffman calls stereotyped "willed doings" — cultural facts. As cultural acts become in their turn liberated from functional or instrumental purposes, they become "symbolic" or magical communicative gestures — of these, the most important are the gestures which comprise spoken language, and the most instrumental function of language is to make others do one's bidding. As language becomes liberated from its instrumental (magical) function, it becomes referential. As referential language becomes liberated from even this abstract communicative function of imparting referential meaning it becomes ritual (either ludic or phatic): grammaticalized as phatic communication or as ritual, language and culture reach their highest degree of playfulness, abstraction, or liberation from the natural world of brute reality (cf. Callan 1970; Tambiah 1968:179; Koenig 1970:64; Jurgens & Ploog 1974:34; Wheelock 1982:57). A marvellously compact demonstration of the transformation of the originally expressive language of obscenity into purely ritual or phatic communication is afforded by the interchange between Dilbert and the mechanic below.

Dilbert / By Scott Adams

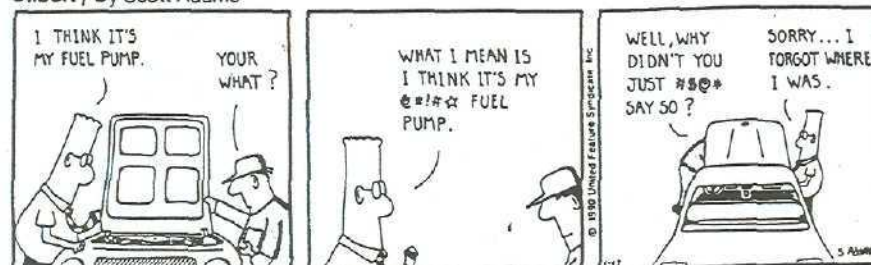


Figure 2

How do these "successive laminations", this emancipation, this stereotyping, occur in ritualized behaviour? Margaret Mead (1973:90) suggests that

It is of the essence of ritual that those who participate in it have participated before.

One may, of course, participate in a ritual for the first time. But it is essential that those who participate are following a model that has been established (perhaps by others) who have participated before: if not in that exact ritual, then in others that are similar. (This is true even of invented rituals or rituals of "junction" (Moore & Myerhoff 1977:7), which celebrate unique events. It is arguably even true of unprecedented acts whose onlookers spontaneously realize that "something sacred has happened here", their recognition depending largely on whether they have rehearsed the ritual in their heads.)

Gombrich (1966:399) makes a similar point, but in a rather less respectful way:

It may have been liberating for Jackson Pollock to break all bonds and pour his paint on the canvas, but once everybody does it, it becomes a ritual in the modern sense of the term, a mere trick that can be learned and gone through without emotion.

That is, acts are not only *invested with* meaning through repetition: they may be emancipated from (among other things) meaning by the same process. Ritual is born (at least in part) through repetition. In the same way, ritual language is born from repetition of ordinary language. If ritual

language develops from ordinary language through repetition of the latter, we can account for a remarkable but really puzzling fact: ritual language does (often) resemble ordinary language (cf. Wheelock 1982:60, who remarks that this is "obvious"). The Lord's Prayer, for example, is made up of phrases in English that can be understood by speakers of English and translated into phrases of any other language. Previous investigators have understandably chosen to emphasize ways in which ritual speech is keyed to be understood as distinct from ordinary language, but the first fact which requires explanation is that ritual language in cases of this sort IS recognizably pretty much the same as the "real life" language from which it stands apart. (So, too, ethologists like Tinbergen have typically succeeded in showing how ritualized communicative behaviour can be recognized as deriving from similar autochthonous non-communicative behaviour.) In saying that ritualized language comes from repeated ordinary language, we have accounted for this (very familiar) similarity. Otherwise, this resemblance which we can and should dismiss as both obvious and banal, would have to be treated as an intriguing and inexplicable coincidence.

Even more striking than the similarity between ritual and everyday language are some of the recurrent differences between them, admirably summarized in DuBois (1986). Two of the distinctive features of ritual or formulaic language which DuBois enumerates are already familiar from our earlier discussion of superficially unrelated speech genres. Among them are *stylized intonation* (for example: Quiche "stylized intonation contour", Seneca "short staccato phrases with a final rising tone, followed by a closing phrase with a fixed falling melody"; Cuna "chanted intonation"; Kiriwina "singsong"); and what DuBois calls *gestalt form* (for example: Kiriwinian magicians as a rule cannot repeat spells slowly or piecemeal; Mojave informants apparently experience great difficulty in slowing down the sequence of memorized texts). The latter we recognize as characteristic even of the orthography of the oft-repeated cliché.

3. Conclusion: A plea for repetition

The infinite creativity of language is a given of current theoretical approaches (so much so that paeans in its praise have come, paradoxically, to typify the very opposite). There can be no denying the fundamental fact that finite linguistic codes are adapted for conveying an infinite number of

possible messages. When, however, we look at what *makes* these codes finite — design features like digitization and double articulation — it seems likely that they arose precisely through repetition and the stylization of form and habituated response that repetition gives rise to. And when we look at what makes these codes change over time — and formal reduction through grammaticalization is certainly one of the universal changes which all languages undergo — then again it seems likely that repetition is the motor which drives this very basic process.

