On the Linguistic Properties of Formulaic Speech

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In the study of oral-formulaic performance the formula has always been understood as playing a pivotal role (Lord 1960, Foley 1995). But although it is clearly a linguistic unit, the technical study of formulae by linguists has been slight. This paper intends to remedy this lack by proposing some linguistic theories as to the nature of the formula. They will take the form of formal and testable proposals. By formal I mean mathematically modelled.

Why place such a study before the readers of *Oral Tradition*? Two preliminary observations are in order. First, it has become clear over the last twenty years that the use of formulae is not restricted to the performance of oral literature (Edwards and Sienkewicz 1990). The theories developed below draw on the study of vernacular oral traditions and specifically on the author's work on some of these traditions (Kuiper 1996). It is not intended that this should be a slight on the work of others. It is just that mine is the only work I know of that looks at formulae from a technical perspective (cp. Pawley 1991 and 1992). However, the theories proposed are intended to generalize to formulaic speech used for the performance of oral literature.[1]

Second, the work being attempted here is essentially cross-disciplinary between the post-Lord study of formulaic literature and the linguistic study of formulaic speech. As such it attempts to explain the properties of formulae via formalisms used in linguistics. The cost of this is that such formalisms may not be familiar to a number of the scholars working on formulaic speech within a more literary or ethnographic tradition. However, it should be clear that formulae are linguistic units and as such the formalisms of linguistics are appropriate, not to say, the appropriate tools with which to study the linguistic properties of formulae. While there are some costs for scholars who may be unfamiliar with contemporary linguistics in understanding what such tools have to offer, the

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[1] The literature relating to this field is summarized in Foley 1988 and 1990.

benefits of cross-disciplinary study are that the approach taken by another discipline has the potential to illuminate aspects of the phenomena under study that are not available elsewhere. Since those who are most interested in oral-formulaic traditions have the most to gain, I present the material below in the hope that it does illuminate aspects of the formula and formulaic speech that have been left rather in the dark.

Some Preliminary Distinctions

Since the formula has a multifaceted character, understanding the formula as linguistic unit requires making a number of distinctions commonly drawn in linguistics. It is, first, part of the internalized linguistic resources of a speaker, the speaker's linguistic competence (Chomsky 1965), the speaker's I (for internalized) language (1986). Second, it is part of a linguistic tradition; that is, it is a social fact, a unit of a language external to a single individual, what Chomsky calls an E language (1986). Third, it is a unit used in speech, what Chomsky terms performance (1965). Chomskian performance with a small "p" needs to be distinguished from performance with a capital "P," the object of study of performance theorists such as Bauman (1986). To understand the nature of the formula involves looking at all three of these aspects of the formula.

Internal Constraints: The Role of Memory in Performance

Our aim is to understand both how formulae are stored and retrieved from memory and how they are used in the production of speech. We will suppose that one critical function of formulae is to limit the linguistic resources of a speaker when that speaker's working memory is under pressure. This idea, at least in embryo, goes back to Lord: "The singer's mode of composition is dictated by the demands of performance at high speed" (1960:65). I will assume that high speed performance makes greater demands on working memory than slower speech does. The support for that view will require some unraveling.

One of the oldest concerns in the modern study of linguistic performance—the way humans use language in speech—is the impact of human memory on performance. Miller and Chomsky (1963) showed that while syntactic center embedding in sentences such as "The boy the man the people loved saw died" is grammatical, that is, allowable by the rules of grammatical competence; nevertheless, people cannot understand the

grammatical structure of such a sentence when it is spoken. This is because human beings have a limited short-term or working memory. Center embedded structures require that earlier syntactic constituents of sentences are remembered while later units are being processed. When the depth of center embedding gets down below two levels, human working memory capacity gives up. However, people can decipher such a sentence when given a pencil and paper, since with that support nothing is required to remain in working memory. It can all be written down. This experiment shows that the shortfall from which the problem stems is not the speaker's knowledge of the structural properties of his or her grammar.

The hypothesis that human working memory is quite limited is now well established. George Miller (1956) suggests that its size is seven plus or minus two chunks. A "chunk," roughly speaking, is a structured set of information that has a single address in memory. It appears that human beings can only access instantaneously—that is, hold in working memory— between five and nine of such chunks. That may be a slightly low estimate but it is close enough for our purposes.[2] Frazier and Clifton (1996) and Marcus (1980), for instance, base their theories of human ability to reconstruct the grammatical structure of sentences while they are heard on the assumption of a limited working memory.

Suppose, following Newell and Simon (1972) and Baddeley (1990), that human beings have at least two kinds of memory: long-term or encyclopedic memory, and short-term or working memory. Everything that we remember and can later recall from memory is placed in long-term memory, which has the following relevant properties: it is unfillable in a finite lifetime and recall from it is normally rapid. Human working memory is a much smaller memory store where chunks of information are held while they are being used for some kind of processing. For example, in order to use in a sentence the information that someone was born in 1918, that fact must first be recalled from long-term memory and placed in working memory so that it can be given linguistic form. To recall a face, we first need to extract a representation of it from long-term memory and then make it accessible by placing it in working memory.

