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Seeger's Unitary Field Theory Reconsidered

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As musicians, we are aware of a certain tension between making music—through composition, performance, or ritual—and talking about music. Making music is immediate, absorptive, and consuming, a torrent that sweeps us along in its path. Talking about music walls in the torrent, and the trickle that remains sometimes scarcely resembles that which has enraptured us. This opposition is not all there is to the relationship between language and music—the two modes of communication are far too rich to submit to such a simple reduction—but it is central to understanding the tension between making music and talking about music. This tension stems from two problems of the application of language (i.e., natural language) to music. First, language is not very good for describing processes. Language can be *part* of a process, as in the case of a play or a poem, but that is another thing. In general what one gets out of an application of language to phenomena is the fixed and immutable, even in situations where neither is to be expected. Second, it must be recognized that there are some concepts proper to music and distinct from language. To explain a little: sound images are part of the central business of what we call music. Part of what it means to be a musician is to try to express things in sound that cannot be expressed in words. And for these things that cannot be expressed in words—what I call properly musical concepts—language is simply inadequate. I shall develop the

notion of a properly musical concept in greater detail in the latter half of this essay; in my own work it has been fundamental to addressing the question of how it is we structure our understanding of music and for developing an account of the relationship between language and music.

Charles Seeger wrestled with the relationship between language and music throughout his long life. In 1913, only a year after he took charge of starting a music program at Berkeley, he wrote, "The term 'Musicology' comprises, in its widest sense, the whole linguistic treatment of music—the manual instruction, the historical study, the music-research of the psycho-physical laboratory, the piece of music criticism. . . . Music is not founded upon language or upon language studies. But its conduct in our day depends customarily on an extensive use of language" (Seeger 1913: n.p.).

In later years Seeger situated the paradox of music's dependence on language at the musicological juncture. Speaking to the Society for Ethnomusicology in 1976, Seeger described the musicological juncture as "the situation we place ourselves in when we talk about music and particularly when, as now, we talk about talking about music" (1977a:180). The essays of Seeger's final two decades repeatedly explored this situation, examining the way speech was used generally, how it was applied to music specifically, and the differences and similarities between the two modes of communication. Again and again he worried the problem of the ways in which speech and language (terms he used interchangeably) constrain an understanding of music. However, in his proposal for a unitary field theory for musicology, which first appeared in print in 1970, and then (with slight revisions) in *Studies in Musicology*, he suggested a reversal of conceptualization that was telling. Seeger argued, "It is true that speech and music are very unlike in many ways, but they are very like in others. One can try to use agreement on the latter to help agreement upon the former's *account* of the latter" (1977c:104).[1] That is, knowledge of music should be used to refine the way one applies language to music.

In the time that remained to him Seeger was unable to take full advantage of the reversal he proposed. However, as part of the groundwork for this proposal he outlined a system of independent yet related conceptual domains that together formed what he called a unitary field. Speech was one such domain, music another. Conceptual domains of a strikingly similar sort have played an important role in recent accounts of linguistic structure and appear to be important for understanding cognition as a whole. In this chapter I would like to consider briefly the

main points of Seeger's unitary field theory as he developed it for musicology and then offer an interpretation of aspects of this theory based on recent research in linguistics and cognition. I shall also draw on some of my recent work on the processes involved in conceptualizing music. What I hope to accomplish is a revitalization of Seeger's essential vision by considering closely the cognitive and semantic issues raised by talking about music.

Seeger's Unitary Field Theory

Seeger gave the first version of his unitary field theory for musicology in a paper read in December 1944. The theory was to have had a function analogous to that of Einstein's unified field theory: the explicit task was the definition and systematization of musicology. Apparently no typescript of this paper has survived. However, an abstract was published in the *Bulletin of the American Musicological Society* (Seeger 1947), and it is this abstract that served as a point of departure for the 1970 version of the theory, which was written as a dialogue between Seeger, Boris Kremenliev, and a student named Jim Yost.[2]

Seeger began his definition and systematization of musicology with the notion of a "world view." Each person, he proposes, has a worldview, a highly conceptualized account of how things appear, the product of reflection on the world without and the world within. Although a worldview is taken to be "highly conceptualized" it is not necessarily systematic; in the unattributed prologue to the 1970 version of the theory, a worldview is described as "that which is not language" (Seeger 1970:171). This description, and the perspective that it entails, is useful for understanding the unitary field theory, and in the following the assumption is that a worldview is unsystematized and nonlinguistic.

