

RITUAL AND RITUALIZATION: MUSICAL MEANS OF CONVEYING AND SHAPING EMOTION IN HUMANS AND OTHER ANIMALS

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Abstract

Emotional experiences of music are notably difficult to describe and have resisted philosophical and psychological as well as vernacular explanation. This essay uses a new departure by taking an ethological approach to questions of musical experience—i.e., treating music as a behavior that evolved in ancestral humans because it contributed to their survival and reproductive success. In particular, I describe interesting and suggestive similarities between the evolutionary (biological) process of ritualization in animal communication and the ritual (cultural) uses of musical behavior in human rites or ceremonies. In both ritual and ritualization, stylized (i.e., formalized, rhythmically repeated, exaggerated, and elaborated) sounds and movements are important means of shaping the responses of participants, as they are in music. The ethological view of emotion as a motivator of behavior similarly brings a fresh approach to the understanding of possible sources of musical emotion, permitting a preliminary “ethological taxonomy” of four types of emotional response to music. Finally, surveying the uses of music in some thirty traditional societies I describe six general social functions of ritual music that have counterparts in animal ritualizations and parallels in the uses of music in modern societies.

In the preface to his magisterial *History of Music Aesthetics*, Enrico Fubini (1990) well described the difficulty of explaining musical experience:

Since ancient times, philosophers, intellectuals and musicians have written about music and have clearly believed it to have a particular status among the arts, being endowed with special powers Both the fascination it has always exerted and its extreme elusiveness are due primarily to the nature of its expressiveness: it expresses something, and yet, despite the complexity of its 'language,' it says nothing definite about anything; while everybody, even the strictest of formalist thinkers, seems to concur in ascribing to music a certain power of expression nobody has yet succeeded in defining clearly what it is that music expresses or how it does so (pp. xi-xii).

One who wishes to add to this long and abstruse discourse about musical experience should have good reasons for doing so. My excuse here is that I intend to look at the subject in an heretofore untried way—that is, as an ethologist or biological anthropologist, who approaches music as a behavior that evolved in ancestral humans because it contributed to their survival and reproductive success. I will be specifically concerned with musical emotion—how music produces emotion, and what musical emotion *is* or *does*. In an ethological view, the biological purpose of emotions is to motivate behavior—to make us respond appropriately to the sorts of occurrences in the environment that could affect us, for good or ill. In this sense, then, musical experience was originally functional.

This approach is unfamiliar, and carries with it assumptions and questions that deserve treatment much more extensive than I shall be able to provide in a single essay. As a preliminary step, however, I will describe interesting and suggestive similarities between the evolutionary (biological) process of “ritualization” in animal communication and the ritual (cultural) use of musical behavior in human rites or ceremonies. This comparison will, I hope, provide a useful framework for understanding (a) some of the ways that music creates and shapes (“manipulates”) emotions, and (b) the social ends that these emotional dispositions serve. My examples will come from selected small-scale traditional societies, whose members lead subsistence lives more in character with those of ancestral humans than our lives today in complex, postindustrial, modernized societies. Quite clearly, however, it is from these complex societies that our present ideas about music have come. Thus to begin with, it will be useful to look—somewhat summarily—at a few general differences in the ways in which music is regarded and used in nonWestern societies as compared to the modern West.

Traditional Musics Compared with Western Ideas About Music

Although the term “music” does not mean the same thing in all cultures—indeed most societies have no concept or word for “music” in a Western sense—the activities of singing and otherwise making and participating in music appear to be universal in humans. That is, “human sound communication outside the scope of spoken language” (Nettl, 1983: 24) exists in all known and described human societies, and has observable effects on its makers and listeners.

Musics in traditional societies of Africa, Oceania, Australia, North and South America, and Asia

sound very different from one another. Nonetheless, they share certain characteristics of conceptualization and behavior that, in some respects at least, differentiate them from present-day ideas about Western music, which have been affected, among other things, by the historical process of modernity. (See also the last section of this paper).

In the modern West, music—although difficult to define—typically refers to formalized melodic and rhythmic sounds produced by the human voice or other instruments. In small-scale societies, however, a phenomenon that we would call music (say, melodic vocalizing or drumming) may well be categorized somewhat differently and overlap with phenomena that a Western observer would probably consider irrelevant. For example, what might be identified as the “music” of the Kaluli of the Southern Highlands of Papua New Guinea, because it sounds like “song” or “humanly organized sound,” is regarded by its makers as being but one of a variety of sounds shared to greater or lesser degrees by natural and animal agents—for example, rain, waterfalls, crickets, and birds, as well as humans (Feld, 1984: 389). Alternatively, a traditional society’s ideas about its music might exclude elements that a Western observer would consider essential or make distinctions we ignore. The Venda of Southern Africa deny, as we might not, that there is a continuum between speech and song, but within the realm of what they consider to be music they distinguish, as we do not, between melodies that are free or lyrical and melodies that are dominated by the tone patterns of words (Blacking, 1982: 19). Nonmusical sounds (including distress calls of a chicken dragged on the ground from house to house, gunshots, blacksmith bellows, and cacophony from striking household utensils) may be re-contextualized by the Anlo-Ewe in Ghana to become “musical” sounds in healing and exorcism practices (Avorgbedor, 2000).

To Western minds, music is generally considered to be a rare talent possessed by only a few. As a consequence, most contemporary thinkers who have pondered the evolutionary contribution of music to human life regard it as an inexplicable “mystery” because it is so unevenly distributed among individuals (e.g., Barrow, 1995). If one looks at traditional societies, however, it is evident that “music” is as broadly endowed as any other human capacity, and virtually everyone participates in musicmaking. Although some societies have musical specialists, in most others, like the Kaluli, skill in “musical” activities such as song, stylized weeping, whooping, cheering, humming, drumming, and identifying bird, animal, and other environmental sounds is acquired naturally, rather like learning to talk and understand speech. Differences in performing and composing ability are attributed to differences in individual interest and desire, not to special endowment (Feld, 1984: 390).

In traditional societies also, unlike in the modern West, music is typically -- like speech -- a multimedia activity (Blacking, 1982: 16). That is, singing or playing an instrument are inseparable from gestural movement (in both performer and audience), whether as dance or beating time with the body, hands, or feet. For example, the Kalapalo of central Brazil “cannot easily” sing a tune without the movement of the body, especially the legs; a listener might swing in his or her hammock or merely tap a hand on a nearby housepost (Basso, 1985: 250).

Traditional music is rarely an end in itself, but a means to social ends (e.g., Sugarman, 1988: 2), and to varying degrees is integrated with other activities of life. Whereas in modern societies we tend to think

of music as something set apart as a performance by specialists for somewhat detached appreciation by individuals in an audience, traditional music is generally integral to ritual ceremonies that are performed with a particular important pragmatic end in view (Kapferer, 1983: 188; Seeger, 1987: 7). These ceremonies usually require community participation, and, along with the music that is essential to them, are considered to be vitally necessary to the maintenance of the society. As Anthony Seeger has claimed for the Suyá people of the Northern Mato Grosso in Brazil, it is not the economic system that created the ritual but the ritual that mobilizes men, women, and children to be willing participants in the economic system (Seeger, 1987: 132).

More than in modern societies, traditional music is associated with the supernatural (Nettl, 1983: 40)—with a non-mundane time or realm or state that is frequently created, sustained, or reaffirmed by its performance (e.g., Shapiro and Talamantez, 1986; Seeger, 1987: 85, 131). Frequently, for example, music is used to communicate with powerful beings (e.g., in the Kalapalo of central Brazil, where they are “sung into being” [Basso, 1985: 253], or the Nigerian Yoruba, where they are “danced into existence” [Drewal and Drewal, 1983: 105]), or to assist participants into a trance state (e.g., Katz, 1982; Roseman, 1991; Becker, 2000), in which the ritual’s transformative purpose can take place,¹ since music is frequently thought to have transcendent and transformative powers (e.g., Basso, 1985: 243; Sugarman, 1988; Norton, 2000) and to structure the participants’ reality (e.g., Kapferer, 1983).