Unquestionably, the uniqueness of human language seems to deride evolutionary theories of its origin. Nevertheless, the biological evolutionary genesis and decay of signs in the animal kingdom exhibits intriguing formal parallels with the social and psychological genesis of ritual in humans (cf. Moynihan 1970). And, while the physiology of ritualization in human beings is unknown, it seems overwhelmingly likely that repetition plays an important and insufficiently appreciated part in its development.

References

- Andersen, H. 1972. "Diphthongization". *Language* 48:11-50.
- Ayala, F. 1978. "The mechanism of evolution". *Scientific American* September 1978:56-69.
- Bassett, M. & L. Warne, 1919. "On the lapse of verbal meaning with repetition". *American Journal of Psychology* 30:415-8.
- Bastock, M. 1964. "Communication in bees". *Penguin Science Survey B*, 181-200. Harmondsworth: Penguin.
- Blest, A. 1963. "The concept of 'ritualization'". *Current Problems in Animal behaviour*, ed. by W. Thorpe & O. Zangwill, 102-25. Cambridge: Cambridge University Press.
- Bolinger, D. 1975. *Aspects of Language*. (2nd edition). New York: Harcourt Brace Jovanovich.
- . 1986. *Intonation and its Parts*. Stanford: Stanford University Press.
- Boorstin, D. 1962. *The Image*. New York: Atheneum.
- Brophy, J. & E. Partridge. 1931. *Songs and Slang of the British Soldier: 1914-1918*. (3rd edition). London: Routledge & Kegan Paul.
- Bryan, W. & N. Harter. 1899. "Studies on the telegraphic language: the acquisition of a hierarchy of habits". *Psychological Review* 6/4:345-75.
- Callan, H. 1970. *Ethology and Society*. Oxford: Oxford University Press.
- Daanje, A.. 1950. "On locomotory movements in birds". *Behaviour* 3:48-98.
- Dethier, V. 1957. "Communication by insects". *Science* 125:331-6.
- Du Bois, J. 1986. "Self-evidence and ritual speech". *Evidentials: The Linguistic Coding of Epistemology*, ed. by W. Chafe & J. Nichols, 313-33. Norwood, NJ: Ablex.

- Firth, R. 1972. "Verbal and bodily rituals of greeting". *The Interpretation of Ritual*, ed. by J. LaFontaine, 1-38. London: Tavistock.
- Fonagy, I. 1971a. "The functions of vocal style". *Literary Style: a symposium*, ed. by S. Chatman, 159-76. London: Oxford University Press.
- . 1971b. "Synthèse de l'ironie". *Phonetica* 23:42-51.
- . 1980. "Preverbal communication and linguistic evolution". *The Relationship of Verbal and Non-Verbal Communication*, ed. by M.R. Key, 167-84. The Hague: Mouton.
- Fonagy, I. et al. 1983. "Clichés mélodiques". *Folia Linguistica* 17:153-85.
- Frisch, K. v. 1954. *The Dancing Bees*. London: Methuen.
- Givón, T. 1970. "The resolution of gender conflicts in Bantu conjunction". *CLS* 6.
- . 1976. "Topic, pronoun, and grammatical agreement". *Subject and Topic*, ed. by C. Li. New York: Academic Press.
- . 1979. *On Understanding Grammar*. New York: Academic Press.
- . 1990. "Syntax: A function-typological introduction. Volume II (chapter 21). Amsterdam/Philadelphia: John Benjamins.
- Givón, T. & M. Gernsbacher. ms. "The processing of second language vocabulary: From attended to automated word-recognition".
- Gleitman, H. 1986. *Psychology*. (2nd edition). New York: Norton.
- Goffman, E. 1974. *Frame analysis*. New York: Harper.
- . 1983. "Response cries". *Forms of Talk*. (2nd edition). 78-123. Philadelphia: University of Pennsylvania Press.
- Gombrich, E.H. 1966. "Ritualized gesture and expression in art". *A Discussion on Ritualization of Behaviour in Animals and Men*, ed. by Julian Huxley. 393-401. (= *Philosophical transactions of the Royal Society of London*, series B, 251.)
- Haiman, J. 1978. "Conditionals are topics". *Language* 54:565-89.
- . 1980. "The iconicity of grammar". *Language* 56:515-40.
- . 1989a. "From V/2 to verb agreement". *Grammaticalization*, ed. by E. Traugott & B. Heine (eds). Amsterdam/Philadelphia: John Benjamins.
- . 1989b. "Alienation in grammar". *Studies in Language* 13:129-70.
- . 1990. "Sarcasm as theater". *Cognitive Linguistics* 2:186-209.
- Hopper, P. 1990. "Phonogenesis". (this volume)
- Jakobson, R. 1931/1972. "Principles of historical phonology". *A Reader in Historical Linguistics*, ed. by A. Keiler, 121-38. New York: Holt.
- Jurgens, U. & D. Ploog. 1974. *Von der Ethologie zur Psychologie*. München: Beck.
- Justice, D. ms. "Etymology of a prosodic shift: enallage ictus".
- Karsten, A. 1928. "Psychische Sättigung". *Psychologische Forschungen* 10:142-254.
- Kessel, E. 1955. "The mating activity of balloon flies". *Journal of Systematic Zoology* 4:97-104.
- Koening, 1970. *Kultur und Verhaltensforschung: Einführung in die Kulturtheorie*. München: Beck.
- Kuiper, K. and D. Haggio. 1984. "Livestock auctions, oral poetry, and ordinary language". *Language in Society* 13:205-34.
- Ladd, R. 1978. "Stylized intonation". *Language* 54:517-40.