The use of working memory in sentence production can be seen clearly when we look at how a speaker goes about constructing a simple sentence such as the following: "The woman who owned the store has decided to return, hasn't she?" In order to produce this sentence in the correct grammatical form, the speaker must remember a number of chunks of grammatical information, including the following:

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[2] See Baddeley 1990 for an account of human memory.

1. the number, person, and gender of the subject of the sentence
2. the fact that there is no negative after the first auxiliary verb in the main clause of the sentence
3. the tense of the first auxiliary verb
4. the first auxiliary verb itself

The first chunk of information has to be kept in short-term memory because the form of the first auxiliary verb *have* depends on it. In the case of a third person singular subject, the present tense auxiliary will be *has* and not *have*. This chunk must also be retained in working memory because the final pronoun in the sentence gains its form from this information. The second chunk of information must be held in working memory because the tag question that follows the comma at the end of the sentence will have a negative if the statement preceding it does not, and vice versa. The third chunk of information must be remembered because the tense of the tag question must match it. The same goes for the first auxiliary verb. Note also that the part of the sentence between the fourth chunk of information and the point in the sentence where the information is required is of indeterminate length. However, because sentences are grammatically planned, all this must be held in working memory pending its potential use.

The conclusion we can therefore draw is that speakers who are producing novel utterances must have a reasonable portion of working memory available in order to be able to speak. Oral-formulaic performers also have need of working memory resources to be singers of tales. Producing metrical lines of poetry at speed like those sung by the South Slavic *guslari* studied by Lord requires memory resources. The poet, for example, must, at any stage during the production of the poem, know where he is within the structure of the whole as well as keep a live, mobile audience interested in the performance. It thus seems that memory resources in addition to those of "normal" speech are required if we are to suppose that oral poets make everything up from scratch. After Lord's work, that is no longer supposed. In what follows I intend to explain what makes it possible, psychologically, for oral-formulaic performers to speak given the kind of pressure that they are under.

Memory constraints are only one internal constraint on performance. Speech must be constructed in such a way as to be *intentional*. Speakers have intentions in speaking, and endeavor, by speaking, to have hearers infer those intentions (Sperber and Wilson 1986). A great deal of speech production must also be automatic, since speakers, having made up their minds what they wish to say, must leave the brain to get on with low-level

(albeit complex) processes such as articulation without interference. This allows them to get on with planning the next unit of speech.

Speech production must also be *compositional* since the whole of what is said must be made out of parts. Levelt (1989) supposes that speech is composed in a lockstep fashion, starting with speaker's intentions and followed by the selection of an appropriate message representation of what the speaker wishes to say. The required words are then selected. The words in turn structure the syntactic sequence the speaker is going to produce. The syntactic sequence of words is then related to the articulatory sequences in which the sentence is spoken. Such a process is both compositional and analytical. It is analytical in that the speaker breaks down his or her intentions into the words that are required to give form to those communicative intentions. It is compositional in that it supposes that speakers create utterances, as it were from the ground up, out of words.

Levelt also supposes that speech is constructed by a series of parallel processes that are relatively autonomous (1989:14). Each processor accepts information from others but carries on its work independently. This order is necessary to ensure that there are not long stretches of waiting while one processor—for example, the one that constructs the surface form of the sentence—finishes its work before the one that looks after the pronunciation of the sentence can get started. If an understanding of oral-formulaic speech is to have any firm explanatory force, then in at least some of these areas of internal constraint, oral-formulaic speech must create a more efficient way of speaking when speakers, including the performers of oral literature, are subject to heavy working memory loading.

Recall that I am assuming that all oral performers are under some degree of working memory constraint and, following Lord (1960) and Kuiper (1996), that those who perform oral heroic poetry and, for example, the commentaries of fast sports and rapid auctions are under a greater than normal degree of such constraint. Thus I further assume that they will seek means of reducing their linguistic options, that is, their search space in memory, as they speak. After looking at the formal properties of oral-formulaic speech we will be in a position to see how the linguistic resources used by oral-formulaic performers make that possible.

External Constraints on Performance: Routine Contexts

Much of living in a society involves interacting with other people in predictable ways. Not all of what we do needs to be predictable in every

respect, but much of it must be to some degree. The linguist Charles Ferguson describes an interesting experiment (1976:140):

> To see what the result would be, I simply did not reply verbally to her [his secretary's] good morning. Instead I smiled in a friendly way and through the next day behaved as usual. The next morning I did the same thing. The second day was full of tension. I got strange looks not only from the secretary but from several others on the staff, and there was a definite air of "What's the matter with Ferguson?" I abandoned the experiment on the third day because I was afraid of the explosion and the lasting consequences.

Experiments like this can be conducted in a wide variety of contexts. For example, a caller on the telephone can become very disconcerted if the person picking up the receiver does not say anything. (Very young children, for example, do this.) The discomfort comes about because, in our society, the person answering the call is supposed to announce himself or herself somehow. It is a social convention. There is a large literature on such social conventions, and this is not the place to summarize it. But I will assume, and with good cause, that there are conventions that order the way social events are perceived and the way social life is conducted. Sometimes there is a measure of freedom within such conventions (Chomsky 1988:5): "The normal use of language is thus free and undetermined but yet appropriate to situations; and it is recognized as appropriate by other participants in the discourse situation who might have reacted in similar ways and whose thoughts, evoked by this discourse, correspond to those of the speaker." But in many circumstances we have little option as encultured human beings but to do and say what our culture constrains us to do and say, and speech itself, taking the specific forms that it does, structures our social realities.