This brief and necessarily incomplete introduction to the practice of music in traditional societies should make clear that in order to understand music as an evolved human endowment, it is essential to think of it more broadly than is customary in the modern West. It is possible that the earliest human music included sounds or activities that are not today considered to be music (e.g., movement or dance); ancestral music would have been almost certainly primarily communal and participatory rather than solitary, remote, and impractical. Indeed, judging by music in traditional societies of today, it would have been essential to—even coextensive with—ceremonial occasions in which important social purposes were addressed.

I will describe these social purposes in a later section, and return again to the aforementioned contrasts between traditional and modern ideas about the nature and practice of music at the end of the essay. First, however, let us examine suggestive parallels between human ritual—in which music appears to be a universal and necessary component—and the defining features of what students of animal behavior call “ritualized” behaviors.

Ritual and Ritualization

The term “ritual,” as the British anthropologist Jack Goody (1961) claimed some forty years ago, has been applied by anthropologists and others to a wide assortment of acts and beliefs. Here I will follow Julian Huxley and others (Huxley, 1966, Watanabe and Smuts, 1999) by approaching human ritual through an understanding of the term “ritualization,” which has a precise meaning in the study of animal communication.²

Before beginning this discussion, however, let us digress and briefly review what is meant by the term “evolution by natural selection.” Natural selection is the process by which species change (evolve) over

time. Breeders of plants and animals exercise *artificial* selection, choosing to cross individuals with certain desirable traits (e.g., coat color, shape, size, hardiness, speed, milk productivity) for particular purposes. In natural selection, the environment does the “choosing,” so that over generations the individuals who are best adapted to existing environmental circumstances tend to predominate.

Charles Darwin’s theory of evolution by natural selection arises from applying logic to three natural history observations: (a) *superabundance*: biological organisms have the ability or tendency to reproduce themselves far more than is necessary to maintain their numbers (e.g., over a lifetime, one frog lays thousands of eggs); (b) *variation*: each individual differs from others of its kind, and these differences are inherited from parents and passed on in varying combinations to offspring; (c) *limited resources*: if every frog egg resulted in a mature frog, there would not be enough ponds and insects to sustain them. It follows that if resources are limited and there is a superabundance of individuals, there will be some kind of competition or struggle for these resources. It also follows that individuals whose differences enable them better to acquire resources and escape harm will be better able to survive and pass on their more adaptive traits to offspring, who in turn will do the same.

Not only anatomy and physiology are affected by selective forces. Psychology and behavior too have evolved to “fit” or “adapt” individuals to a way of life in a particular environment. For example, within a genus (say, Felidae), some species (lions) have a way of life (on the open savannah) that promotes sociality and group hunting, while other species’ way of life (tigers in dense jungles) fosters asociality and solitary hunting. Not only behavioral systems of social interaction but of mating, parenting, acquiring food, and defense—individually called “behaviors” or “behavioral mechanisms”—evolved to suit the members of a species to their particular environmental niche and its required way of life.³

In 1914, while studying the courtship behavior of birds (specifically, the great crested grebe), Julian Huxley proposed that highly stereotyped communicative signals in animals have evolved by natural selection in the same way as have more instrumental behaviors. He coined the term “ritualization” to refer to the process by which selection gradually alters certain behaviors into increasingly effective signals (Watanabe and Smuts, 1999). In the 1950s, ethologists—biologists who specialize in the study of animal behavior—expanded Huxley’s insight and described how the process occurs (e.g., Tinbergen, 1952, 1959).⁴

In ritualization, components of a behavior that occurs as part of normal, everyday, instrumental activity—such as preening, nestbuilding, preparing to fly, or caring for young—are, as it were, “selected” or taken out of context, “ritualized,” and used to signal an entirely different motivation—usually an attitude or intention that may then influence (affect or manipulate) the behavior of another animal. For example, the head movements used by gulls to pluck grass for building a nest may be co-opted and ritualized to signal aggression (thus driving another gull away), or behaviors derived from feeding young (e.g., touching bills, offering a token with the bill, coughing as if regurgitating) may become ritualized and used for courtship (attracting a mate).

In the course of ritualization, particular changes occur in the original behavior pattern so that the resulting signal becomes prominent, distinctive, and unambiguous, and consequently is not confused with its precursor (Smith, 1977: 328; Eibl-Eibesfeldt, 1989: 439-40). Compared to the original instrumental or

“ordinary” precursor behavior, ritualized movements become “extraordinary” and thus attract attention. They typically become (a) simplified or formalized (stereotyped), and (b) repeated rhythmically, often (c) with a “typical” intensity (Morris, 1957)—that is, with a set regularity of pace. The signals are frequently (d) exaggerated in time and space, and (e) further emphasized by the development of special colors or anatomical features.

A good example of a ritualized behavior occurs in pheasant courtship where males try to entice females by scratching and pecking at the ground as if finding food, just as hens peck to attract their chicks. The food-acquiring movement originally used instrumentally in parental behavior is co-opted for the quite different signalling function of attracting a mate, and may become further altered (ritualized—formalized and elaborated) as in the impeyan cock pheasant who, while pecking, adds a deep bow. When a female comes to investigate he spreads his wings and tail feathers, keeps his head down, and remains still while his fanned-out tail moves slowly and rhythmically up and down.

Another member of the pheasant family, the peacock, also initially scratches and bows to attract a hen, but adds even more extravagant variation to his spread tail, which has evolved to become particularly conspicuous with beautiful colors and patterning, and quivering movement. Although his beak still points downward like other kinds of pheasant, the peacock’s lavish courtship display otherwise contains little of the original food-enticement movements from which it was phylogenetically derived (Eibl-Eibesfeldt, 1971: 44-47).

Human ritual ceremony, with its associated and necessary arts, has obvious parallels with the biological display of ritualized signals (Dissanayake 1979, 1988, 1992). Watanabe and Smuts (1999) have listed characteristics of biologically-evolved cooperative (as contrasted with agonistic) ritualizations in nonhuman animals that suggest an evolutionary substrate for human culturally-created rituals. That is, ceremonial rituals, like ritualized behaviors, draw on gestures or behaviors from other social contexts and recombine them into distinctive displays or signals. These recombined displays now relate not to instrumental activities (e.g., ordinary motor behavior, everyday discourse, making and using everyday functional objects), but to specialized social communication. The ceremonial displays become “ritualized” to the extent that they circumscribe a repertoire of possible behaviors and establish a formalized framework of interaction that participants recognize as such and choose to conform to. Finally, the displays literally embody in communal participation the mutual coordination they presuppose (Watanabe and Smuts, 1999).

In a traditional North American wedding ceremony, for example, the church or hall is specially decorated with flowers; bridesmaids wear special clothing and walk solemnly in a measured tread to a musical background before the more splendidly-attired bride who is accompanied by her father. Using formal, archaic language, the officiating cleric follows a prescribed sequence of actions and words. Guests, also specially garbed, occupy prescribed places depending on their relationship to the bride or groom, and sit or stand at prescribed times. These various components of the ceremony have been extracted from their ordinary contexts (e.g., occupying shelter, covering the body, moving from place to place, interacting with friends and parents, falling in love, deciding to marry, speaking), made special and distinctive (with flowers, music, fine fabrics, arresting language, artificial movement, and prescribed spatial and temporal arrange-

ment), and recombined into a formalized or stereotyped event that participants recognize and experience together as “a wedding.” Such rituals or ceremonies have characterized human groups for thousands if not tens of thousands of years.⁵

It should be noted that a large proportion of the distinctive recombined components of human ritual ceremonies resemble (or in fact *are*) what we call the arts—dance and mime, poetic language, visual display, and “music” (song). Indeed one can view ceremonial and other arts as ordinary behavior (i.e., ordinary bodily and facial movements, ordinary speech, utilization of ordinary objects and surroundings, and ordinary prosodic vocalizations) made *extraordinary* through essentially the same operations or procedures as in animal ritualizations: formalization (stereotypy), repetition, exaggeration, and elaborations of various kinds.