Extending the notion of a worldview a little, we can think of each scholarly discipline as incorporating a particular worldview of its own (Seeger 1977c:105). Although the concept of a worldview is easy enough to grasp, coming to terms with its empirical referent is rather more difficult. To facilitate the process, Seeger suggests the heuristic of a structural universe, a complex of empirical entities to which the worldview refers. In brief, each structural universe comprises the plurality hidden in the apparent unity of its respective worldview. The structural universe also permits a systematic account, through language, of the nonlinguistic worldview. Thus the worldview of musicology has as its empirical referent the structural universe of musicology, a universe that contains a

number of subuniverses. For the purposes of this chapter only the first five subuniverses introduced by Seeger need be considered; the sixth, the subuniverse of value, is introduced much later in the dialogue and is not essential to understanding the basic outlines of Seeger's unitary field theory. The discussion of value also engages a host of important issues that occupied Seeger throughout his career but that are not central to the concerns here.

The first subuniverse proposed by Seeger is that of the physical, phenomenal, external world, the domain of science and fact, represented by a P on figure 6.1. The second subuniverse is that of discourse, or speech, represented by an S on figure 6.1. This domain includes all three modes of speech recognized by Seeger: the affective, or mystical; the reasoned, or logical; and the discursive, or commonsensical (1976, 1977b). The third subuniverse is that of music, represented by an M on figure 6.1. Seeger argues "if there is a universe of speech, which is one way men communicate by mediums of sound, why should there not be one of the other mediums of communicating by sound—music? As musicians, we know that music communicates something that speech does not" (1977c:106–7). The fourth subuniverse is a personal one, a sort of half-conscious, experiential domain just prior to, or perhaps just beyond, verbalization or representation. Seeger summons this domain with a rhetorical question: "When you run into a snag in what you are writing about or are composing, don't you ever feel that there is a fund of knowledge, feelings, and purposes rumbling around inside you that is definitely yours and no one else's . . . , but it is not quite in the order you could wish it to be so as to enable you to clarify the passage you are working on; and that by exploring it a bit deliberately or resting and letting yourself dream you either solve the problem satisfactorily or give up and make a fresh start?" (107) This subuniverse is represented by an I on figure 6.1. The fifth subuniverse is that of culture, which in its social
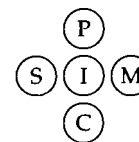

Figure 6.1. Seeger's representation of the subuniverses of the structural universe of musicology (Reprinted with permission from Charles Seeger, *Studies in Musicology, 1935–1975*, 108, © 1977 by the Regents of the University of California)

organization and traditions provides an essential framework for the very possibility of music; it is represented by a C on figure 6.1.

It is upon these five subuniverses that Seeger builds his comprehensive definition of musicology. In his words,

> musicology is (1) *a speech study* [S], systematic as well as historical, critical as well as scientific or scientistic; whose field is (2) *the total music* [M] of man, both in itself and in its relationships to what is not itself; whose cultivation is (3) *by individual students* [I] who can view its field as musicians as well as in the terms devised by nonmusical specialists of whose fields some aspects of music are data; whose aim is to contribute to *the understanding of man*, in terms both (4) of human *culture* [C] and (5) of his relationships with the *physical universe* [P]. (1977c:108)

And it is at this point that we come to the unitary aspect of Seeger's theory, for he asserts that there is a special relationship that obtains among the five domains: *each subuniverse includes all the others*. He illustrates the inclusion relations with a figure drawn from the practices of formal logic, shown in figure 6.2.

Seeger clearly intends this assertion to be somewhat paradoxical (Boris Kremenliev responds, "Oh, come now!"). Having described musicology as an amalgamation of the unique characteristics of five discrete subuniverses he now proposes a reflexive inclusion among the subuniverses based on a commutativity of relationships not evident in his account of their structure. However, a type of reflexive inclusion does in fact follow from the function of these subuniverses within Seeger's theory. Let us retrace the steps that brought us to this paradoxical situation.