Oral-formulaic performance could be a factor in providing an explanation of the way in which speech is matched with context. Again, after looking in detail at the nature of oral-formulaic performance we will be able to see how this is so. In summary, an oral-formulaic performer, like anyone who is speaking, is subject to constraints from two sources: his or her internal psychological limitations, and limitations placed on the speaker as a result of being an encultured human being who is required to behave in culturally sanctioned ways in order to be considered a native of the culture they inhabit. The kinds of discourse that such performers enact create a special role for formulae. Formulae may therefore be a response to the two kinds of constraints on performance discussed so far. To illustrate this dynamics will be the burden of what follows.

Discourse Structure Rules

In early studies of formulaic speech, pioneers like Parry and Lord note that the oral poems they study contain certain themes. What they mean by themes is not precisely defined. Lord's definition and description of themes will suffice as a starting point:

> I have called the groups of ideas regularly used in telling a tale in the formulaic style of traditional song the "themes" of the poetry (Lord 1960:68).

> Although he [the singer] thinks of the theme as a unit, it can be broken down into smaller parts: the receipt of the letter, the summoning of the council, and so forth (71).

> Although the themes lead naturally from one to another to form a song which exists as a whole in the singer's mind with Aristotelian beginning, middle, and end, the units within this whole, the themes, have a semi-independent life of their own. The theme in oral poetry exists at one and the same time in and for itself and for the whole song (94).

It seems that themes have two aspects. One is internal form. Themes deal with one significant episode, such as the sending of a letter, the arming of a warrior, the departure for battle. Episodes consist of a sequence of events that take place in roughly the same order whenever they appear, with optional elements. The other aspect is the significance that the episode has in the total story, in other words, where it fits in the larger structure. We may suppose then that themes are episodes that have internal sequential structure. Thus we can model themes by supposing them to be rule-governed; the parameters that provide their structure we will term "discourse structure rules." The set of rules that define the structure of a genre or text type we will term its "discourse grammar." Discourse structure rules define the structure of the episode in that they give the order of its constituent events, or the sequence of items in a description. Note that we are not necessarily supposing that all the sub-episodes are in a fixed order; only that some of them are. We shall have more to say about this later.

The events in a theme also have an integrity in terms of what they contribute to the whole. Lord declares that all songs are made from a finite set of themes. This perspective suggests that the plot of a song is created out of independently existing themes and that different songs use the same themes. This is to suppose that singers have learned a finite set of discourse structure rules and do not need to learn new ones in order to sing new songs.

It would probably be too simplistic to equate themes exactly with the constituents of discourse structure rules, since Parry and Lord do not think in this way about epic poems. However, themes and discourse constituents are not so different that we could not regard the latter as a model of the structural aspects of the former.

If we compare the themes of oral heroic poems with the narratives of sports commentators, similar theme-like episodes can be found. The face-off episode in an ice hockey game has a particular characteristic part to play in the events of the total game (Kuiper and Haggo 1985). In the speech of ice hockey commentators, the way the face-off is called can be given a formal representation by a set of rules. Similarly, the description of the lot has a unique role in an auction (Kuiper and Haggo 1984).

Let us suppose that discourse structure rules are an explicit model of what have traditionally been called themes. Since they are explicit, they have both the advantages and disadvantages of explicitness. There is a loss of mystique and a greater empirical vulnerability. But such proposals also have greater predictive power. That power can be put to the test. All the discourse structure rules examined in *Smooth Talkers* (Kuiper 1996) and elsewhere, such as Salmond (1976) and Pawley (1991), are of the same general kind. They are context-free rewrite rules, which have particular mathematical properties.[3] They are a formal means of generating or explicitly characterizing ordered hierarchical structures. They look like this:

$$A \longrightarrow y + z$$

Such a rule states that there is a constituent, e.g., a section of discourse A that consists of two sub-constituents y and z that occur in that order. In this rule, A is called a non-terminal symbol since it is not at the bottom of the hierachical structure, whereas y and z are terminal symbols. Where a grammar consists of a number of such rules, i.e., where the hierarchical organization of the discourse consists of more than one level, non-terminals may appear on both sides of the arrow as follows:

$$A \longrightarrow B + C$$
$$B \longrightarrow w + x$$
$$C \longrightarrow y + z$$

In this grammar A, B, and C, are non-terminals and w, x, y, and z are terminal symbols. The difference between terminal nodes and non-terminal

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[3] See, e.g., Gross and Lentin 1970.

nodes is that the former are the end of the line, as it were. There is no substructure possible below them whereas non-terminal nodes have additional structure below them.