Of course human arts and rituals are culturally-created, in contrast to the ritualized behaviors of animals, which are instinctive. The peacock is not free to experiment with his display, nor can a robin decide to behave like a peacock. Their partners would not understand such “creativity” and would not agree to mate and produce offspring endowed with similar ingenuity. Although human societies develop widely diverse ceremonies/arts, which may alter gradually over time, it is important to note that ceremonies/arts appear to be intrinsic and essential in all societies. One can confidently propose that the inclination to make ordinary behavior extraordinary, in circumstances about which people care greatly, is part of our biological nature (Dissanayake, 1992, 2000b).

In the case of human ceremonies/arts, one might ask *which* gestures (or behaviors) from *which* ritualized social contexts might be the substrate for cultural recombination and elaboration. If we think of *Ur-music* as combined vocal and kinesic movement (which we saw is how it is manifested most often in traditional societies today, as well as by young children) rather than in its restricted and individualized current Western sense, we can hazard an informed speculation. In earlier publications (Dissanayake, 1999, 2000a, 2000b; Miall and Dissanayake, 2003), I have suggested that culturally-created human music is drawn, at least in part, from biologically-evolved competencies and sensitivities that were originally developed in interactions between mothers and young infants.

Interestingly, one can consider mother-infant interaction itself as a biologically ritualized behavior, where visual, vocal, and kinesic expressions drawn from adult affiliative contexts—e.g., smiles, nods, soft undulant sounds, touches, caresses -- are simplified, stereotyped, repeated, and exaggerated in order to temporally coordinate and emotionally unite the mother-infant pair. Infants are born ready to respond to and coordinate their own behavior with these very signals, and especially to their dynamic variation.

In creating ceremonial rituals, human groups could draw upon the competency to formalize, repeat, and exaggerate that had been developed in kinesic-vocal-facial modalities with adults to infants, and elaborate these even more in the dances, songs, and imitations that comprise “music” in traditional if not in modern Western contexts. Formalization, repetition, and exaggeration of body movements, vocal sounds, and facial expressions are emotionally-evocative to infants, and when manipulated further, dynamically and temporally, in deliberate creations by individuals or cultures, are attention-getting and affecting to adults. Music in ceremonial rituals then can be considered as deliberate cultural formalization, repetition, exag-

generation, and elaboration of evolved sensitivities to vocal-gestural features that in their evolutionary origins conveyed emotional messages between mothers and infants.

Sources of Musical Emotion

The subject of “emotion” is specialized and complex, and use of the terms “emotion” or “feeling” is variable and imprecise among psychologists as well as laypersons (Griffiths, 1997). Unfortunately, this essay is not the place for an analysis of the conceptual and scientific problems, although such an analysis would be desirable. One could perhaps speak of affect with less ambiguity, using the work of Paul Ekman and colleagues who describe six cross-culturally produced and recognized affect programs composed of identifiable coordinated physical and physiological responses (e.g., Ekman, Levenson and Friesen, 1983). However, for a study of emotion in music, these basic affects (happiness, sadness, fear, anger, disgust, and surprise) seem limited. Not all music can be so simply or distinctly characterized, even as happy, sad, or surprising (and less so as fearful, angry, or disgusted), and will not unfailingly be recognized as such across cultures, as the facial expressions of affect programs have been shown to be.

Yet it is commonly agreed that music has “emotional” effects of some sort on participants, although the nature or source of “musical emotion” resist easy explanation. I suggest that an understanding of how emotions are manipulated in ritualized behaviors—and, by extension, in human ritual ceremonies—can contribute useful insights into the more complex problem of the nature of musical emotion in general.

Preceding sections have described how, in the biologically evolved process of ritualization in animals, elements from ordinary instrumental behavior become formalized or stereotyped, repeated with a typical regularity or intensity, exaggerated, and elaborated. Such operations upon ordinary behavior seem intrinsically to attract attention, indicate the motivation of the actor, and—significantly—influence the emotions and hence behavior of the recipient. Interestingly, these same operations of formalization, repetition, exaggeration, and elaboration are also characteristic in culturally-created ritual ceremonies—composed of “arts”—in human societies where they also attract attention and influence emotions and behavior.

Anthropological studies of human ritual typically emphasize its importance for passing on information and group tradition, functions that have been essential in the nonliterate societies that characterized humans for 99.9 percent of their history. It should not be overlooked, however, that rituals accomplish these practical purposes by shaping and even creating *appropriate feelings* in their participants. Radcliffe-Brown reminds us that ceremonies produce changes in or structure feelings: they “maintain and transmit from one generation to another the emotional dispositions on which the society depends for its existence” (Radcliffe-Brown, 1922/1948: 234). Rituals compel participants to feel (or “go through the motions of feeling”) emotions appropriate to the purposes of the ritual—e.g., confidence, pride, joyfulness, well-being, resolve, release, and unification. But how do they do this?

Salience—prominence or emphasis of any sort—is potentially *emotional*. In the generalized, unremarkable state of ordinary consciousness in which most of daily life is spent, we do not experience “emotion” so much as what might be described as mood fluctuations, like corks bobbing gently this way and that on a “stream of affect” (Watson and Clark, 1994: 90), whose eddies are more or less good (positive), bad

(negative), or indifferent. Emotion enters (or potentially enters) the scene when there is some discrepancy or change, provoking an interest. We appraise a salient or novel cue, anticipating what it means for our vital interests. Salience, novelty, and change in themselves are neither positive nor negative—they may lead to anxiety, intense fear, relief, curiosity, or delight. But an unexpected or markedly salient event seems to trigger a readiness for emotion, if not a full-blown emotion (Ellsworth, 1994: 151-52).

Formalization, repetition, exaggeration, and elaboration are all ways of giving salience, hence emotional or potentially emotional significance, to stimuli. In ritualized behaviors in animals, the marked signals are organized in time, thereby not only capturing but manipulating the attention of the recipient. The temporal progression has the power both to convey and shape (also to “tune,” integrate, or synchronize) emotion: in response to various ritualized signals, an animal may fight, flee, or coordinate its movements and sounds with the signaler to mate or, as shown above with human infants, to form and maintain an emotional bond.

I suggest that the component operations used in ritualized behaviors—formalization or regularization, stereotypy, repetition, exaggeration, and elaboration—are also prototypes for the creation of expressiveness, and hence “emotion,” in music (and the other arts). As described, infants are born ready to recognize, attend to, and respond to these operations on vocalizations, gestures, and facial expressions as presented to them by adults in coordinated interactions, and adults attend to and respond to these features as presented to them aurally, kinaesthetically, and visually in the arts (Dissanayake, 2000a, 2000b). Both mother-infant engagement and music are temporal (or sequential) structures in which changes unfolding in the present create, *and are*, the experience (Stern, 1995; Volgsten, this volume). They are capsule or prototypical examples of shaped emotional experience, exercised for their own sake—although, unknown to the participants, parent-infant mutuality contributes to each partner’s biological fitness, and musical sensitivities originally predisposed us to engage in and respond to fitness-enhancing ceremonial rituals. They are like play, “not for real,” although they have real benefits.

