"Cheshire puss," she began, rather timidly, "would you tell me please, which way I ought to go from here?"
"That depends a good deal on where you want to get to," said the Cat.
"I don't much care where," said Alice.
"Then it doesn't much matter which way you go," said the Cat.

Alice in Wonderland

1.0. LANGUAGE-MUSIC RELATIONSHIP

Discussions concerning the relationship of language and music are now commonplace. General or review papers, devoted entirely or partially to the subject have appeared in major linguistic (Harweg 1968, Springer 1956), musicological (Nattiez 1971), ethnomusicological (Bright 1963), and social science (Jackson 1968, Ruwet 1967a) volumes.

Interest thus far in the language-music relationship occurs at two distinct levels; one being the overlap of musical and linguistic phenomena, the other being the possibilities of applying linguistic models to musical analysis. Until recently, literature was weighed to the former concern. The current growth of the latter idea, has, no doubt, been spurned by the use of structural linguistic models in anthropology and folklore (Lévi-Strauss 1963), the development of transformational linguistics (Chomsky 1957, 1965), and the new popularity of semiotics (Morris 1938).

1.1. Language in Music and Music in Language. Continuing research into aspects of the language-music overlap has looked at two types of relations, namely language in music (relations of text, poetics, and stylistics to song structure) and music in language (musical properties of speech).

In the investigation of language in music there stems from Herzog (1934, 1942, 1950) a number of studies of the coincidence of musical and textual structure (Robins and McLeod 1956, Bartok and Lord 1951, Laloum and Rouget 1965, Nettl 1964:286). In addition there is Bright's work on the relation of syllabic length to durational values in South Indian song (1957, 1963), and a number of discussions of the interplay of poetic language, versemaking, and song structure (Jakobson 1960, Rouget 1966, Sebeok 1956). A recent advance in this area is the formal demonstration of graded syntactic flexibility in Gujarati poetry, song texts, and prose (Durbin 1971).
Studies of the forms intermediate to speech and song have been undertaken by both linguists (Chao 1956) and ethnomusicologists (List 1963); there is also a well known joint study of Russian intonation (Buning and van Schooneveld 1961). More recently, Sundberg (1969) has attempted to deal with the problem in terms of articulatory phonetics. Finally, there are, again stemming from investigations by Herzog (1934, 1945), studies of the relation of speech melody of tone languages and corresponding song melody (List 1961), and instrumental "talking" (Alexandre 1969, Carrington 1949a, 1949b, Rouget 1964, Stern 1957; for a new methodological twist see Zemp and Kaufman 1969).

1.2 Linguistic Models in Ethnomusicology. There is another logical relationship of language and music quite distinct from that of their mutual overlap. Namely, language and music are the two principal ways by which humans pattern sound for social communication. For this reason it has been argued that language and music are both open to analyses of a general semiotic character, and, hence, that they may benefit from uniformities in analytic approach.

The largest body of literature concerning linguistic approaches to music derives from analogies to structural linguistics. Most of the structuralist papers are highly programmatic and minimally empirical. Nettl (1958) for instance suggests starting with a defined corpus, moving on to identify significant vs. non-significant features, and then plotting the distribution of the distinctive elements in the total structure. Such a procedure may be applied to both melody and rhythm, building from minimal units (phonemes) to recurrent sequences (morphemes), noting allophonic and allomorphic variation, and finally isolating phrases and sections. Nettl sees the rearrangement of data into these levels as a means of objectifying musical analysis, thus minimizing subjective judgements about such things as "tonality" and "harmony." Portions of Nettl's suggestions have been echoed by both musicologists (Seeger 1960) and linguists (Bright 1963), but with little empirical advance. Aside from Lévi-Strauss' own structural analysis of Ravel's *Boléro*, (Lévi-Strauss 1971) the major attempts to demonstrate musical structuralism are provided by Ruwet (1966) and Arom (1969). Ruwet basically follows Harris' taxonomic distributionalism (Harris 1951); the notion of segmentation based on units of repetition is stressed, as is the formalization of such structural units as "motif" and "phrase." Methodologically, Ruwet advocates a procedure where musical segments are re-written one beneath the other such that formal similarities in structure (especially repetition) are isolated and distributionally plotted in relation to other segments; all of Ruwet's examples are from the Western art music tradition. Arom has applied
Ruwet's procedures to non-Western music, isolating the distributions and oppositions of a larger inventory of musical properties.