Having made these formal distinctions, we can explore the discourse grammars of oral-formulaic speech more explicitly. First, the kind of rules we have looked at above propose that all discourse sequences in a theme will be strictly ordered. That is not always the case. Free order sequences are permitted in some varieties of formulaic speech. In discourse structure rules square brackets are used to enclose such sequences. For example, in commentaries on ice hockey matches, every now and then a commentator will relate a face-off episode. In such an episode the linesman, an official, drops the puck between two players in order to restart the game. The discourse grammar for the face-off is rigidly sequential, but that grammar is embedded in larger episodes of the game. It seems that these larger episodes are, in many cases, not structured by discourse structure rules because the play is not routine enough to allow it to be coded into discourse structure rules. Putting it differently, there are aspects of ice hockey that allow for free and relatively unordered play. Such play is still related using formulae since such patterns, as will be seen later, code significant episodes of a formulaic variety. In the case of ice hockey, some of these episodes are serial in nature: for example, a series of passes from one player to another. In such a sequence, formulae will be used to describe the passes. The same can be observed in the case of some of the episodes of cricket commentaries (Pawley 1991). As a result, the context-free rewrite rules that account for discourse structure with free order sequences are not as restrictive as they are in the grammar of English, for example, where words cannot be put into free order sequences.

None of the discourse grammars underlying a formulaic variety of speech that I have investigated is recursive. The recursive property of context-free grammars allows them to embed structures within structures ad infinitum. For example, in the grammar of English it is possible to embed possessive phrases inside one another in the following way. We can say "My father's brother's sister's mother's aunt's car's door's handle's. . . ." It seems that such embedding, where it takes place in the discourse structure of formulaic speech, has limits.

In such genres any non-terminal constituent that appears on the righthand side of one discourse structure rule appears on the lefthand side of one and only one other rule. Therefore the rules that have a particular non-terminal node on their lefthand side appear higher in the grammar than those with that node on their righthand side. For example, in the discourse structure of auctions, there is a constituent for the description of the lot.

This constituent appears on the righthand side of the rule that gives the top structure of the auction. In turn, the description of the lot constituent appears on the lefthand side of the rule, giving the internal structure of the lot description, for example, in the livestock auction grammar. The conventions for these rules are as follows: the arrow can be paraphrased as "consists of;" the parentheses enclose optional structural elements; the square brackets enclose free order sequences as indicated above.

> Auction —> description + opening bid search + bidcalling + sale + (epilogue)

> Description —> [provenance + number] + [(history) + (preparation) + (potential) + ...]

Figure 1: Discourse structure rules of auction speech

The restriction limiting non-terminal elements to being on the righthand side of the arrow in only one rule has the effect of stipulating that the degree of embedding allowed by a set of rules is limited by the number of rules in the discourse grammar that have non-terminal nodes. The depth of each non-terminal constituent is also unique, since, under these limitations, the same constituents always appear at the same level of embedding. Suppose, for example that we have a discourse grammar with the following rules:

A —> B + C
B —> E + (F) + G
E —> a + b
F —> c + d + e
G —> f

In such a situation B is always and only the first sub-section of A; G is always and only the final sub-section of B, and so on. Such a restriction on a context-free grammar has as the consequence that the discourse grammar is not fully recursive, except in so far as the rules allow repetition of the same constituent. That occurs in the commentaries of horse races, where, if the race were to go on forever, the cycle constituent in the commentary that names the horses in the order in which they are currently running would be repeated forever (Kuiper and Austin 1990).

　　　　Second, there appears to be a general constraint on discourse grammars that will not allow them to have any more than four or perhaps five levels of structure. In the case of race-calling, each cycle is contained

within the structure of the whole race commentary. In the discourse grammar of North Canterbury livestock auctions, the structure has only three levels, as can be seen from Figure 1 (Kuiper and Haggo 1984:209). The distance from highest constituent to lowest goes from Auction (the highest level) to Description of the lot (the next level down) to Provenance, where the lot comes from and the lowest level of discourse structure. Thus the three levels.

In oral heroic poems such as the *Iliad*, there are constituents of the story that recur embedded in other episodes. For example, Homer's heroes in the *Iliad* arm themselves for battle. When they do so, there is a small discourse grammar that supports the description (Thornton 1984:100-3). Since these arming sequences appear inside other sequences, the arming grammar is embedded in a higher structure, but even here it seems that the levels of embedding are limited to four. The highest-level constituent is the poem as a whole. Below this, if Thornton is correct (46-63), there is a constituent for one of the journeys back or forth from the shore to the walls of Troy in which the Greeks fight their way to the walls of Troy or are beaten back to their ships by the Trojans. Below that there is, say, the battle between Achilles and Hector, part of which is the arming sequence; at the bottom we find the putting on of the greaves. This structure consists of five levels of constituents and four levels of embedding.
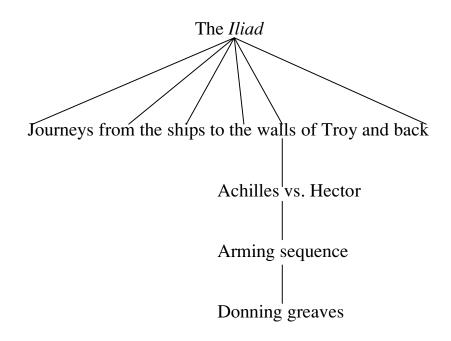
The *Iliad*

Journeys from the ships to the walls of Troy and back

Achilles vs. Hector

Arming sequence

Donning greaves

Figure 2: The hierarchical structure of the Iliad

The arming episode also usefully illustrates an earlier point. Arming constituents in the *Iliad* recur. People arm themselves or are armed at various times, but on each occasion the arming sequence is at the same level within the structure of the poem. There are, to put it differently, no insertions of minor battles within the sequence of a warrior being armed. It is, by contrast, perfectly possible to imagine that kind of insertion happening in a modern novel.