In music, emotion is conveyed, aroused, and shaped by changing, ongoing fluctuations in feeling state that occur in response to the music’s temporal unfolding. Otherwise ordinary sounds (as tones or beats) are given salience: they are formalized (patterned or regularized), repeated, exaggerated, and elaborated in not-quite expected ways, creating interest and perhaps uncertainty. Like the infant with its mother, the listener may detect some discrepancy or novelty in an ongoingness, and become alerted to what comes next, which either bears out or subverts one’s expectation. As Robert Jourdain (1997: 312; see also Meyer, 1956) has said:

Music sets up anticipations and then satisfies them. It can withhold its resolutions, and heighten anticipation by doing so, then to satisfy the anticipation in a great gush of resolution. When music goes out of its way to violate the very expectations that it sets up, we call it ‘expressive.’ Musicians breathe ‘feeling’ into a piece by introducing minute deviations in timing and loudness. And composers build expression into their compositions by purposely violating anticipations they have established.

To be sure, not all music (or art) is “expressive” in the sense that I have outlined above or that Jourdain and

Meyer identify. Pygmy women's music, which may constitute the "world's oldest stock of sound" (Lomax, in Thompson, 1995: 206) superimposes rich polyphony upon a polyrhythmic continuum in an "infinite sound" of "chaotic unity" (Meurant, 1995: 180). In such musics, musical emotion may result less from manipulation and resolution of uncertainty than from the contagion and conjoinment of sensory immersion and vocal and kinesic synchronization with others.

At this point, taking the foregoing discussion into account, I propose a speculative, preliminary "ethological taxonomy" of four types of emotional response to music. In specific instances, these may overlap, and a particular work may include more than one type of response. With the appropriate changes, these could be applied to other arts.

Appeal to inherent sensory and cognitive dispositions

In the arts, as in life, our attention is pleasantly drawn to sensory elements that have inherent visual, aural, cognitive and emotional allure: bright colors, smooth and skilled movements, euphonious sounds, or fascinating and intriguing subject matter. Among these appealing elements are repeated, or predictably regular, sounds or bodily movements, which (as with repetition of visual shapes, or patterns) seem to be intrinsically satisfying or pleasurable. Although positive responses to specific entities may be culturally conditioned, evolutionary psychologists (e.g., Thornhill, 1999) suggest that many aesthetic percepts are innately predisposed because they signal youth, vitality, and other features that would have indicated evolutionary advantage in ancestral times. For the Igbo people of Nigeria, as for many human societies, the most valued aesthetic qualities are brightness, clarity, precision, balance, and harmony, and these—rather than dullness, clumsiness, and debility—are understandably identified with personal and social worth (Willis, 1989). At least some musical sounds and patterns have intrinsic appeal because of sensory and cognitive features related to exercise of vitality and competence and these pleasurable stimuli are building blocks to be further formalized, repeated, exaggerated, and elaborated to varying degrees.

Association and connotation

People everywhere are drawn to experience intrinsically pleasant occasions where there is beauty, laughter, and enjoyment, and elements of such occasions may then become associated with them as when the mere sound of music in itself is associated with festivity, power, and control of disorder (e.g., Yoruba [Waterman, 1990; Lawal, 1996] and Tiv [Keil, 1979]—both Nigerian peoples). In lowland regions of South America, "wherever music is heard, something important is happening" (Seeger, 1987: 7). For the Sambia of Papua New Guinea, the sounds of flutes may evoke the combined fear and excitement of ritual participation (Herdt, 1982). In the Kalapalo of central Brazil, sound—as expletives, speech, and song, which in rituals are transformed into one another—serves as a code for interpreting states of mind, that is, for conveying ideas about feeling, personal identity, and the emotions that accompany transformative changes in one's personal relations (Basso, 1985: 91).

In modern Western societies too, various musics conventionally set the scene, in life or in mediated entertainment, for—say—suspense, solemnity, gaiety, or romance. Music may be comfortably constant and

familiar, or regularly and predictably unfolding, and foster joyful participatory emotion. Humans seem to find inherent pleasure and wellbeing in keeping together in time with others (McNeill, 1995), which connotes, because it demonstrates, accord. Simply engaging in music, where participants and audience are spatially and temporally coordinated (whether by unison, overlapping, or antiphony), is itself not only a metaphor for but a means of actively constructing or displaying social order and harmony.

Intensification

Music may also be associated with trance states (e.g., Javanese [Kartomi, 1973]). In the ceremonies of many groups, musical (and hence psychological) tension builds steadily over time (e.g., in the Eskimo/Inuit [Freuchen, 1935], Cubeo people of the Northwest Amazon [Goldman, 1964], Sinhalese [Kapferer, 1983], Kalahari !Kung [Katz, 1982], and Suya [Seeger, 1987: 5]), eventually resulting in trance, catharsis, or similar sense of transfiguration or transcendence. Intensification of volume and tempo in music parallel and thus assist physiological and psychological excitement, leading to emotional discharge.

Expectation; disruption and repair; heightened affective moments

The emotion produced by music may not be unalloyed pleasure or climactic catharsis, but a state of anticipation and uncertainty that can be manipulated along what might be called an *emotional trajectory*.

Infant expectancies in dyadic interactions with adults are organized according to three principles of salience (Beebe and Lachmann, 1994) that have suggestive similarities with musical experience. The first, expectable ongoing regulation, refers to the characteristic and predictable way in which an interaction unfolds, comparable to the comfortable constancy of musical experience described above. Other interactions are organized by violations of expectancy (disruptions), which may be mild or severe, and ensuing efforts to resolve or repair these breaches. In such interactions, infant experience is organized by a second principle, that of contrast, disjunction, and difference, in which the gap between what is expected and what is happening may be repaired, leading to experiences of coping, effectance (Gianino and Tronick, 1988:63), and rerighting, or inadequately resolved (in mismatchings), leading to frustration and distress. In the third principle, heightened affective moments, infants may experience a powerful state transformation: one dramatic moment stands out in time.

These latter two principles seem to have counterparts in musical experience in those cultures where music has acquired an emotional depth and complexity apart from its “functional” uses in ceremonial rituals. In literate societies, where musical scores can be written down and even mechanically printed, composers can expend considerable time and thought in planning and elaborating the emotional effectiveness of their creations and performers can practice and perfect their reconstruction of the composer’s intentions. However, improvised musics can attain similar if not equal complexity, and emotional force (e.g., in the art of Taqasim in the Arab Near East [Racy, 2000], and in modern jazz). It is usually these more elaborated, subtle, and sophisticated instances that are the subject of academic or critical studies of musical emotion and musical meaning by psychologists and philosophers of music. Although *what* musical experience expresses remains ever elusive and fascinating, as the excerpt from Fubini stated at the beginning of this essay,

an ethological description of the means by which musical emotion is engendered suggests that sophisticated musical emotion arises from the manipulation of expectations using the same fundamental structural features (formalization, repetition, exaggeration, elaboration) as in ritualized behaviors in nonhuman animals and in mother-infant interaction. That is, it is built upon universal psychobiological sensitivities and capacities that are—in some societies, using their specific tonal and rhythmic systems—additionally manipulated for maximum emotional effect.

Social Functions Served by Ritual Music

It is important to note that ritualized behaviors in animals, which have evolved because they contribute to individual survival and inclusive fitness, occur in biologically important contexts: they threaten, show dominance, and display resources, or indicate submission, appeasement, and willingness for interaction. Interestingly, human ritual ceremonies occur in similar if not always identical circumstances, and engaging in them may also affect survival and reproduction.

From an examination of ethnomusicological studies of rituals in more than thirty traditional societies, I have artificially extracted six general social “functions” that appear to be achieved through these rituals, and—I will argue—facilitated through their music, since music is integral and even primary to shaping the behavior and feelings of participants. (One can hardly imagine a ceremony without its music). Many rituals (e.g., *kaiko* in the Maring of Papua New Guinea [Rappaport, 1967] of course address within one ceremony a number of functions that are listed separately here.