Recent excursions into musical structuralism are found in Nattiez (1972a, 1972b) and Asch (1972). The former discussions are programmatic and stress the structuralist paradigm as the logical model for the development of music semiotics. Nattiez's concern is principally methodological; he asserts that ethnomusicology will increase its scientific status if it adopts a "rigorous methodology" of discovery procedures ("working instructions") by which a music corpus may be transformed into a music grammar. Asch, in an opposite vein, begins by stating the necessity of an anthropological approach, but then resorts to an analysis which simply lists in prose rules the sound organization of Slavey drum dances. John Blacking (1972) has presented the single critique of musical structuralism; his concern is that structural analyses emphasize the isolation of logical units outside of their cultural contexts.

Transformational and other generative models for music have been used since 1967, when Boilés' transformational grammar of Tepehua thought-songs appeared. These songs are like spoken linguistic code in that specific meanings are assigned pitch sequences. Boilés' transformational grammar was written to show how the melodic and rhythmic sequences signal the semantic message (Boilés 1967). Unfortunately, Boilés does not comment on whether transformational grammars are applicable to music where the notes cannot be assigned specific lexical meanings. Moreover, the author does not discuss the extent to which his grammar makes the kinds of claims and predictions that a linguistic grammar makes.

Another type of transformational approach is illustrated by Sapir's (1969) grammar of Diola-Fogny funeral songs. Sapir uses both "emic" and "etic" approaches in his analysis by combining transformational notation with native song structure terminology. Phrase-structure rules are used to convey features common to all the funeral songs, and the transformational rules indicate ways that possible variations can be derived.

Other attempts at generative description range from purely mathematical melody-writing algorithms (Lidov 1972) to the three models for visualizing musical syntax presented by Chenoweth and Bee (1971). The flow diagram, formulas, and geometric model proposed by Chenoweth and Bee derive from applying Pikean descriptive linguistic procedures to music, and then restating the analysis in generative rules. The goals of this procedure are to allow foreigners to compose in a given musical system, and to help ethnomusicologists predict all the syntactically correct melodies that the system will generate.

The above transformational models do not share a basic feature with transformational linguistics; they are not derived from a deductive theoretical
posture about the nature of music or the most adequate way to analyze music. Papers beginning from this theoretical problem are few; Lindblom and Sundberg (1970) discuss appropriate goals of a music theory in terms of the approach from natural science and develop a theoretical starting point for the generative description of melody. Two papers by Blacking (1970, 1971) deal with the theoretical notions of competence, performance, and deep and surface structure from an anthropological view. Blacking is asking: What is the nature of an ethnomusicological theory that best accounts for the interplay of musical structures and social categories? A final paper from a theoretical position is Boilés' outline of the semiotics of ethnomusicology (Boilés 1971). From Morris' characterization of the nature of sign communication (1938) Boilés discusses the possibility of approaching musical communication from the three pointed orientation of syntactics, semantics, and pragmatics. The goal of this perspective is to produce "a more profound penetration of the cognitive dimensions of musical behavior (Boilés 1971:13)" in ethnomusicology.

2.0. EPISTEMOLOGICAL DIMENSIONS

Since the application of linguistic models is increasing, it seems important that we now reflect critically on some epistemological dimensions of their usage. Specifically, it is necessary to isolate the factors which motivate the usage of the models, and to decide if these factors have been satisfactorily justified. The following arguments proceed from the view that if one uses formal models, then one is bound to formal criteria for their evaluation.

2.1. Assumptions vs. Explanations. The job of scientific inquiry is to delimit and solve problems in terms of general theories. Hence the job of the scientist is to collect evidence in order to advance explanations for problems. To explain means to account for observable phenomena in terms of their underlying regularities, or principles (Hempel 1966).

We might first note that one never explains something by previously assuming it. The difference between explaining and assuming lies in evidence. Explanations require empirical support, assumptions do not. It is always the case that a science does not assume what it seeks to explain.

Following this notion, we must differentiate between assuming that linguistic models adequately account for musical phenomena and explaining how and why linguistic models might do this. It is epistemologically silly to assume that linguistic models explain music without some demonstration of why this is the case. This would be like explaining V7-I resolution by saying
“it makes the music pretty” or subject-verb agreement by saying “it makes the language clearer.”

To assume the correctness of linguistic models takes us away from science, that is, it makes a problem into a non-problem. To explain the correctness of linguistic models is to create some theoretical baseline for inquiry. An explanation of the benefits of linguistic models must derive from evidence that shows the models to account for the facts in the most powerful manner. The criteria of explanatory adequacy cannot be met by analogy or a priori notions, it must be met empirically.