Self-embedding of discourse grammar constituents is also impossible. There are never auctions within auctions, descriptions of the provenance of cattle within descriptions of the provenance of cattle, arming sequences within arming sequences. The result of this set of constraints on the discourse structure rules of formulaic speech is that they build rather flat structures. In some cases this results from the events themselves having a linear character. For example, while the commentator of a horse race may call horses repeatedly, he will use an iterated structure rather than an embedded one. Auctions have the same linear character. On sale day, one sale succeeds another and in an individual auction one bid succeeds another. This point about linearity is made in general for oral forms by Ong (1982:37-38). But in other cases it appears to be the result of the way oral-formulaic performance utilizes human memory.

The four properties just mentioned—the lack of true recursion and of self-embedding, the relatively low level of embedding, and the possibility of iteration—can be seen as a consequence of the theory of oral-formulaic performance proposed in *Smooth Talkers* (Kuiper 1996), namely that formulaic varieties of speaking can be used as a way of mitigating the effects of limited short-term memory in certain high pressure situations. Iterated structures are flat while embedded structures are not. If a speaker is under working-memory pressure in performance, the flatter the structure that the speaker has to produce, the better. The reason for favoring flatter structures is that the greater the depth of structure, the greater the burden on working memory. In a heavily embedded structure, the speaker must remember where in the higher structure he or she is while going through the lower structure.[4] It is likely that auctioneers, race callers, and oral poets will want to save as much working memory space as possible and will therefore use discourse grammars that are as efficient as possible in this respect. Making do with shallow structures meets this goal. Performers of heroic poems cannot do without some structural depth, since their texts are much longer

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[4] There is evidence from the theory of the parsing of syntactic structure in linguistic performance that human memories and processors have a preference for flat structure (Frazier and Clifton 1996, Marcus 1980).

than those of race callers and auctioneers. They also do not appear to be under quite the same working-memory loading from external sources as race callers and auctioneers. They have no race to watch or goods to sell, but they do have a complicated tale to relate from long-term memory. They therefore have the memory resources to manage a certain amount of structural depth.

To summarize, the discourse structure of formulaic varieties of speech has three formal properties. It can be modeled by context-free rewrite rules. These rules do not permit self-embedding, and allow other forms of embedding down to four levels only. The rules do allow for iteration and therefore tend to build relatively flat structures.

Formulae

Formulaic speech appears to be inextricably bound up with using lexicalized phrases. Most scholars of oral-formulaic performance take as their starting definition of the formula that of Milman Parry quoted by Lord: "a group of words which is regularly employed under the same metrical conditions to express a given essential idea" (1960:30). The metrical element of this definition derives from the properties of the formulaic tradition in which Parry was working. Since we know that Old English alliterative poetry is in part formulaic but its meter is accentual, we might loosen Parry's definition to include the possession of rhythm as a defining property. However even this hypothesis proves too strong. Not all formulae in all formulaic varieties of speech have a rhythm that is different from normal speech rhythm. This leaves us with a definition specifying only a group of words expressing an essential idea—not a precise definition.

Lord suggests that "the most stable formulas will be those for the most common ideas of the poetry. They will express the names of the actors, the main actions, time, and place" (34). He also suggests that the "group of words" part of the definition can be augmented by supposing that formulae have a kind of slot and filler grammar: "We immediately begin to see that the singer has not had to learn a large number of separate formulas. The commonest ones that he first uses set a basic pattern, and once he has the basic pattern firmly in his grasp, he needs only to substitute another word for the key one" (36). An interesting use of this concept is a study by Fry (1975) that shows how a pagan set of formulae can be converted to Christian usage by small changes in the fillers for particular slots. It seems that formulae have both syntactic and lexical properties, as well as a relationship with the sites in which they are employed in the composition of oral epic.

However, scholarship in the field of oral-formulaic performance has not helped to make the theory of the formula much more precise. For example, Lord (1986) covers a range of scholarship related to the formula, but there is little increase in precision of definition.[5]

Linguistically a formula is a lexical item that is phrasal in character rather than being just a single word; that is, it has syntactic structure. It is held in long-term memory by a speaker or a community of speakers. In this way formulae are like idioms. But they also have an additional property. Each formula has idiosyncratic conditions of use. It does particular work for a speaker in a particular situation; specifically, in the case of oral poetry, it performs the kinds of discourse functions Lord alludes to above.

Since formulae are lexical items, their properties should be demonstrable. Like all lexical items, formulae show both arbitrariness of form and idiosyncrasy of behavior.[6] The arbitrariness of form exhibits itself in the fact that while some formulae have variants, there are many ways other than these of saying the same thing, ways that oral-formulaic performers do not use. For example, in the face-off in ice hockey commentaries, the expression "get the draw" is formulaic whereas "aim for the draw" is not. In race calling the loop formulae that one caller uses to signal that he is moving from the last runner in the field back to the first runner include "round the Showgrounds bend they come," but not "round the Showgrounds bend they trot." An auctioneer will ask towards the end of the bidding "Any more bids?" But he will not ask, "Has anyone a further bid?"[7] Pawley and Syder suggest that, given the infinite number of possible ways a language provides for saying something, in many cases native speakers select only one or two characteristic ways of saying it. Formulae are such ways of saying things in a "nativelike" way.