The first three listed social functions—display of resources, control and channeling of aggression, and facilitation of courtship—have clear counterparts in ritualized behaviors of other animals. One could perhaps make the case, with certain accommodations, that rudiments of the last three functions—establishment and maintenance of social identity through rites of passage, relief from anxiety, and promotion of cooperation—exist in animal rituals as well. It should be noted that, as presented here, the latter three functions are rather broad: individual components might well be extracted for separate attention (e.g., relief from anxiety here subsumes both “mourning” and “healing”, and the promotion of cooperation can be accomplished in diverse ways, as will be discussed below).

Display of resources.

Display may be by individuals, families, or an entire social group. Examples include display of male strength and vigor as in the Suya of Brazil (Seeger, 1987: 97) and male or female beauty and skill, as in the East Asian Hmong (Catlin, 1982, 1985, 1992), where the best singers push the chest voice so high that controlled falsetto breaks are possible, creating a sobbing effect that heartrendingly depicts the tension of singing, and at the same time the skill and strength of the girl. (See also other East and Southeast Asian peoples, such as the Maranao [Cadar, 1973, 1975], and the Kmhmu [Proschan, 1992]). Family prestige and power, as in the Pacific Northwest Coast Makah (Goodman, 1992), may be displayed within the group, or one society’s resources shown to a neighboring group. There are parallels to these displays in the animal world, and Rappaport has expressly likened the *kaiko* dancing of Maring males (which indicates their interest in females, their availability, and their differential strength, endurance, wealth, and beauty) to animal

ritualized epigamic or amatory display, and the density or population size of males revealed in *kaiko* dancing to ritualized epideictic display in animals, which shows the strength of one group to another (Rappaport, 1967). Evolutionists commonly attribute the selective value of successful individual ritualized display in both animals and humans to gaining or solidifying prestige and power, and to acquiring mates.

Control and channeling of individual aggression.

Human display may be indicative not only of strength, skill, and other resources. It may be additionally perceived as more or less “aggressive,” as in Rappaport’s analysis of Maring ritual, in which he compares the Maring stake-planting ritual to animal ritualized threat display and their “small” or “nothing” fight to animal ritualized territorial display (Rappaport, 1967: 193-95). Eskimo song duels (*nith* songs) and taunts, similarly serve as ritually acceptable ways of resolving a grudge or dispute (Hoebel, 1968; Balikci, 1970; see also Basso [1985: 246] and Sugarman [1988: 36n18] for examples in other societies). The evolutionary value of redirecting or defusing aggression in ritualized behaviors has been well studied in non-human animals.

Facilitation of courtship.

Ritualization of courtship behavior in birds has been well studied (e.g., Huxley, 1914; Tinbergen, 1952). Humans too have developed cultural rituals that allow a courting pair to coordinate body rhythms and otherwise assess the other’s compatibility (e.g., Cadar, 1973, 1975). For example, young Hmong males and females together sing improvised courtship dialogue songs while simultaneously tossing a ball back and forth under the scrutiny of family, friends, and outsiders. Initially the young man invites the girl to play ball, and then begins to sing or entreats her to sing. She must first profess shyness or lack of ability, whereupon he continues to urge her participation, which demands of her considerable strength and ability (see above). Tossing the ball while singing allows the opportunity to demonstrate interest by variations in eye contact and facial expression, as well as displaying the girl’s ability to remain calm in a stressful social situation, and also be entertaining and playful (Catlin, 1982, 1985).⁶

Sometimes a courting couple may interact by playing instruments or moving to music as a substitute for the interaction of actual lovemaking. In antiphonal love dialogues, common in some East and Southeast Asian peoples, the courting couple use repetition and variation, as well as enjambment and pauses, to create suspense, anticipation, and surprise and thereby increase the partner’s involvement and pleasure (Proschan, 1992: 16). In the Medlpa of highland New Guinea, beautifully-adorned young couples sit side by side and sway their bodies toward and away from each other, while moving their heads in parallel, to a background of adults’ singing. Then placing their foreheads together, they turn or roll their heads (which must always be touching) from back to front, and when their cheeks are together, make a bow. During bouts of several repetitions of this activity, each couple creates its own common synchronous rhythm, not necessarily that of the vocal background. They adjust to one another -- the young man initiating and controlling the form of the movement and the young woman the fine variation in speed (Pitcairn and Schleidt, 1976).

Music additionally allows lovers to “say things” that might otherwise be awkward and embarrassing. For example, Hmong and Kmhmu males play love songs on a strummed mouth-played bamboo instrument that conveys all vowels and most consonants, and the young woman may reply on a flute-like instrument of her own (Catlin, 1982, 1985; Proschan, 1992). The lovers may make up a secret language of love, with

metaphoric uses of these musical “words,” to confuse any elder who might be listening.

To find the function of music to be in facilitating courtship, and hence mating, has made sense to evolutionists from Darwin (1871) to the present (e.g., Miller, 2000a, 2000b). Although it is questionable whether music originated in or was driven solely by competitive sexual display (see Brown, 2000; Dissanayake, 2000a, 2000b), it is clear that it may serve to display the charms of either sex to the other and may be used to facilitate a romantic mood.

Establishment and maintenance of social identity through rites of passage

Prominent among this functional category are rites of passage (e.g., Kubik, 1977; Shapiro and Talamantez, 1986; Seeger, 1987; Naroditshaya, 2000) which occur at points of life transitions (e.g., birth, puberty, marriage, death). Although nonhuman animals do not mark rites of passage, the establishment and reiteration of social identity *as status* is important in many species, and these ends are frequently achieved and periodically reaffirmed by ritualized display, as described for humans in the first social function, above. However, human rites of passage go beyond status displays, conferring or recognizing a wide array of cultural as well as biological individual identities such as that of child, adolescent, adult, marriageable or married person, parent, warrior, widow, member of this or that subgroup, and so forth. This important function of ceremonial music deserves separate treatment.

In the eight-day puberty ceremony of Mescalero Apache girls in North America, where each is transformed into the female deity and literally “sung” into womanhood, ritual music not only creates emotional responses during individual segments of a ceremony, but organizes its overall time-frame as well. Pulse, repetitions, change, and silence—elements which in music help to mark the passage of time—are carefully structured and give the ceremony a grace, flexibility, and logic felt by participants and audience alike (Shapiro and Talamantez, 1986: 78). Diverse, imprecisely timed activities of the first day gradually resolve to close coordination between song structure and action, which focuses attention on specific ritual actions and enhances them, and finally to an achievement of timeless transcendent presence. Repetition occurs in the pulses of rattles and jingling cones on dresses, the return of strongly contoured refrains, chant-like verses, and other ritual markers; and the grouping of four formulaic songs marked by glissandi and emissions of ritual smoke by the medicine men. The clear contour of melodies with octave leaps, triadic outlines, and sectional structure provides an analogic design that matches other parts of the ceremony, from the shapes of tipis against the sky to painted geometric designs. On the last morning, with a hand raised to the sun, the singer breaks the overall symmetry of the ceremony, and with dismantling of the ritual tipi, and giving away of food and sweets, the ordinary sense of time and space returns. The music ends, as does the sacred time which was in large part created by the music (Shapiro and Talamantez, 1986).

Relief from anxiety and psychological pain.