2.2. Assertions vs. Demonstrations. The next logical point is that one cannot make a case for the adoption of a scientific procedure by asserting its essential goodness; one must demonstrate its essential goodness. The difference, again, is evidence.

Thus far the utility of linguistic models has been asserted rather than demonstrated. Proponents of the models have reasoned that an application of a model is, ipso facto, proof of its efficiency. But this is not necessarily true. One demonstrates the superiority of theory X over theory Y by comparative analysis; that is, by evidence showing that whereas theory X accounts for A, B and C, theory Y accounts for only A and B. One never demonstrates the superiority of theory X over theory Y by simply asserting the data in the format of theory X. Any clever author can rephrase any data into any notational conventions and then assert that a superior theory has been uncovered, but this is not science. Hence, while the application of a model is an assertion of its utility, it does not constitute an empirical demonstration of its utility. Simply increasing the volume of applications does not advance the case; one makes demonstrations with evidence, not with quantities.

2.3. Reasons vs. Justifications. We have noted thus far that the advantages of linguistic models have been assumed rather than explained, and that their adequacy has been asserted rather than demonstrated. The margin in both cases is evidence. Restated, the fault in the logical scaffolding beneath using linguistic models is that reasons rather than justifications have been provided in their support. A reason can be, and sometimes is no more than an excuse—momentary, faddish, a priori; a justification, on the other hand, requires some lasting empirical support, validation.

Reasons do not last long in science; procedures and claims must be justified. One adopts a new model when it is demonstrated that the model either (a) accounts for the observables in a more interesting way, or (b) accounts for more observables. It is usually the case that scientific breakthrough is characterized simultaneously by both (a) and (b) (Kuhn 1962). As one philosopher of science concludes:
We are justified in placing the trust in [theories] that we do because—and to the extent that—they have proved their worth in competition with alternatives (Toulmin 1963:101-102).

Thus far, no justifications of this logical order exist validating the use of linguistic models in ethnomusicology. What exists are reasons, specifically three different reasons, of three logical types.

3.0. REASONS AND THEIR LOGICAL FALLACIES

The first reason for delving into linguistics is the simplest, namely, everybody else is doing it (e.g., film, folklore, visual arts, literature, etc.). This is the “everything is semiotics” position: language, music, magazines, clowns, breakfast, haircuts and all human behavior should be approached via a common science of signs.

The second reason stems from two different, though equally sincere attitudes towards the language-music analogy—treating the analogy as truth or treating it as a heuristic that must seriously be explored.

The third, and strongest reason offered, is formalism; it is argued that since progress in science is characterized by formalization, and since the models have proven their efficiency in the formalized science of linguistics, their usage in ethnomusicology is valid.

While the first and third reasons are logically distinct it seems fair to say that they come from the same kind of concern; hence I will lump them together for the purposes of analysis.

3.1. Analogy. The first reason for using linguistic models is the claim that language and music are similar enough that they deserve the status of “true” analogy. Such a claim usually precedes the application of a specific linguistic model, and is characteristically stated in non-explicit terms. For instance, in a recent paper we get these comments:

...musical systems are also semiotic systems, somewhat like language (Chandola 1970:135).
...tonal systems and linguistic systems are governed by almost the same theoretical principles (ibid:147).

Music is somewhat like and almost the same as many things, depending on how good your imagination is; while Chandola’s phraseology is suggestive, it is hardly convincing scientifically.

Another way of analogizing is to claim that language and myth are alike, and music and myth are alike, hence music and language are alike. Nattiez
follows this path as he attempts to bolster musical structuralism with the conclusions of Lévi-Strauss.

...Lévi-Strauss is convinced that music and myth function the same way. To be more exact, his analysis of myth proceeds along the lines of an orchestral score (Nattiez 1972a:5).

Those who have read Lévi-Strauss surely know that his overtures to music are poetic and interesting, but, alas, the chapter headings of The Raw and The Cooked hardly constitute evidence for a theoretical posture.

Further attempts to validate analogizing derive from the attitude that linguists have managed to explain language more comprehensively than ethnomusicologists have explained music. This attitude has been raised most recently by Chase:

Can the musicologist, using a method analogous to the method used in structural linguistics, achieve the same kind of progress in his own science as that which has taken place in linguistics (Chase 1972:5)?