The point of departure for Seeger's theory is the notion of a worldview (that is *un*systematized); the worldview has as its empirical referent a structural universe (that *is* systematized). Each structural universe is understood to be a complex, systematic plurality. One aspect of this
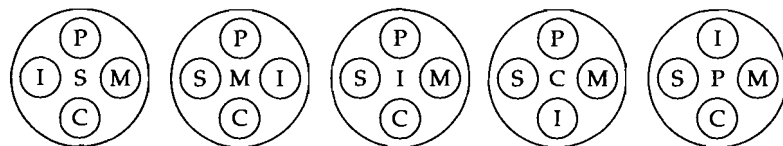

Figure 6.2. Seeger's representation of inclusion relations among the five subuniverses (Reprinted with permission from Charles Seeger, *Studies in Musicology, 1935–1975*, 109, © 1977 by the Regents of the University of California)

complex plurality is that the structural universe is itself made up of a number of subuniverses; these subuniverses are one way of bringing order to the wealth of information represented by the structural universe. The crux of the paradox concerns the relationships between these subuniverses, for priority among the subuniverses is not assigned: any subuniverse can be taken as a primary referent relative to which the other subuniverses are interpreted. Of course, each interpretation will change the topography of the structural universe of musicology. For instance, speech could be given priority; after all, speech is where the other four subuniverses are named and where interrelationships between them are established (this relationship is represented in figure 6.2a). Or music could be taken as primary, and the other four subuniverses interpreted in terms of music (figure 6.2b). From another perspective it is the universe of the individual that is primary, for it is here that the other subuniverses are actually experienced (figure 6.2c). There is certainly a perspective where culture is the primary referent, and the other subuniverses are contained within its encompassing embrace (figure 6.2d). And, finally, is it not the case that the constitutive phenomena of each subuniverse are part of the physical universe (figure 6.2e; Seeger 1977c: 109–10)?

Although it is possible to explain the idea of reflexive inclusion systematically, this does not necessarily resolve the problem practically. What sense is there in saying that music can be regarded as a subdomain of speech *and* speech can be regarded as a subdomain of music? Is this paradoxical situation simply a manifestation of Seeger's love of system (which is represented throughout his writings), or does it point to more profound insights into the relationship between speech, music, and other aspects of human experience?

There is little doubt that aspects of the unitary field theory for musicology reflect Seeger's love of system, a love graphically demonstrated in the elaborate fold-out table that accompanied his essay. However, the paradox of self-inclusion is not so much an accident or a hierarchical inconsistency as it is detritus left by Seeger on the battlefield of speech and music. Seeger was unwilling to surrender his crucial insight that there was a world of music within which theorizing, creativity, and understanding could take place. He was also unable to surrender certain priorities of meaning construction that he had inherited from the writings of early twentieth-century semioticians. And so Seeger could not grant final priority to either music or language, but instead set them spinning around one another like paired stars (Seeger 1977c: 113).

In recent years musicians have frequently looked to linguistics and semiotics to expand the possibilities for developing accounts of music (Powers 1980; Lerdahl and Jackendoff 1983; Nattiez 1990; Agawu 1991; Hatten 1992, 1994). Linguists and semioticians have less often met the challenge to their theories presented by the apparent asymmetry between music's syntactic and semantic development, or considered the possibilities music presents as a nonlinguistic domain for conceptualization and communication (see Eco 1976:10–11, 88–90; for a less ambitious but perhaps more honest consideration see Langacker 1987). However, linguists *have* recently come to consider how meaning construction comes about, and the linguistic theories that have resulted are particularly useful for dealing with Seeger's paradox. In the following I want to focus on an influential theory of meaning construction originally proposed by Gilles Fauconnier. This theory can be used to make the relationship between the domains of language and music explicit and thereby provide a way around the complications of Seeger's unitary field theory. Fauconnier's theory also touches upon general cognitive activities that appear to be *prior* to language (but of which one is not necessarily conscious). I take the position that there is a basic level of cognitive activity prior to *both* language and music. This position, only a few aspects of which can be sketched here, affords a perspective that places Seeger's theory within a broader theory of cognition. This broader theory can not only accommodate Seeger's fundamental insights, but takes them as cornerstones upon which to build an understanding of the process of conceptualizing music.

Recent Theories of Linguistic and Cognitive Structure

Fauconnier's Mental Spaces

Gilles Fauconnier developed his theory of meaning construction as a means of accounting for the multiple mental representations to which a given grammatical construction can give rise. For instance, the sentence

s1.0: *Plato is on the top shelf*

could be the basis for a number of mental representations, including:

MR1.1: Plato (his body) is on the top shelf
MR1.2: The books by Plato are on the top shelf
MR1.3: The bust of Plato is on the top shelf

It follows that the construction process for these mental representations

is underdetermined by the grammatical instructions provided by a given sentence: one sentence can yield multiple mental representations (Fauconnier 1994:2). Because a different meaning is attached to each mental representation, a given sentence can thus have more than one meaning.