However, formulae are not without variant forms. In a real estate auction (see Kuiper 1996), the auctioneer (Rod Cameron) calls bids in the following ways (where X is a dollar value):

1.   I have X dollar bid
         I have X dollars
         X dollars
         X

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[5] See, for a further example, Russo 1976.

[6] Arbitrariness of form is regarded by Di Sciullo and Williams (1987) as diagnostic of lexical items.

[7] For a detailed discussion, see Pawley and Syder 1983 and Pawley 1985.

2.   At X dollars
        At X

If we look at these two sets of data, each can be seen as consisting of variants of a single formula in much the same way as Lord's "systems" are (1960:35). Lord illustrates one such system as follows:

$$a \ u \ \left\{ \begin{array}{l} \textit{kuli} \\ \textit{dvoru} \\ \textit{kući} \end{array} \right.$$

Such systems are arbitrary in form and in their lexical selection since we can think of many other syntactically well-formed variants that do not occur.

How should we explain such arbitrary variation in formulae? Let us look again at the variants in 1 and 2 above. In each case some of the elements are compulsory and some optional. At first glance it might appear that each variant has a separate lexical entry just like a single word. However, to suppose that would be to ignore the family resemblances among the different variants. We can account for these family resemblances by supposing that formulae are generated, that is, given explicit structural description, by finite state grammars without loops. Such grammars look like this:
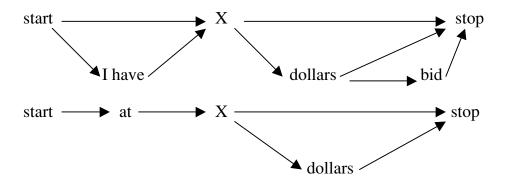

Figure 3: Finite state representation of two bid-calling formulae

Finite state diagrams not only provide a model of these two formulae but of very many formulae. Here are some of the formulae for describing face-offs in ice hockey:
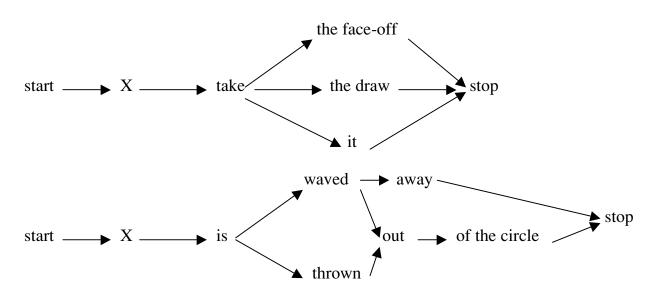
Figure 4: Finite state representation of face-off formulae

If formulae have finite state properties, we can explain why some variants appear and others do not. The reason is that only those forms that can be generated by the finite state diagrams are available variants. If formulae were freely generated syntactic structures, then we would expect many more variants to appear than actually do. Formulae share this property of having a restricted set of variants with idioms that are also phrasal lexical items.[8] Though formulae may be modeled as finite state diagrams, they also have a grammatical category: they are noun phrases or verb phrases. Speakers must know what the grammatical category of a formula is because formulae can and do fit into a grammatical position when they are not a full sentence.

      None of this precludes a formula from being reanalyzed in its entirety as a normal syntactic structure. Formulae are, for the most part, normal in their syntactic properties. What is being claimed is that oral-formulaic performers normally store formulae and use them in a finite state form. Someone who is not familiar with the formula as formula will parse it as they would any other structure, since there is often nothing about a formula that tells those who do not know it that it is a lexical item. On occasion someone who is familiar with that fact will nevertheless reanalyze it, making up new versions for rhetorical effect.

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      [8] See further Weinreich 1969, Chafe 1968, Fraser 1970, and Di Sciullo and Williams 1987.

A further lexical property of formulae is that they frequently do not mean what they say; that is, they are semantically non-compositional. The traditional formula to end bidding at an auction—"going once, going twice"—does not mean what it says. The lot is only going to be sold once, not two or three times. The formulae of cricket commentaries are almost all non-compositional. Cricket commentators talk about a ball being "on the leg" as in "so and so gets this ball on the leg." In cricket the field of play is divided symmetrically into the "on" side and the "leg" side. A ball bowled "on the leg" is on the leg side of the midline dividing the field of play. It is not on the person's leg at all nor is the person's "leg stump," another technical formula, the stump of the person's leg. What this actually means in turn needs an explanation that would, if a cricket enthusiast were explaining it, involve further non-compositional formulae. Such examples could, we predict, be found in all varieties of oral-formulaic speech. Formulae are thus not only ways of saying but ways of seeing, being interdependent parts of a semantic network of relationships that constitute the knowledge one has of an area, such as a sport or the Trojan War.

We are now in a position to see the connection between discourse structure rules, whose formal properties we looked at earlier, and formulae. A defining property of formulae is that they are indexed to particular constituents of the discourse structure rules. Any formula appears to be tied to one—and only one—constituent of the discourse structure. This linkage makes formulae in oral-formulaic speech unambiguous in their discourse function. Speaking metaphorically, we could say that formulae are stored on file cards with one, and only one, index. If formulae are seen in this way, then the discourse structure rules have a dual aspect; they model the high-level structure of the discourse but, perhaps more significantly, they anchor every formula to its appropriate place in the discourse.