That is a reasonable question; in the following I will show that while analogous reasoning is richly suggestive it has failed to produce clearer ethnomusicological explanations.

Preliminarily we must note the problem of metalanguage and notational conventions. Readers of the new ethnomusicology must now be fluent in linguistic as well as standard ethnomusicological terminology and notations. Given the nature of linguistic, musical, and anthropological specialization, this is certainly not a simplicity measure. But, of course, this is a rather weak criticism.

More problematic is that the use of the models introduces, by analogy, a whole set of slippery epistemological variables that must be resolved in order to understand what the music grammars actually explain, and how the explanations account for the facts. Consider for instance three such epistemological domains: (a) on the choice of models, (b) on the claims that the models make, (c) on the relation of the models to the nature of the phenomenon.

3.1.1. Analogy in the Choice of Models. Currently two linguistic paradigms, structural and transformational-generative have been used in ethnomusicological applications. Turning to linguistic history we must note that the groundstone of transformational linguistics was the empirical and meta-theoretical demonstration by Chomsky (1957) that some linguistic constructions and facts unexplainable by the structuralist paradigm are adequately accounted for in the transformational model (also see Postal 1964). If it is the
One response is to argue that both models may comfortably be used since there are many European and American linguists who are structuralists, and since Lévi-Strauss' structuralism is popular in anthropology and folklore. The counter-argument is, of course, that now we are not clarifying anything about the most powerful way to explain ethnomusicological facts, we are simply allowing linguistic theory arguments to be transported in toto to ethnomusicology. Moreover, while the linguistic arguments are taking place on empirical and theoretical grounds, there is not one stitch of ethnomusicological evidence from which we may begin to evaluate the models in terms of how they explain what we want them to explain. Hence, the analogizing has backed us into a corner.

An even less satisfactory response to the structuralist vs. transformationalist issue is to misconstrue the linguistic facts and issues. Nattiez, for instance, has written:

American linguistic structuralism [has] two main branches: the distributionalism of Harris and the generativism of Chomsky (1972a:1);

moreover the two are "rigorously equivalent" if confined to a finite corpus (ibid:10). Apparently Nattiez introduced this argument so as not to be open to criticism for ignoring transformational linguistics. But whatever the motivation, his characterization is inaccurate. In actuality, transformational grammar as proposed by Chomsky (1957, 1965) entails a radically different approach to language and science than does the structuralism of his teacher, Zellig Harris (1951, 1954). As one linguist writes in a recent review:

Chomsky denies the fundamental assumption of structuralism by arguing that an adequate linguistic description of grammar cannot be derived from applying sets of operations to primary data but rather must be viewed as a formal deductive theory whose object is to separate the grammatical sentences of a language from the ungrammatical ones and to provide a systematic account of the structure of grammatical sentences (Maclay 1971:163).

A serious question is raised by all of this: Why should ethnomusicologists sit around and wait for linguists to create and decide on the issues, and then copy their models and decisions? Linguistic arguments and analogies aside, I would suggest that the only sensible grounds for adopting models in ethnomusicology is theoretical-empirical, i.e., by demonstrating the explanatory adequacy of the model.

3.1.2. Analogy in the Claims the Models Make. An even more crucial problem than the choice of models is that of understanding the claims that a
grammar is actually making, and how the claims are to be evaluated. Suppose for instance that a transformational linguistic model is adopted in ethnomusicology. Reasoning analogously we must at least resolve the following questions:

(1) Is a transformational grammar of music a theory of what it means to know a music; that is, is musical competence the domain of an adequate ethnomusicological explanation?

(2) Is a transformational grammar of a music a theory of how that music will be acquired by children? What claims does the grammar make about learning?

(3) When a transformational grammar specifies a deep and surface structure is it making the claim that the deep structure constitutes a formal music universal? Does the deep structure contain musical meaning?

(4) Do transformational grammars of music imply a philosophy of mind? Specifically, do transformational grammars of music follow from a Cartesian rationalist orientation to knowledge (see Chomsky 1968) and a rejection of Skinnerian behavioristic learning theory?

(5) Does a transformational grammar of music make the claim that musical syntax is autonomous of semantics and cultural assumptions? Is musical semantics interpretive, based on lexical meanings given to notes, motifs, phrases, and segments?

(6) Does a transformational grammar of music account for analogues to linguistic competence? Specifically, is the grammar designed to explain native (a) knowledge of synonymy, (b) knowledge of ambiguity, (c) creative ability to produce novel utterances? If not, why have deep and surface structures?