- Lambert, W. & L. Jakobovitz. 1960. "Verbal satiation and changes in the intensity of meaning". *Journal of Experimental Psychology* 60:376-83.
- Lieberman, M. 1979. "The intonational system of English". Indiana University Linguistics Club.
- Loizos, C. 1966. "Play in Mammals". *Play, Exploration, and Territoriality in Mammals*, ed. by P.A. Jewell & C. Loizos, 1-9. (= *Symposia of the Zoological Society of London*, 18). London: Academic Press.
- Lyons, J. 1968. *An Introduction to Theoretical Linguistics*. Cambridge: Cambridge University Press.
- Manning, A. 1967. *An Introduction to Animal Behaviour*. New York: Addison-Wesley.
- Mead, M. 1973. "Ritual and social crisis". *Shaughnessy* 87-101.
- Meinhof, C. 1936. *Die Entstehung flektierender Sprachen*. Berlin: Reimer.
- Miller, S. 1973. "Ends, means, and galumphing". *American Anthropologist* 75:87-98.
- Moore, S. & B. Myerhoff. 1977. "Introduction". *Secular Ritual*, ed. by S. Moore & B. Myerhoff, 3-24. Amsterdam: Van Gorcum.
- Morris, D. 1956. "Typical intensity and its relation to the problem of ritualization". *Behaviour* 11:1-12.
- Moynihan, M. 1970. "Control, suppression, decay, disappearance, and replacement of displays". *Journal of Theoretical Biology* 29:85-112.
- Mumford, L. 1960. *Art and Technics*. New York: Columbia University Press.
- Ochs, E. 1983. "Making it last". *Acquiring Conversational Competence*, ed. by E. Ochs & B. Schieffelin. London: Routledge & Kegan Paul.
- Plooi, F.X. 1978. "Traits of language in wild chimpanzees?" *Action, Gesture, and Symbol*, ed. by A. Lock, 111-32. London: Academic Press.
- Posner, M. et al. 1989. "Is word-recognition automatic? A cognitive-anatomical approach". *Journal of Cognitive Neuroscience*.
- Quine, W. 1965. *Mathematical Logic*. Cambridge: Harvard University Press.
- Richardson, J. 1975. "Six O'clock Prayers". *Harper's* 1975:34-8.
- Riggs, L. 1953. "The disappearance of steadily fixated visual test objects". *Journal of the Optical Society of America* 43:495-501.
- Sebeok, T. 1962. "Coding in the evolution of signalling behavior". *Behavioral Science* 7/4:30-42.
- Shaughnessy, J. (ed.) 1973. *The Roots of Ritual*. Grand Rapids: Eerdmans.
- Sieroff, E. et al. 1988. "Recognition of visual letter strings following injury to the posterior visual attention system". *Cognitive Neuropsychology* 5.4.
- Sieroff, E. & M. Posner. 1988. "Cueing spatial attention during processing of words and letter strings in normals". *Cognitive Neuropsychology* 5.4.
- Smith, D. & A. Raygor. 1956. "Verbal satiation and personality". *Journal of Abnormal and Social Psychology* 52:323-6.
- Tambiah, E.S. 1968. "The magical power of words". *Man* 3/2:175-208.
- Thorpe, W. 1956. *Learning and Instinct in Animals*. London: Methuen.
- . 1958a. "The learning of song patterns by birds". *Ibis* 100:535-70.
- Tinbergen N. 1952. "'Derived' activities: their causation, biological significance, origin, and emancipation during evolution". *Quarterly Review of Biology* 27:1-32.
- Twaddell, W. 1938/1957. "A note on Old High German Umlaut". *Readings in Linguistics*, Volume I, ed. by M. Joos, 85-8. Chicago: University of Chicago Press.

- Werner, H. & B. Kaplan. 1963. *Symbol Formation: An Organismic-Developmental Approach to Language and the Expression of Thought*. New York: Wiley.
- Wescott, R. 1967. "The evolution of language: reopening a closed subject". *Studies in Linguistics* 19:67-81.
- Wheelock, W. 1982. "The problem of ritual language: from information to situation". *Journal of the American Academy of Religion* 50:49-71.