If formulae have the structure of indexed finite state diagrams, and given the hypothesis initially proposed by Lord that formulaic speech is a response to the pressures of real-time performance (including, in the terms we discussed earlier, subject to internal and external constraints on such speech), then it should be the case that using formulae makes it easier for speakers under working memory pressure to speak fluently. Let us suppose that all the features of oral-formulaic speech reduce the range of choices available to the speaker. In the case of formulae, we can clarify as follows. Speakers who reach a particular point in the discourse have at their disposal a number of formulae, each of which is a finite state diagram. The choice of formula is not functionally significant, but it is stylistically important. To remain interesting, speakers must not say exactly the same thing every time they open their mouths at a particular point in the discourse. The choice is

therefore first among the various formulae that have the same discourse index, and then, secondly, which particular path that a speaker takes in the finite state diagram.   At each point the number of choices is small and finite, so that using formulae does exactly what we have supposed needs to be done under working memory pressure. It sharply limits the speaker's linguistic resources. It also means that what the speaker says will be contextually appropriate if the discourse structure rules are followed for the kind of discourse that the current context requires. A race caller will produce an appropriate account during the running of a race if he follows the discourse rules and inserts the contextually determined names of horses into the formulae he is using.

Compare this process with the hypothesis that speakers construct sentences compositionally. Here the number of available choices is infinite. No doubt speakers can and do, from time to time, use linguistic resources in this way, but they do not seem to do so in the case of oral-formulaic speech. We can conclude that oral-formulaic performers replace the act of processing speech with looking up formulae wherever possible.   Where processing is necessary, they use the look-up procedure to give themselves time to do what processing needs to be done.

We have now defined the linguistic aspect of the formula in some detail. We have had nothing to say about the metrical properties that have exercised some literary scholars of heroic epic. The reason for that omission is that metrical properties do not seem to be necessary properties of all formulae. That is not to say that in particular oral traditions, such as those of oral poets, meter may not be significant. It clearly is. But the *necessary* properties of formulae are their finite state syntax and their discourse indexing.

The Drone

In many oral traditions, speaking or singing with a strong tonal center, or droning, is the basic prosodic mode in which the performer performs. Different oral traditions ornament this tonal center in different ways, generally in a fairly predictable fashion. In part this predictability is part of the tradition; in part it is idiosyncratic to different performers.   What is important for the foregoing is that a strong tonal center and a high degree of predictability in the prosodic ornamentation of oral-formulaic speech lead to the limitation or focusing of linguistic resources that characterizes such speech.

Fluency and Abnormal Fluency

Normal conversational speech is fluent. Speakers speak at an average rate of five to six syllables per second and often with little hesitation (Bolinger 1975:496). Generally the speech of oral-formulaic performers is abnormally fluent. Its speech usually averages out to conversational speed but, unlike conversational speech, it has an abnormally even articulation rate, a lack of hesitation phenomena such as voiced or unvoiced pausing, an absence of filler expressions such as "you know," and an absence of false starts. Not all oral-formulaic speech has all these features (Kuiper 1996). We can attribute the abnormal fluency of formulaic performers to the fact that they make heavy use of recall rather than constructing utterances from the ground up. While one is speaking from memory, the hesitation phenomena that indicate the uncertainties of speech planning are absent.

Situations, Formulae, and Oral Traditions

I now turn to the final area in which further explication might be sought, the general relationship between the text and its context. Consider first "what Bauman refers to . . . as an 'interpretative frame,' [which Foley] prefer[s] to call the performance arena, understanding by that term the locus in which some specialized form of communication is uniquely licensed to take place" (Foley 1995:8). We have seen that discourse structure and formulae are intimately related and that reasonably precise theories can be constructed as to how this happens. But what of the discourse structure, formulae, and their relationship to the non-linguistic context? In this regard it is salutary to recall Sherzer's admonition (1983:18):

> There is the relationship between speaking patterns and the other sociological patterns found in a society—social organization, political, ecological, economic, or religious. There are anthropological theorists who would always see one of these aspects of a society as basic. Such a view would always have speech patterns be secondary, superficial reflections of the more basic structure. But in many situations in many societies speaking has a structure of its own which can play a major role in defining, determining, and organizing sociological structures.

The most likely source within linguistics for a theory of how this may take place is the ethnography of communication and, more specifically, the theory of register. A register is usually conceived of as dealing with those

varieties of a language some of whose features are situationally determined or correlated—a situated discourse, in other words. Since formulae are linguistic units whose conditions of use are situationally determined, the frameworks for ethnography of communication and register studies should yield useful analytic tools for exploring what I will term "pragmatic indexing."

There exist a sizeable number of situational classifications from which one might draw suggestions for how speakers code pragmatic indexes. These should be seen in the light of the comment by Biber that "despite the number of register studies that have been completed to date, there is still need for a comprehensive analytical framework. Such a framework should clearly distinguish between linguistic and non-linguistic characterisations" (1994:31). Here I will consider only the non-linguistic characterizations, since I explored the linguistic properties of formulae earlier. Such characterizations can be of two kinds: analytic frameworks or taxonomies devised by the ethnographer for describing situated discourse, or theories as to the nature of the communicative events that native speakers have internalized and that constitute aspects of their native-like communicative competence.[9] These two approaches do not necessarily come up with different answers, but their objectives are dissimilar. For the objective I have set, the second approach is to be preferred. I am not so much interested in an analytic framework as a theory of the nature of pragmatic indexing.