It is important to note that, while the construction processes for each mental representation are underdetermined, they are not *un*determined. The sample sentence would not normally give rise to the mental representation *Your duck is on the top shelf* unless your duck were named Plato. One goal of Fauconnier's study is to explore the possibilities for and the restrictions on the construction of mental representations from language.

In the case of the first example, one sentence gave rise to a number of mental representations. Multiple mental representations may also be implicit within a single sentence. Consider example S2.0:

s2.0: *In Len's painting, the girl with blue eyes has green eyes.*

Here two mental representations are summoned: first, the world of Len's painting, which contains a girl with green eyes, and second, the real world, which contains a girl with blue eyes who has served as a model for the image in Len's painting. Connection between the two worlds is based on the highly pragmatic assumption that the prepositional phrase "In Len's painting" sets up a world of images based on real world models.

The notion of "the real world" plays an important part in this account—it is, after all, the source for the images in the painting. However, this does not necessarily entail that the real world is the primary referent for language. For the sentence

s3.0: *Bruce believes that Aristotle and Plato are the same person*

the real world does not play an immediate part—the sentence instead refers to the world of Bruce's beliefs. In Fauconnier's theory of meaning construction, reality is *not* a privileged domain, but simply another mental representation (Fauconnier 1994:15). In this Fauconnier echoes Erving Goffman's theory of frame analysis (the influence of which Fauconnier acknowledges). Some ten years earlier Goffman had recognized multiple, and occasionally simultaneous, realms of being, among which what we call reality was but one (Goffman 1974:564). In both cases the status of objects in the real world is not the main issue, nor is the accuracy with which a mental representation or frame correlates with or describes the real world. What is at issue is the character and properties of the mental entities themselves, as reflected in the way we talk and think.

Fauconnier calls a mental representation evoked by language a *mental space*.[3] Mental spaces are constructs distinct from linguistic structures but built up in any discourse according to guidelines provided by the linguistic expressions. Mental spaces can be thought of as structured, incremental sets—that is, sets that are constituted of elements and relations between elements (Fauconnier 1994:16). Mental spaces are also highly dynamic and are constantly modified as thought unfolds.[4]

A bit of technical terminology will facilitate the discussion of Fauconnier's theory. The linguistic expressions that establish mental spaces are called *space-builders*. Typical space-builders may be prepositional phrases, adverbs, connectives, or underlying subject-verb combinations. Space-builders always have their foundation in a larger space, the *parent space*. The parent space may be inferred pragmatically from previous discourse or may be explicitly indicated by the syntactic embedding of space-builders. For example, in *"Bruce believes that in John's story Aristotle is Plato,"* the mental space of *John's story* is a part of (or is included in the mental space of) *what Bruce believes* (Fauconnier 1994:17).

Some (but not necessarily all) of the elements of the *daughter space* are pragmatically connected to the parent space. To describe this process, Fauconnier uses the notion of *triggers, targets,* and *connectors* (1994:4). The trigger is an element in the parent space: in example S2.0, the trigger is *the girl with blue eyes*. The target is an element in the daughter space— *the girl with green eyes*. The daughter space was of course established by a space-builder—here, *in Len's painting*. The connector is defined as a *pragmatic function:* such a function links dissimilar objects for psychological, cultural, or locally pragmatic reasons (1994:3). In general, connectors reflect the cognitive organization basic to meaning construction (discussed in more detail below). In example S2.0 the pragmatic function is an image connector, which links models to images. The two mental spaces, their elements, and the connection between them are represented schematically in figure 6.3; similar diagrams are given in figures 6.4 and 6.5 for the sentences of examples S1.0 and S3.0.