(7) What is the musical counterpart of the “ideal speaker-hearer?” Does this imply that all members of a culture share the same musical knowledge, and that the skills of musical specialists are like the skills of orators and public speakers?

(8) Does one write transformational grammars for the entire musical output of a culture, or for styles, sub-styles, genres and the like? In fact, what is reasonable to expect a grammar to claim in regard to the relationship of these units?

(9) Finally, how are evaluation procedures to be developed, and what does it mean to construct the “simplest” or most general grammar of a music? Given two competing grammars of music X (i.e. two competing theories of the psychological reality of music X) we must be able to judge which is more reasonable on some principled grounds; if this could not be done, we would be making the claim that there is more than one psychological reality to the
music system. Or is it the case that it is not reasonable to expect ethnomusicological theory to make any claims about psychological realities?

Like those who have used transformational models in ethnomusicology, I find these questions interesting and provocative. But I would insist that they be dealt with in theoretically explicit ways, rather than be left in the air as a residue of papers that express musical data in linguistic notations. It must be understood that the significant part of a grammar (musical or linguistic) is not the abstractions themselves, but the claims that one uses the abstractions to make.

3.1.3. Analogy in the Nature of the Phenomenon. A final, and perhaps most crucial problem to be raised is that of whether the proposed models adequately capture the facts of ethnomusicological phenomena at all; here I refer to the curious fact that, thus far, the models focus only on music sound.5

To begin to understand this problem we might start with the current linguistic scene. The major upheaval in linguistic theory and practice today is in the areas of semantics and sociolinguistics, and the central issues are the empirical and theoretical validity of two of Chomsky's central notions: syntax vs. semantics, and competence vs. performance. Both dichotomies are at the root of Chomsky's contention that it is valid to study language code independently of its social context.

Since the appearance of Katz and Fodor's important semantic theory paper (1963), the problem of semantic description in transformational grammar has received much attention. Many linguists have provided counter-examples to Chomsky's claim (1965) that all relevant semantic data is contained in deep syntax. Now, generative semanticists claim that no principled boundary can be drawn between syntax and semantics; hence, there cannot be a distinct syntactic deep structure, and Chomsky's "interpretive" semantics are not adequate (G. Lakoff 1971, McCawley 1968; a recent defense of interpretive semantics is Jackendoff 1972).

Sociolinguists, in addition, claim that the competence vs. performance dichotomy is also wrongly construed; "raw grammaticality" is not all that native speakers intuitively know about their language.

Rules of appropriateness beyond grammar govern speech, and are acquired as part of conceptions of self and of meanings associated both with particular forms of speech and with the act of speech itself (Hymes 1971:56).

Hence while

transformational theory recognizes that what seems the same sentence may enter into two quite different sets of relations, syntactically; it must [also] recognize the same thing to be true, socially (ibid:58).
In short, the semantics and sociolinguistics movement is insisting that language structure cannot be properly understood in isolation from the context of language use (R. Lakoff 1972). As semanticist George Lakoff rather forcefully puts it:

What we are trying to do is develop a linguistic theory that is rooted in the study of human thought and culture—the very antithesis of transformational grammar as narrowly construed by Chomsky (G. Lakoff 1972:34).

While I do not intend to use current struggles in linguistic theory as a justification for an ethnomusicological posture, I think it worth pointing out that the hot issue in linguistics is much the same as the central theoretical split in ethnomusicology—the split between those who think that the autonomous structure of code constitutes an explanation of a phenomenon and those who think that interplay of context with code is what needs to be explained. This is essentially the split between musicological and anthropological ethnomusicology (Merriam 1969).

Whether any of us like it or not, the fact is that people make music, and they make it for and with other people. Consequently, ethnomusicological theory must somehow attempt to account for such facts (Merriam 1964:17-36). Hence we are led to seriously question whether linguistic models, confined to sound structure, constitute adequate explanations of ethnomusicological facts.

If twentieth century anthropology has shown anything, it is that context is the single most crucial epistemological variable in ethnographic method and description. It seems obvious that the same must be true of the study of music in culture. As Blacking states so well in his critique of musical structuralism:

Music is much more than a cultural game and the expression of the unconscious activity of the mind, and the most rigorous structural analysis of its sounds cannot be adequate without some attention to the social dimensions of music. The rules of any musical system begin with the categorization of music and non-music, and they may seem to be arbitrary. But they are also social, in that they can have no meaning without consensus. And because social behavior is also subject to rules, it follows that there may be relationships between the rules of systems of musical and social communication. This seems to me to be the essential justification for the existence of ethnomusicology as a separate discipline (Blacking 1972:4).