To put things a little differently, let us suppose that part of a native speaker's communicative competence involves the learning of a set of phrasal lexical items. Some of these will be formulae. Attempting to give a descriptively adequate account of formulae therefore requires a theory of how formulae are entered into the native lexicon, that is, explaining how formulae are native-like component parts of certain communicative events. That is to suppose that each formula is a kind of micro-register. So is it possible to discover restrictive theories of such micro-registers that have the explanatory power of the linguistic constraints that we have proposed above in limiting the world of the possible where formulaic speech is concerned?

Regrettably, in our current state of knowledge, the answer seems to be that it is not. If it were, then there would exist general parameters that "define the frames of perception which constitute the boundaries between socio-cultural domains and along which natives determine to which socio-cultural categories linguistic units belong" (Herdt 1980:197). By looking at standard examples such as arming formulae in Homer, we can see that a search for general constraints on the pragmatic indexing of formulae is

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[9] See Hymes 1974, Pawley 1985, and Sherzer and Darnell 1972.

futile. Each formula is indexed for a specific constituent of the discourse structure rules, but these rules are culture-specific.

If we look at the kinds of frameworks that have been constructed for performing analyses of situational constraint,[10] none provide constraints as to what a possible pragmatic index might include. For instance, they do not preclude the possibility that a formula might be indexed for the haircolor of the speaker or for whether or not the addressee is wearing contact lenses. Instead, they provide fairly open-ended frameworks that analysts of the situational context of speech can use as checklists for the general areas in which pragmatic indexing may be found. In other words, in our current state of knowledge it is not possible to say what constraints exist on the pragmatic indexing of formulae.

Conclusion

The speech of formulaic performers is constrained both from within, by human memory and processing capacities, and externally, by the routine tasks that formulaic speakers must perform. In turn, these constraints make it advantageous for speakers to select speech that makes do with limited resources. Formulaic speech employs discourse structure rules and formulae with formal properties that limit what can be said. It employs unusual prosodic modes. As a result, speakers who utilize formulaic modes of speech speak with extraordinary fluency.[11] What has been shown above is that by looking in a precise way at each of these linguistic features of oral-formulaic speech, particularly at the formal properties of discourse structure rules and formulae, we can get a clearer picture of some of the mechanics of an oral-formulaic tradition. We can also delimit formulaic speech from other varieties of speech, since the formal constraints we have been able to place in discourse structure rules and formulae do just that.

Using formulae according to their discourse indexing limits a performer's options, allowing speech in circumstances where performance constraints limit a speaker's ability to be highly creative. Formulaic speech also consists of a prosodic tradition, a way of speaking or chanting that makes speaking simpler by limiting the performer's options in this area. The employment of these two parts of the linguistic tradition results in an unusually fluent performance. I have suggested, however, that we cannot

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[10] E.g., Hymes 1974, Crystal and Davy 1969, Biber 1994, and Coulmas 1979.

[11] This theory is the burden of Kuiper 1996.

yet make precise predictions about the ways in which the non-linguistic conditions of use for formulae are coded in the mind of the speaker.

What practical consequences do these findings have for those working in the field of oral literature? They allow for formulae to be seen not just as underlined sections of (transcribed) text but as mental representations of an abstract structure that can give rise to a small, finite number of instantiations of the formula. In such cases the formula is, in fact, the finite state representation rather than a particular form of words. The findings also suggest that discourse structures can be represented by a system of rules that performers follow and that explain some of the properties of their performances in a testable fashion.

In practical terms, the theories presented above allow students of oral literature to construct dictionaries of formulae represented as finite state systems. They also allow for the structure of works of oral literature to be represented as discourse grammars. But these are only beginnings. The microstudy of a specific oral tradition reveals that different performers make idiosyncratic use of the discourse rules and the inventory of formulae.

Careful study would show how an individual performer uses the discourse grammar and which particular paths he or she prefers through a finite state system of a particular formula. In this way the theoretical claims made above can be turned into a way of uncovering both the tradition and an individual performer's accessing of it. Take, for example, the highly characteristic prosodic patterns used in the oral traditional performances of tobacco auctioneers in the American South. Kuiper and Tillis (1986) have noted the macro features of the tobacco auctioneers' chant tradition, but, as far as I know, no one has studied the idiosyncratic implementations of that tradition by individual auctioneers. Even the study of specific performers is at the level of generalization. We know that no two performances are ever identical. The theoretical claims made earlier allow for the discourse structure rules and formulae of one performer to be studied in their detailed implementation at particular times and places. Furthermore, the longitudinal study of a performer's gradual induction into a tradition and subsequent development as a performer within it would benefit from looking, for example, at the ways in which the discourse structure rules become articulated and the flexibility of finite state systems expands as the performer becomes more experienced.

I hope that the theories presented in this study will give rise to greater precision in the discussion of formulaic speech and will allow those who work on formulaic performance traditions to understand them better and to

utilize the formalisms presented here to gain greater understanding of both the macro- and the micro-levels of formulaic performance.[12]

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