To summarize: in Fauconnier's theory of mental spaces, linguistic expressions introduce (or build up) mental representations, called mental spaces. Each mental space consists of elements and relations between these elements. A mental space is connected to other mental spaces by pragmatic functions, or connectors, that link mental objects for psychological, cultural, or locally pragmatic reasons. We move from one mental space to another by means of these connectors, attributing a different meaning to the linguistic expression with each different space. Fun-
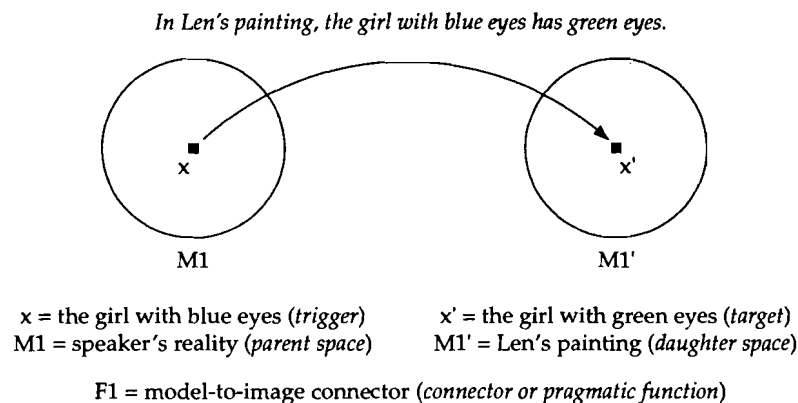
In Len's painting, the girl with blue eyes has green eyes.

x = the girl with blue eyes (*trigger*)   x' = the girl with green eyes (*target*)
M1 = speaker's reality (*parent space*)   M1' = Len's painting (*daughter space*)

F1 = model-to-image connector (*connector or pragmatic function*)

Figure 6.3. Schematic representation of a mental space structured by a model-to-image connector

Plato is on the top shelf.

y = Plato (*trigger*)   y' = the books by Plato (*target*)
M2 = speaker's reality (*parent space*)   M2' = author ⇒ books space
                                                                  (*daughter space*)

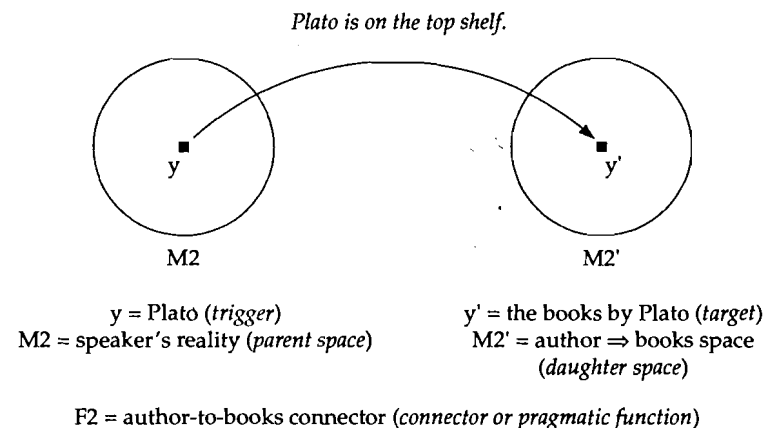F2 = author-to-books connector (*connector or pragmatic function*)

Figure 6.4. Schematic representation of a mental space structured by an author-to-books connector

Bruce believes that Aristotle and Plato are the same person.

z = Aristotle (*trigger*)   z' = Plato (*target*)
M3 = Bruce's beliefs (*parent space*)   M3' = reality (*daughter space*)

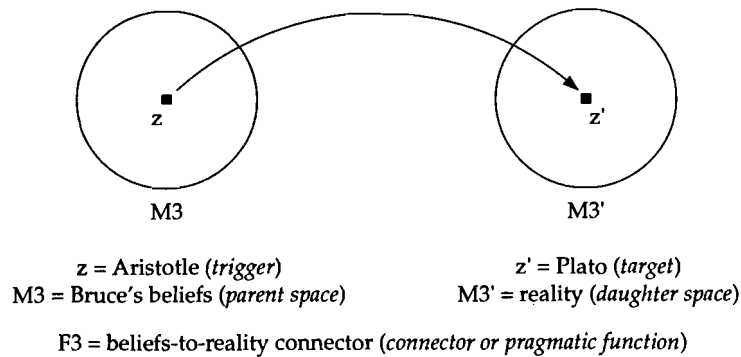F3 = beliefs-to-reality connector (*connector or pragmatic function*)

Figure 6.5. Schematic representation of a mental space structured by a beliefs-to-reality connector

damental to this theory is the view that linguistic expressions do not have one primary referent in the real world, but instead set up the *basis* for some form of reference by establishing a mental representation or group of representations.