As is always the case in science, the power of a theory must be judged relative to the way the facts are circumscribed. I would join Blacking and Merriam in arguing that what is required of the most powerful ethnomusicological theory is the ability to formally account for the interplay of sound structure with the context and cultural assumptions of its creators/listeners.
To sum up 3.1, I conclude that until basic theoretical questions like the many raised above are explicitly dealt with, the use by analogy of linguistic models does not clarify ethnomusicological facts and does not clarify the task of ethnomusicalogical explanation.

3.2. Formalism. Now that the problems with analogizing have been noted, we will deal with the other reason, formalism. This is clearly the more sophisticated reason, and the more important to counter. The point I wish to develop is that while the property "formal" is an important part of science, its nature has been misunderstood by those using linguistic formalisms in ethnomusicology.

To begin, we must distinguish two senses of the notion "formal." The first sense is formal inquiry; this basically denotes three properties: (a) explicitness, via resolution of conceptual ambiguity, (b) standardization, via resolution of notational and terminological ambiguity, and (c) generalization, via elimination of the inessential. Hence formal inquiry would be synonymous with highly objective inquiry. This is the way philosophers of science use "formal"; both Kuhn (1962:15-18) and Hempel (1966:13) point out that a science is immature without a governing paradigm to give direction to inquiry; without such formalization the collection and interpretation of data is largely random and unscientific.

Such formalization is the foundation of modern linguistics; as Lyons writes:

Chomsky's most original and probably his most enduring contribution to linguistics is the mathematical rigor and precision with which he formalized the properties of alternate systems of grammatical description (Lyons 1970:43).

Nettl (1958:37) has alluded to this property as a justification for linguistic models; in particular he is impressed by the fact that descriptive linguistics has had some relationship to natural science.

The second sense of formal derives from formal logic. This property enters into the discussion because music is frequently likened to mathematics and logic, as is language (for instance, in Whorf 1956:248). Also, there are a number of simple parallels between a system of formal logic and a generative grammar, and Fodor points out (1970:199-200) that linguistic rules function like logical inference rules; the former preserve grammaticality while mapping through syntactic transformations; the latter preserve truth while mapping through formulae.6

While there is some allusion to this latter sense of "formal" (formal logic) in the current literature, it is the former sense (formal inquiry) that concerns the proponents of linguistic models. Their argument, as stated
before, is that linguistic models will formalize ethnomusicological description, a valid goal since all progress in science is characterized by formalization.

3.2.1. The “Hollow Shell” of Formalism. Surely none of us would deny that an increase in objectivity via explicitness, standardization, and generalization would enhance ethnomusicology. And it is certainly the case that many of these qualities characterize modern linguistics. But in envying formalism, proponents of linguistic models have failed to distinguish the theoretical task of formalizing ethnomusicology from the exploratory exercise of borrowing notational and terminological formalisms from linguistics. Many cases could illustrate this point; consider these two:

(1) In his discussion of Diola-Fogny funeral songs, Sapir summarizes musical mechanics in phrase-structure and transformational rules, briefly apologizes for using outdated conventions of transformational grammar rule writing, but concludes that the analysis serves our present needs, which are simply to illustrate that on a general level bunansar song-phrasing can be subject, without much difficulty, to formal statement. Obviously, other techniques of formal statement could serve equally well (Sapir 1969:182).

Yes, obviously other techniques of formal statement could serve equally well; this is making the problem into a game where the object is to rewrite one set of abstractions (musical transcription) into another set of abstractions (transformational grammar). Any formal statement might work, but the aim of an ethnomusicological theory must be to find the best way to explain things, not just ways that work. The point is that formalism is treated here as if it were a value in itself—a value unrelated to the goals of developing ethnomusicological theory.

(2) In an even more abstract approach, Lidov makes the following statement at the beginning of his paper:

My objective is not specifically ethnomusicological. It is rather the theoretical one of developing musical applications for formalisms of mathematical linguistics...My investigation is based on a very small amount of data, too small to certify any generalization as secure. The essence of the work is formal—only formal or purely or merely formal—your choice—and without further pretensions (Lidov 1972:1).