Although human groups do not generally perform rituals with the overtly expressed intention of relieving anxiety or of providing a sense of control of threatening outer circumstances, these functions frequently accompany rituals performed for other ostensible purposes, e.g., those meant to heal illness or resolve dissent (Katz, 1982; Kapferer, 1983; Seeger, 1987); to expel or avert evil (e.g., Speck and Broom, 1951/1983; Avorgbedor, 2000); to provide an analogue of escape from oppression (as in the metaphor of

“flight” encoded in Big Drum songs and dances on the small Caribbean island of Carriacou [McDaniel, 1998]; or to mourn the dead (e.g., Goldman, 1964; Feld, 1982; Basso, 1985; Tolbert, 1990; Seremetakis, 1991; Knopoff, 1993). Ritual expression of individual emotion that is usually repressed (e.g., in the Bedouin [Abu-Lughod, 1986]) and Thule Eskimo/Inuit [Freuchen, 1935]), may additionally provide a sort of emotional relief, release, and even refuge during psychologically troubled times (e.g., Greek women [Seremetakis, 1991] and Karelian women [Tolbert, 1990] in ritualized lament—see below). Such functions resemble what in the modern Western psychotherapeutic tradition is called displacement, sublimation, or fantasy. In many ceremonies, participants enter altered psychological states and make contact with a supernatural realm, and one can suggest that this too is in the ultimate service of dealing with uncertainty.⁷

It is in mourning and healing rituals, especially, where musical form seems to be widely used to manage and shape human feeling. These rituals are important because even as they heal individuals or assure the safe passage of the deceased person’s spirit to its ancestral home, the ceremonies provide an institutionalized outlet for individual pain, fear, grief and anger. At the same time, they reassert group loyalties as members fulfill their ritual obligations (Knopoff, 1993: 149; Averill and Nunley, 1993).

Although many analyses of the lament tradition, in Greece and elsewhere, have emphasized the importance of *verbalizing* one’s grief, it is obvious that the verbal narrative is but one component of the total mourning performance. Antiphonic singing of laments is recorded in the Homeric epics, and indeed ritual lamenting occurs not only in Mediterranean cultures but, until recently, in northern Eurasia, highland New Guinea, Africa, China, tribal India, Indonesia, and the Americas (Holst-Warhaft, 1992). Elizabeth Tolbert (1990) has described in detail the Finnish-Karelian lament (*itkuvirsi*), which uses a highly metaphoric language and powerful improvisational manner of performance, reminiscent of a shamanistic trance (Tolbert, 1990). Karelian laments, sung at both weddings and funerals, are performed only by older women in an ecstatic style that is a mixture of weeping, speech, and song. They are not simply or primarily a personal expression of grief but the sacred language of these two important rites of passage—where through marriage a girl leaves her home as well as her girlhood, and through death a person leaves his or her life and loved ones.

On the most general level, the Karelian lament is iconic for a sigh, using a terraced, descending melodic contour (with fluid pitches and irregular rhythm), repeated and endlessly elaborated with microtonal and microrhythmic variations that express, with intensifying emotional involvement, that a successful contact with the other world has been made and that spiritual power is present. This ambiguity and instability of pitch, mode, range, and phrase structure is as necessary to the effectiveness of the lament as predictable pattern and control is to other types of ritual music.

Interestingly, in highland Papua New Guinea, Kaluli women also perform improvisational “melodic-sung-weeping” at funerals, using a descending melodic contour (Feld, 1982: 16). In addition, Kaluli men have also incorporated stylized weeping and sobbing into a ceremony, *gisalo*, that is expressive of feelings of loss and abandonment but which occurs on occasions of marriage, pork distributions, and other formal exchanges where the virtue of reciprocity is implicit and, in the ceremony, emphasized (Feld, 1982, 1984).

A cross-cultural study of the lament would serve as a prototypical illustration of the use of formal-

ization, repetition, exaggeration, and elaboration in order to create a cultural object (here, a stylized vocal performance) from a natural emotional state (weeping in grief). The psychological value of the lament, like other examples of using music to relieve anxiety (e.g., special performances that use songs to heal in the Temiar of peninsular Malaysia [Roseman, 1984, 1991]), probably inheres in assisting the ability to cope (see next paragraph).

Promotion of group cooperation and prosperity.

The first three described social functions of ritual music—display of resources, control and channeling of aggression, and facilitation of courtship—have counterparts in ritualized behaviors of other animals and are congruent with evolutionary models of individual fitness maximization. The fifth function of ritual music—relief from anxiety and psychological pain—seems to have less application to ritualized behavior in animals. Apart from redirecting aggression, the ritualized behaviors of nonhuman animals cannot be said to relieve anxiety, enable repression, or provide the illusion of coping with troubling events—certainly not to the degree that occurs in human rituals.⁸ However, insofar as rituals and their music successfully perform these functions in humans, they promote fitness. Studies show that the debilitating physiological effects of stress are reduced when individuals have a sense of control over uncertain circumstances (Whybrow, 1984; Sapolsky, 1992; Huether et al., 1996), even if this sense of control is illusory.

With the fourth and sixth social functions of ritual music—establishing and maintaining social identity through rites of passage, and group cooperation and prosperity—there are few, if any, convincing parallels with other animals and a more controversial claim for evolutionary benefits.

The current specialized controversy among evolutionary scientists over the level at which selection occurs—gene, individual, or group—need not concern us in this essay, except to say that the widely observed and enduring use of music for group coordination strongly reinforces claims for group selection in humans. Indeed, music may be the first cognitive adaptation that is not completely explainable by individual selection mechanisms (Brown, 2000), and thus is an important arrow in the quiver of advocates of group selection arguments.

Virtually every serious non-biological writer on the function of music names its contribution to the integration, stability, and continuity of the society, culture, or social group that engages in it (e.g., Merriam, 1964; Lomax, 1968; Nettl, 1983), and many of the other functions that such writers mention can be subsumed in this larger category (e.g., enforcing conformity, entertaining, and symbolic representation [Merriam, 1964]). Additionally, music is part of rituals that enculturate the young (e.g., Kubik, 1977; Comaroff, 1985; Seeger, 1987), transfer cultural information (e.g., Vinnicombe, 1976; Guss, 1989; Kaeppler, 1990; Seremetakis, 1991; Knopoff, 1993), and embody community identity (Solomon, 2000), and these too contribute to social integration and prosperity.

In this same category might also be included ceremonies for assuring abundance of food and fertility of women, longevity or survival, and well-being (e.g., Lawal, 1996); for neutralizing (or providing an antidote to) evil (e.g., Keil, 1979); for creating social harmony and dissolving social tension (e.g., Basso, 1985; Sugarman 1988); as well as maintaining egalitarianism (Roseman, 1984) and communal intimacy in the face

of potential or actual anarchy and chaos (Sarno, 1993). One could also mention here also ceremonies that entertain and celebrate, and that engender and express feelings of pleasure and well-being, cheerfulness, and fellowship (e.g., Drewal and Drewal, 1983; Seeger, 1987; Waterman, 1990; Lawal 1996).

In point of fact, one might say that in general *all* rituals serve to maintain the wellbeing of the society and its individuals as they join individuals in common cause. Even ceremonies that incite a group to hate or attack another group promote cohesion and cooperation among the ritual's participants. By "making society work" cooperative rituals are integral, not dispensable (e.g, Seeger, 1987: 131f). A society of uncooperating individuals is not likely to thrive and maintain itself over generations, and music appears to have been one of the indispensable means for instilling and maintaining group cohesion and hence perpetuation.

Music Today

What is usually uncritically considered to be "music," at least in the academy—Western classical music and perhaps jazz—has developed over the past two centuries within an aesthetic or "high art" tradition where music, like art in general, is considered nonfunctional ("for its own sake") and generally listened to with full attention in special settings, or on recordings in the home (see also Martin's and Stockfelt's contributions to this volume). However, although music today is loosed from its original integral structural roles in society, and appears in other respects, described at the beginning of the paper, to be obviously different from music in traditional societies, one can nevertheless detect multiple robust ties to its initial roots.

Music today, for example, is not as conceptually isolate as purists might claim. Words are integral to the "musical" melodic or rhythmic components in genres as diverse as *Sprechstimme* and rap. Nor is our appreciation of music invariably disinterested or detached. At the personal level, even classical music may frequently be moved to—at concerts involuntarily or inconspicuously (with the toes inside one's shoe, one's tongue inside the mouth or one's fingers) or privately at home with more unselfconscious head and body movements. At concerts featuring popular music, such as rock or country and western, toe-tapping, clapping, or head-nodding is expected, and even participative dancing is common. More generally, music today is integrated with life—although frequently serving as background—with Muzak in shops and elevators, and radio or recorded music in our homes or cars.