Mental Spaces and Music

But what of music? A properly musical concept, in the most general terms, could be described as a concept-about-sound that stands apart from language. By definition, this is a mental representation that is *not* introduced or built up by a linguistic expression—in consequence it falls outside Fauconnier's theory. One way around this problem would be to relax (for present purposes) the reliance on linguistic expressions for the construction of mental representations, resulting in a modified version of the theory of mental spaces.[5] After all, it would appear that many mental representations (for constructs such as "It hurts when you bend my arm that way" or "That pan is very hot") do not require language for their introduction, since they can arise through direct experience. (The notion of mental representations that do not require linguistic expressions for their introduction also touches on the problem of the ultimate origin for the parent space, which is not discussed by Fauconnier.) In this modified version of the theory of mental spaces the domain of music (with its properly musical concepts) would be connected to the domain of speech through a music-to-speech connector. Conversely the domain

of speech could be connected to the domain of music through a speech-to-music connector.[6]

This approach can then be used to resolve Seeger's paradox of reflexive inclusion. Each of the arrangements given in figure 6.2 could be seen as a reflection of the fluid possibilities for structuring the universe of musicology through the construction processes related to mental spaces. The primary subuniverse is equivalent to the parent space; the choice of parent space dictates the sort of connectors required to link this space (or subuniverse) with other spaces (or subuniverses). However, it should be mentioned that the notion of reflexive inclusion employed in Seeger's unitary field theory is changed with this interpretation. Although the music-to-speech connector is related to the speech-to-music connector, they are not equivalent. Because mental spaces are built and linked according to connectors, each connector must be understood to be of a unique type and to operate in only one direction.

Cognitive Structure, Meaning, and Musical Understanding

Although this modification of Fauconnier's theory provides one way of explaining the somewhat puzzling notion of the *unitary* aspect of Seeger's unitary field theory (by interpreting each subuniverse as mental space that can be connected to any other mental space), the account it provides is lacking in at least two respects: first, the cognitive status of a properly musical concept is unclear; second, the basis for the construction of and connection between mental spaces must be elaborated if the structuring of mental representations provided by connectors is to be more than arbitrary.

The basic notion of a properly musical concept is influenced by my own experience: I can remember having ideas and thoughts about music well before I discovered any way of describing them to others. At first blush, such a notion might seem uncontroversial, but the idea that there might be concepts that are independent of language is by no means universally accepted by those who discuss such issues. Ray Jackendoff, for one, has maintained that musical representations are not conceptual; in his words, "musical representations do not lead ultimately to the construction of conceptual structures" (1987:237). Jackendoff *does* place musical structure in correspondence with a nonconceptual level of mental representation that he calls *body representation*, which is related to the cognitive structure behind the control and appreciation of dance (1987:238–39). This is helpful although not entirely satisfactory, since the

modified theory offers no account of the relationship of *body representation* to concepts proper.

A somewhat broader definition of "concept" is preferable to that which Jackendoff employs, one not tied specifically to language. This definition has been influenced by the work of Gerald Edelman, who has been interested in developing a biological approach to consciousness. Edelman's definition of a concept is developed as a description of the capacities necessary for the control of complex interactions between an organism and its environment:

> An animal capable of concepts is able to identify a particular thing or action and control its future behavior on the basis of that identification in a more or less *general* way. It must act *as if* it could make judgments based on recognition of category membership or integrate "particulars" into "universals." This recognition rests not just on perceptual categorization (although a concept may have a highly sensory content) but, to some degree, *must also be relational.* It can connect one perceptual categorization to another even in the absence of the stimuli that triggered these categorizations. (1989:141)[7]

Thus to have concepts involves not only the process of categorization, but also recognizing relationships *between* categories.

This description is somewhat *too* general for the purposes here; indeed Edelman's central program of developing a biological approach to consciousness requires that he give an account of prelinguistic conceptual structures, which he takes to be connected with the emergence of primary consciousness in higher life forms, including but not restricted to mammals. However, his description does suggest the outlines of a notion of concept adequate to musical experience, what I call a "properly musical concept."

A properly musical concept has three characteristics. First, it is a product of the various cognitive processes that give rise to categories. The properly musical concept is first and foremost a category in the general sense developed in recent work by Eleanor Rosch (1978), George Lakoff (1987), and Lawrence Barsalou (1992). Categories of this sort are not only fundamental to thought, but are also crucial to memory. Second, a properly musical concept can be used to guide present and future actions. These actions thus constitute a sort of indirect evidence for a cognitive structure almost as ephemeral as music itself. Third, the properly musical concept can be related to other concepts, including other musical concepts and concepts associated with bodily states (both physical and

emotional), perceptual categories (including sound, which, after all, is not necessarily music), and linguistic constructs.