Despite Lidov’s disclaimers I find the approach absurdly formal and totally pretentious, not because I can’t appreciate his mathematics, but because he purports to do a theoretical task and then says nothing about what kind of ethnomusicological theory he is talking about. Yet worse, the music is considered as nothing more than one dimensional transcriptions—a set of
abstractions which a mathematician may retranslate into other abstractions of another logical order. This method of analysis is based on the completely false assumption that transcriptions of music have some sort of objective reality, and are standardized to the extent that linguistic phonetic transcription is standardized. Moreover, the author is absolved from discussing what claims this type of “explanation” is really making and what (if anything) it has to do with music because the “essence of the work is formal” and because there was little data to begin with. When it boils down this is an “anything that’s possible is interesting and/or feasible” approach, and it has little to do with the development of a scientific ethnomusicology; it merely exalts formalism as an end in itself. It does not use formalism for what it really is in science—a means towards expressing general theories in the most explicit way.

I have no doubt that the authors cited above, and the other ethnomusicologists utilizing similar approaches have good intentions; I simply want to point out that they are not formalizing ethnomusicology—they are just using the formalisms of linguistic notation and terminology. They have given analyses filled with tree diagrams, phrase markers, derivations, rules, binary oppositions, and the like—but hardly any of their discussion has taken place on a theoretical level. Only Blacking (1970, 1971) and Lindblom and Sundberg (1970) have dealt explicitly with basic theoretical issues like the approach to music from natural science, the differences between music and natural language, the concept of generative description, musical competences and performance, and deep and surface structure. The rest of the literature ignores issues like the empirical comparison of models, a metatheory of music, evaluation procedures, and the relation of the models to the phenomena they supposedly explain. This paucity of theory in the midst of a sea of applications makes it clear that the models are not scientizing ethnomusicology but playing games with abstractions.

In a recent article discussing the empirical and logical superiority of a transformational approach to language teaching, linguist Robin Lakoff notes the misuse of transformational grammar in some new grammar texts. She points out that rather than borrowing and using the significant conclusions of transformational linguistics (viz., the rationalist approach), these books are simply borrowing the rules themselves, the abstractions of transformational grammar, its “narrow shell of formalism (R. Lakoff 1969:129).” Just as the books cited by Lakoff miss the point of transformational grammar, linguistically based ethnomusicology has missed the point of formalism. By simply borrowing a hollow shell of formalism from mathematics and linguistics, rather than dealing with substantive issues in theory, proponents of linguistic models have not formalized ethnomusicology; they have thrown out rules and notations which in themselves do not clarify any significant ethnomusico-logical issue. Hence, I would join with Blacking in concluding:
Analytic tools cannot be borrowed freely and used as short cuts to greater achievements in ethnomusicological research as can electronic devices such as the tape recorder: they must emerge from the nature of the subject studied (Blacking 1972:1).

4.0. CONCLUSIONS

In evaluating models, linguists and anthropologists have sometimes distinguished between a "God's truth" and a "hocus-pocus" analysis (Householder 1952, Burling 1964). The difference is essentially between doing science and playing a game: the former explains facts inherent in the data, the latter re-organizes the data into a convenient statement. As an example of the difference, Burling, in his critique of componential analysis, raises the question of whether the rules postulated by the analyst really exist or whether they, as one of many possibilities, simply work to generate back some original data (Burling 1964).

I would conclude that thus far most of the activity involving linguistic models in ethnomusicology falls into the hocus-pocus category; the models constitute new and indeed fancier ways of expressing only that part of ethnomusicological data that concerns music sound. Moreover, the reasons advanced for using the models (analogy, formalism) involve basic misunderstandings of scientific epistemology.

Nevertheless, the conclusion should not be taken to mean that (a) justification of an ethnomusicological theory deriving in part from linguistic theory is impossible, or (b) that ethnomusicology has nothing to learn from linguistics.

On the first point we should note that linguistic theory and one major anthropological theory share a basic feature—mentalism. Linguistic analysis specifies the rules that a speaker knows which account for an actual speech performance. Ethnoscienctific anthropological theory defines culture not as an inventory of the things a people make and do but has an inventory of the things that people commonly know. Hence, an explanation of cultural behavior is a theory of cultural knowledge (Werner and Fenton 1971). An adequate ethnography must then be seen as a statement of the things that people "have in mind,"—the tacit rules people know which generate acceptable behavior within their society (Goodenough 1957).