Music still remains associated with the supernatural in religious activity, and many lovers of music attest to feeling "transformed" by certain musical experience as well as bonded to the emotional associations that these evoke and represent.

Music today steadfastly remains socially important for holidays and other ceremonial observance, both sacred and secular, and it is certainly "essential" to the maintenance of *subcultures* within the larger society—that is, a member of the subculture necessarily "knows the score" of the popular rhythms and styles that define it. In this capacity, music articulates the values that are both tacitly and explicitly expressed by the subculture, and its simultaneous, often commercial, representation as a fad or fashion.

However, music's most important social uses today are, arguably, at the level of the macro-economic: to sway emotions for entertainment and distraction and to condition and persuade people to buy things, since nearly all modern social activities, including music, are designed around the goals of the marketplace

(see Bullerjahn and North and Hargreaves, this volume).

Although it would be difficult today to claim that music is integral to the working of our society in any larger sense, or that it contributes to individual or group prosperity outside the marketplace, many of its earlier functions persist, particularly in popular music. It still allows individuals to show off, and is frequently important in courtship—to set a “mood,” to express one’s sentiments, and to accompany dancing. The sound of music itself can uncannily re-create in memory a time, place, and emotional state, with surprising emotional strength. It still entertains, though we are audience more often than participant.

Music remains integral to rites of passage—as in weddings and funerals—and to nearly any ceremonial occasion. It can still heal, as employed in music therapy or in fundamentalist and charismatic religions. It still “says things that cannot be said in any other way,” and otherwise allows for fantasy, displacement, and sublimation. It still eases labor and tedium, as when we listen to recorded music or sing to ourselves while working or driving.

Music is still able to create social harmony and solidarity, whether in small groups singing songs around a campfire, military recruits marching and chanting in time, or the well-being felt after sharing a musical occasion with others. It still enculturates and transfers cultural information, as is evident in nationalist music, global youth culture, any subculture, as well as in advertising and marketing.

In modern societies, as described, all these functions of music have been influenced by modernity, particularly its individualism, pluralism, secularism, consumerism, media proliferation, and reliance on technology. Yet it is still possible in music to set aside, to some degree, everyday knowledge and experience so that, like those who live in the traditional non-Western societies described above, we can enter an “extraordinary” state, sometimes even feeling transformed. Music everywhere shapes or gives form to feeling, and has multimodal associations with bodily life and with the natural landscape that are beyond the resources of talk. Also, as in the non-Western music traditions mentioned here, we are susceptible to deviations from the expected as well as to confirmation of the expected, to alternation and overlap, as well as to synchronized participation, all of which are iconic for the creation and expression of intercoordination and community where boundaries are collapsed and individuals feel at one—with others or with their deeper selves.

Endnotes

1. Trance states have different purposes in different rituals—for healing (e.g., the Kalahari Kung [Katz, 1982]), managing grief (e.g., the Amazonian Cubeo [Goldman, 1964]), relieving anxiety (e.g., folk trance in Java [Kartomi, 1973]), achieving contact with supernatural beings or a supernatural world (e.g., the Malaysian Temiar [Roseman, 1991]), and for other occasions where “transformation” from one state to another is considered desirable.
2. According to Julian Huxley (1966) “ritualization may be defined ethologically as the adaptive formalization or canalization of emotionally-motivated behaviour, under the . . . pressure of natural selection so as (a) to promote better and more unambiguous signal function, both intra- and inter-specifically; (b) to serve as more efficient stimulators or releasers of more efficient patterns of action in other individuals; (c) to reduce intra-specific danger; and (d) to serve as sexual or social bonding mechanisms.” He defines human ritual as “the adaptive formalization and canalization of motivated human activities so as to secure more effective communicatory (‘signalling’) function, reduction of intra-group damage, or better intra-group bonding.”
3. Behaviors generally require a facilitating environment in order to develop smoothly, but they are inherited, with greater and lesser degrees of lability in expression, as predispositions. They are not (or are rarely) mechanically “determined.” “Ritualization” is a behavioral mechanism. A ritualized behavior has evolved gradually over time through natural selection because individuals who performed it enjoyed comparatively higher survival and reproductive success.
4. Tinbergen (1959) succinctly defined ritualization as “adaptive evolutionary change in the direction of increased efficiency as a signal.”
5. I generally use the terms “ritual,” “ceremony,” and ritual ceremony” interchangeably, referring to human behavior. “Ritualized” and “ritualization” generally refer to behavior of nonhuman animals (although I point out later in the paper that human mother-infant interaction appears to be in part a biologically-evolved ritualized behavior).
6. After marriage, women’s songs of a sensual nature are avoided and replaced by more “functional” songs (lullabies; mowing, sowing, harvesting, and weaving songs; and wedding or mourning songs). Traditional Hmong women were reluctant to sing even in the presence of their infant sons and particularly in front of males, including male relatives, in order that their songs not be interpreted as an “invitation.” Post-menopausal women, however, could sing in the presence of men (Catlin, 1982: 78-80).
7. In this “therapeutic” category also, one might even include rituals that relieve labor and tedium, such as those that assist with or physically coordinate work (e.g., rice planting and harvesting in the Kpelle people of Liberia [Schmidt, 1990], or rice pounding in central Java [Kartomi, 1973: 202]).
8. The chimpanzee male “rain dance” described by Jane Goodall (van Lawick-Goodall, 1975) might be considered a rudimentary instance of the emotional release of individual and perhaps group anxiety in a nonhuman primate during a time of uncertainty.

References

- Abu-Lughod, L. (1986). *Veiled Sentiments: Honor and Poetry in a Bedouin Society*. Berkeley: University of California Press.
- Averill, J. R. and Nunley, E. P. (1993). "Grief as an emotion and as a disease: A social-constructionist perspective." In M. S. Stroebe, W. Stroebe, and R. O. Hansson (eds.) *Handbook of Bereavement: Theory, Research, and Intervention* (pp. 77-90). New York: Cambridge University Press.
- Avorgbedor, D. (2000). "Dee Hoo! Sonic articulations in healing practices of the Anlo-Ewe." *The World of Music* 42:9-24.
- Balikci, A. (1970). *The Netsilik Eskimo*. Garden City, NY: Natural History Press.
- Barrow, J. (1995). *The Artful Universe*. Oxford: Clarendon Press.
- Basso, E. B. (1985). *A Musical View of the Universe: Kalapalo Myth and Ritual Performance*. Philadelphia: University of Pennsylvania Press.
- Becker, J. (2000). "Listening selves and spirit possession." *The World of Music* 42: 25-50.
- Beebe, B. and Lachmann, F. (1994). "Representation and internalization in infancy: Three principles of salience." *Psychoanalytic Psychology* 11: 127-165.
- Blacking, J. (1982). "The structure of musical discourse: The problem of the song text." *Yearbook for Traditional Music* 14: 15-24.
- Brown, S. (2000). "Evolutionary models of music: From sexual selection to group selection." In F. Tonneau and N. S. Thompson (eds.), *Perspectives in Ethology* 13 (pp. 231-281). New York: Plenum.
- Cadar, U. H. (1973). "The role of Kulintang music in Maranao society." *Ethnomusicology* 17: 234- 249.
- (1975). "The role of Kulintang in Maranao society." *Selected Reports in Ethnomusicology* 2: 49-62.
- Catlin, A. R. (1982). "Speech surrogate systems of the Hmong: From singing voices to talking reeds." In B. T. Downing and D. P. Olney (eds.), *The Hmong in the West: Observations and Reports* (pp. 170-197). Minneapolis: Southeast Asian Refugee Studies Project, Center for Urban and Regional Affairs, University of Minnesota.
- (1985). "Harmonizing the generations in Hmong musical performance." *Selected Reports in Ethnomusicology* 6: 83-97.
- (1992). "*Homo Cantens*: Why Hmong sing during interactive courtship rituals." *Selected Reports in Ethnomusicology* 9: 43-60.
- Comaroff, J. (1985). *Body of Power Spirit of Resistance: The Culture and History of a South African People*. Chicago: University of Chicago Press.
- Darwin, C. (1871). *The Descent of Man and Selection in Relation to Sex*. London: John Murray.
- Dissanayake, E. (1979). "An ethological view of ritual and art in human evolutionary history." *Leonardo* 7: 211-218.
- (1988). *What Is Art For?* Seattle: University of Washington Press.
- (1992). *Homo Aestheticus: Where Art Comes From and Why*. New York: Free Press (reprinted 1995, Seattle: University of Washington Press).
- (1999). "Antecedents of musical meaning in the mother-infant dyad." In B. Cooke and F. Turner (eds.)