It must be noted that this definition is problematic in at least one important respect: a properly musical concept, so defined, includes both a melodic fragment and naturally occurring birdsong; both a six-note chord and a tiger's roar. However, basing a notion of a properly musical concept on an *a priori* definition of music is more problematic still, given the range of cultural products that can fall under the rubric "music." It is perhaps more accurate to speak of a properly musical concept as a cognitive structure that can be *specified* for what we call music, leaving both "we" and "music" undefined.[8]

The problem of the apparent arbitrariness of meaning that results from Fauconnier's theory is, if anything, more complicated than the cognitive status of nonlinguistic concepts, and the solution that seems most viable can only be sketched here. However, this sketch in itself is promising, for it connects this problem to issues at the heart of Seeger's thought.

The fundamental idea that meaning is dependent on a group of cognitive activities—for Fauconnier, these activities are the building and connection of mental spaces—has proven to be important for recent work in linguistics and cognitive science. Ronald Langacker comments, "Meaning is not objectively given, but constructed, even for expressions pertaining to objective reality. We therefore cannot account for meaning by describing objective reality, but only by describing the cognitive routines that constitute a person's understanding of it. The subject matter of semantic analysis is human conceptualization, and the structures of concern are those that a person imposes on his mental experience through active cognitive processing" (1987:194). Important to this active cognitive processing are the bundles of knowledge generally called *knowledge structures*. Knowledge structures represent knowledge in a schematized form, "that is, organized in chunks or packages so that, given a little bit of appropriate situational context, the individual has available many likely inferences on what might happen next in a given situation" (Abelson and Black 1986:1). Knowledge structures provide the context upon which inference and judgment are based; that is, the psychological, cultural, or locally pragmatic reasons for the linkage provided by Fauconnier's connectors.

Coming to terms with the properties and characteristics of knowledge structures is an activity that has occupied researchers in cognitive science and artificial intelligence for over twenty years. Over this time the conception and characterization of knowledge structures has varied widely.[9]

Among these the notion of a *cultural model* first proposed by Naomi Quinn and Dorothy Holland is particularly applicable for the cultural studies proper to ethnomusicology. The framework for this notion is based on an approach to anthropology that views culture as a body of shared knowledge: "not a people's customs and artifacts and oral traditions, but what they must know in order to act as they do, make the things they make, and interpret their experience in the distinctive way they do" (Quinn and Holland 1987:4). Given this framework, cultural models can be thought of as "presupposed, taken-for-granted models of the world that are widely shared (although not necessarily to the exclusion of other, alternative models) by the members of a society and that play an enormous role in their understanding of the world and their behavior in it" (ibid.).[10] Some of these models are specific to the cultural practices that give rise to music and provide the cognitive framework for connecting musical activity to other sorts of activity.

Another use of knowledge structures comes in the more overtly sociological approach to music for which Stephen Feld (1984) has argued. As part of his account of the dynamic nature of musical meaning Feld adopts Goffman's notion of a *frame,* which can be understood as a relatively simple set of conventional expectations that offers a means of understanding the events we experience (Goffman 1974:21–39). Goffman's frames are quite similar to the knowledge structures discussed above and, as noted earlier, also informed Fauconnier's theory of mental spaces. Feld uses Goffman's notion of a frame to explain the communication of highly patterned aesthetic orderings for a setting, style, performance, or musical moment; musical identity; and the integration of musical experience into experience as a whole (Feld 1984:12–13). He then uses the level of generality associated with the organization provided by frames to connect his own thought to that of Seeger. Feld writes, "Of the many things Seeger stressed, he often held that music is interesting because of the way generality entails many levels or overlaps of conscious discovery in listening. Here is where our views are most compatible. I would stress that the significant feature of musical communication is not that it is untranslatable and irreducible to the verbal mode, but that its generality and multiplicity of possible messages and interpretations brings out a special kind of feelingful activity and engagement on the part of the listener" (1984:13).

In both the program of cognitive anthropology and in Feld's argument for the dynamic nature of musical meaning knowledge structures—whether as cultural models or as frames—play an important part. Of

course, the premises that music is fundamentally cultural and that music is about communication are two of the motivations for Seeger's unitary field theory for musicology. Knowledge structures such as cultural models and frames offer one way to systematize the sorts of relationships revealed by Seeger's theory and to connect our understanding of music to the more comprehensive endeavor of understanding our own understanding.