Looking at music as a domain of cultural knowledge, and using the notion of generative description from linguistics, it seems reasonable to conceptualize an ethnomusicological explanation as a theory of the things a people must know in order to understand, perform, and create acceptable music in their culture. Such a theory, like linguistic theory and ethnoscienctific anthropological theory, attempts to capture the tacit rules that govern the
domain of systematic behavior we call music. The central ethnomusicological question, What is music? is thus specifically approached via the problem, What does it mean to know a music? (Feld 1973).

On the second point, I think it obvious that ethnomusicology can learn from linguistics, just as it can learn from musicology, anthropology, aesthetics, philosophy, human biology, and physics. The real question is what ethnomusicology can learn from linguistics, and I find some current notions of that what to be very distressing. In particular, Nattiez's assessments of music semiotics (1971, 1972a, 1972b) constantly stress that linguistics is important because it can provide musicology with a mechanical and rigorous set of discovery procedures.

Musical semiotics . . . must seek to develop not binding rules for analysis, but rather a set of procedures that will always be explicit and controlled (Nattiez 1972a:4).

I would argue that mechanical discovery procedures are the least interesting thing that semiotics can do for ethnomusicology or anybody else. It is wholly unreasonable to expect that a scientific theory be a list of rules which take the analyst from data to explanation in a mechanical sweep; such an expectation shows a fundamental ignorance of the nature of scientific theory and philosophy (on the death of discovery procedures in linguistics, see Chomsky 1957:50-56). In fact, what ethnomusicology might learn from linguistics is about the nature of theory in science—the relation of deductive theory to data and fundamentals.

The problem of scientizing ethnomusicology is the problem of building a metatheory of music through which one may deductively analyze music in culture: by “analyze” I mean to separate out the acceptable and culturally appropriate music of a society from the unacceptable and culturally inappropriate music of a society, and to isolate the cultural logic which underlies the acceptable and appropriate music (Feld 1973). Implicit in such an approach is the assumption that as evidence one collects sound and observes the conceptual and behavioral factors which produce it, and as an explanation one posits the principles of cultural knowledge which give rise to the manifestation. This is essentially the approach championed by Merriam (1964) and Blacking (1970, 1971, 1972); the latter writes:

The central problem is to describe all the factors which generate the patterns of sound produced by a single composer or society; to explain music as signs and symbols of human experience in culture, and to relate musical form to its social and cultural content (Blacking 1970:69).

* * * * *
Because the stance taken in this paper is sharply critical of several individuals, I feel compelled to explicitly note that I have no interest in the petty business of personal attack. Rather, my concern has simply been to raise certain empirical and substantive issues that must be dealt with in the development of ethnomusicological theory. In doing so I have deliberately played the Devil’s Advocate and voiced things in such a way that hopefully will provoke heated response, to the benefit of all concerned with epistemological refinement in ethnomusicology theory. As the Cat tried to explain to Alice, the problem of figuring out where to go is logically prior to the problem of how to get there; mutatis mutandis, the problem of conceptualizing an adequate theory is logically prior to expressing rules by means of the theory’s notational abstractions.

FOOTNOTES

1. Written June 1973. Certain threads of thought presented here originated in two earlier papers: “Linguistically Based Formal Analysis vs. Communication Theory” and “Towards a Metatheory of Music”; both were presented in Alan Merriam’s classes in The Arts in Anthropology at Indiana University during 1972-3. For critical feedback on those ideas, as well as on the earlier draft of this paper, I am grateful to Prof. Merriam and especially to Jim Brink. My thoughts on the problems of dealing with symbolic forms as languages has benefitted greatly from conversations with Sol Worth on visual (especially film) communication, and with Carl Voegelin on linguistics.

2. This literature appears after the publication of Syntactic Structures (Chomsky 1957), which leads one to wonder whether the structuralist paradigm is more applicable (i.e. bears some inherent relation) to music than the transformational model or whether it is accidental that those applying linguistic models have a structuralist preference. Unfortunately, this question is not raised in the literature.

3. If this were the case, methods of musical analysis should be as applicable to linguistics as methods of linguistic analysis are to music. No proponents of linguistic models discuss this possibility.

4. Perhaps Nattiez’s characterization derives from the fact that structuralism is the dominant paradigm in French linguistics. French readers might note that Nicolas Ruwet, whose structural studies of music (collected in Ruwet 1972a) are often cited by Nattiez, has authored an excellent French language introduction to transformational linguistics (1967b) as well as a transformational analysis of French syntax (1972b).


6. Transformational rules preserve meaning while mapping through syntax only if one is operating within the transformational grammar framework where all essential semantic information is contained in deep syntax.

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