Conclusion: Words and Music

In his proposal for a unitary field theory for musicology, Seeger conceives of music as a mode of communication independent of speech; he then applies this conception to our understanding of the way speech is used, thereby setting up an environment within which language can be construed separate from other cognitive activities. A particular worldview need not be dependent on language; this is apparent in his descriptions of the subuniverses of music and the individual, both of which are theorized as standing apart from language. The conceptual domain proper to the subuniverse of the individual in fact anticipates aspects of Fauconnier's theory, for this domain is a construct distinct from linguistic constructs. The principal barrier to realizing the fruits of the unitary field theory lay in the sterility of reference to the objective world. The seeming inviolability of the link between language and the real world mitigates against assigning priority to any other conceptual realm, for to do so would sever our connections to reality: the dominance of speech is, for Seeger, inescapable. In an epilogue to the unitary field theory he writes, "speech alone poses the conditions of our lives in terms of problems, while its domination of us and our affairs is possibly the biggest problem of all. How can we expect to solve all problems in terms of the biggest problem of all—that of the linguocentric predicament—is quite a problem. As a problem, I believe it is insoluble" (1977c:133).

In the face of such a predicament the tension between music and language would appear to be irresolvable. David Burrows puts the situation in terms of near antagonism; he writes, "Music's own precisions of pitch and rhythm lie apart in a domain of relentless emergence that represents the threat of vagueness and dissolution to that tropism of the mind that seeks fixity and delimitation in the world, the tropism that has its fullest musical realization not in music itself but in music's metamorphoses into words and pictures" (1990:107). However, both Seeger and Burrows put too much trust in language. Language does not get mean-

ing from reference to objective reality. Instead meaning is constructed through active cognitive processing. And so, when one applies speech to music one is not arriving at a greater truth, but mapping connections between different conceptual domains.

There will always be a certain tension between making music and talking about music, but it is a tension that results from an awareness of identity; its analog is the tension between our individual selves and the Other. Musical constructs are distinct from linguistic constructs. To reduce one to the other is to demand that the image of the girl with blue eyes be only and absolutely a girl with blue eyes. It is a more promising endeavor to come to terms with the way we structure connections between the two domains. By making our assumptions explicit we can better understand what it is we are talking about and how our ways of talking fail us. As musicians who talk about music we are in the middle of these two domains. With courage and humility it is a place we may abide.

Notes

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1. The majority of references are to the version of the unitary field theory that appeared in the 1977 *Studies in Musicology*. It would be somewhat presumptuous to say that this is the final version of the theory, but it is at least the latest.

2. With respect to this mode of presentation, Bonnie Wade, in a letter to Lucia Core, noted that Seeger's favorite activity was dialectic discussion and that "Toward a Unitary Field Theory" gave a clear picture of that style (see Pescatello 1992:254).

3. The idea of a mental space is not new; William James employed it in his discussion of mental constructs (1890:289). Wittgenstein appears to have used the term in a fashion similar to that of Fauconnier; this is discussed by Bertrand Russell in an evaluation of the typescript for Wittgenstein's *Philosophische Bemerkungen* (Russell 1969:297, 300–301).

4. For further work on mental spaces see Fauconnier and Sweetser (1996) and Fauconnier (1997).

5. Fauconnier currently embraces the idea that mental spaces are very general and are constructed for many cognitive purposes and that they are not necessarily built up solely from language (personal communication). This perspective is also represented, somewhat less explicitly, in Fauconnier (1997).

6. Elsewhere, I discuss connections between a variety of mental spaces for music (1991:48–64). For a discussion of language and music that takes as its point of departure the notion that music is indeed ineffable, see Raffman (1993). For another view of connections between the two, see Swain (1997).

7. For a more concise expression of this notion of a concept see Edelman (1992:108).

8. Elsewhere I describe the processes through which categories of cultural products are defined as individual musical works, representatives of musical genres, and music in general (1998, n.d.:chap. 6).

9. Analogues for knowledge structures include the *frame* (Minsky 1975, 1985); *mental models* (Johnson-Laird 1983; Barsalou 1992; Gentner and Stevens 1983); *idealized cognitive models* (Lakoff 1987; McCauley 1987); and *cognitive domains* (Langacker 1987, 1992). My approach to knowledge structures is sketched in Zbikowski (1997) and developed in more detail in Zbikowski (1991:chap. 5, n.d.:chap. 4).

10. See also the work of Roy D'Andrade (1995), D'Andrade and Claudia Strauss (1992), and Bradd Shore (1996).

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