- Biopoetics: Evolutionary Explorations in the Arts* (pp. 367-397). New York: Paragon House.
- (2000a). "Antecedents of the temporal arts in early mother-infant interaction." in N. Wallin, B. Merker, and S. Brown (eds.) *The Origins of Music* (pp. 389-410). Cambridge, MA: MIT Press.
- (2000b). *Art and Intimacy: How the Arts Began*. Seattle: University of Washington Press.
- Drewal, H. J. and Drewal, M. T. (1983). *Gèlèdè: Art and Female Power Among the Yoruba*. Bloomington: Indiana University Press.
- Eibl-Eibesfeldt, I. (1971). *Love and Hate*. New York: Holt Rinehart and Winston.
- (1989). *Human Ethology*. Hawthorne NY: Aldine de Gruyter.
- Ekman, P., Levenson, R. W., and Friesen, W. V. (1983). "Autonomic nervous system activity distinguishes between emotions." *Science* 221: 1208-10.
- Ellsworth, P. (1994). "Some reasons to expect universal antecedents of emotion." In P. Ekman and R. J. Davidson (eds.) *The Nature of Emotion: Fundamental Questions* (pp. 150-154). New York: Oxford University Press.
- Feld, S. (1982). *Sound and Sentiment: Birds, Weeping, Poetics and Song in Kaluli Expression*. Philadelphia: University of Pennsylvania Press.
- (1984). "Sound structure as social structure." *Ethnomusicology* 28: 383-409.
- Freuchen, P. (1935). *Arctic Adventure*. New York: Farrar and Rinehart.
- Fubini, E. (1990). *The History of Music Aesthetics*. London: Macmillan.
- Gianino, A. and Tronick, E. Z. (1988). "The mutual regulation model: The infant's self- and interactive regulation and coping and defensive capacities." In T. Field, P McCabe, and N. Schneiderman (eds.) *Stress and Coping* (pp. 47-68). Hillsdale, NJ: Erlbaum.
- Goldman, I. (1964). "The structure of ritual in the northwest Amazon." In R. A. Manners (ed.) *Process and Pattern in Culture* (pp. 111-122). Chicago: Aldine.
- Goodman, L. J. (1992). "Aspects of spiritual and political power in chiefs' songs of the Makah Indians." *The World of Music* 34: 23-42.
- Goody, J. (1961). "Religion and ritual: The definitional problem." *British Journal of Sociology* 12: 142-164.
- Griffiths, P. E. 1997. *What Emotions Really Are: The Problem of Psychological Categories*. Chicago: University of Chicago Press.
- Guss, D. M. (1989). *To Weave and Sing: Art, Symbol and Narrative in the South American Rain Forest*. Berkeley: University of California Press.
- Herdt, G. H. "Fetish and fantasy in Sambia initiation." In G. H. Herdt (ed.) *Rituals of Manhood: Male Initiation in Papua New Guinea* (pp. 44-98). Berkeley and Los Angeles: University of California Press.
- Hoebel, E. A. (1968). *The Law of Primitive Man*. New York: Atheneum.
- Holst-Warhaft, G. (1992). *Dangerous Voices: Women's Laments and Greek Literature*. London: Routledge.
- Huether, G., Doering, S., Ruether, U., and Ruether, E. (1996). "Psychic stress and neuronal plasticity. An expanded model of the stress reaction processes as basis for the understanding of adaptive processes in the central nervous system." *Zeitschrift für Psychosomatische Medizin und Psychoanalyse* 42: 107-127.
- Huxley, J. (1914). "The courtship habits of the Great Crested Grebe (*Podiceps cristatus*) together with a dis-

- cussion of the evolution of courtship in birds." *Journal of the Linnean Society of London, Zoology* 53: 253-292.
- (1966). Introduction. In "A Discussion on Ritualization of Behaviour in Animals and Man. Organized by Sir Julian Huxley." *Philosophical Transactions of the Royal Society of London, Series B. Biological Sciences* 772: 249-271.
- Jourdain, R. (1997). *Music, the Brain, and Ecstasy: How Music Captures Our Imagination*. New York: Morrow.
- Kaeppler, A. (1990). "The production and reproduction of social and cultural values in the compositions of Queen Sálote of Tonga." In M. Herndon and S. Ziegler (eds.) *Music, Gender, and Culture* (pp. 191-219). Wilhelmshaven: Florian Noetzel.
- Kapferer, B. (1983). *A Celebration of Demons: Exorcism and the Aesthetics of Healing in Sri Lanka*. Bloomington: Indiana University Press.
- Kartomi, M. (1973). "Music and trance in central Java." *Ethnomusicology* 17: 163-208.
- Katz, R. (1982). *Boiling Energy: Community Healing Among the Kalahari Kung*. Cambridge MA: Harvard University Press.
- Keil, C. (1979). *Tiv Song*. Chicago: University of Chicago Press.
- Knopoff, S. (1993). "Yuta Manikay: Juxtaposition of ancestral and contemporary elements in the performance of Yolngu clan songs." *Yearbook for Traditional Music* 24: 138-153.
- Kubik, G. (1977). "Patterns of body movement in the music of boys' initiation in south-east Angola." In J. Blacking (ed.), *The Anthropology of the Body* (pp. 253-274). New York: Academic Press.
- Lawal, B. (1996). *The Gèlèdè Spectacle: Art, Gender, and Social Harmony in an African Culture*. Seattle: University of Washington Press.
- Lomax, A. (1968). *Folk Song Style and Culture*. Washington, D.C.: American Association for the Advancement of Science Publication no. 88.
- McDaniel, L. (1998). *The Big Drum Ritual of Carriacou: Praisesongs in Rememory of Flight*. Gainesville: University Press of Florida.
- McNeill, W. H. (1995). *Keeping Together in Time: Dance and Drill in Human History*. Cambridge MA: Harvard University Press.
- Merriam, A. (1964). *The Anthropology of Music*. Evanston, IL: Northwestern University Press.
- Meurant, G. (1995). "Aesthetic." In G. Meurant and R. F. Thompson (eds.) *Mbuti Design: Paintings by Pygmy Women of the Ituri Forest* (pp. 127-183). London: Thames and Hudson.
- Meyer, L. B. (1956). *Emotion and Meaning in Music*. Chicago: Phoenix.
- Miall, D. and Dissanayake, E. (2003). "The poetics of babytalk." *Human Nature* 14:337-364.
- Miller, G. (2000a). "Evolution of human music through sexual selection." In N. L. Wallin, B. Merker, and S. Brown (eds.) *The Origins of Music* (pp. 329-360). Cambridge, MA: MIT Press.
- (2000b). *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature*. New York: Doubleday.
- Morris, D. (1957). "'Typical intensity' and its relation to the problem of ritualization." *Behaviour* 11: 1-2.
- Naroditskaya, I. (2000). "Azerbaijani female musicians: Women's voices defying and defining the cul-

- ture." *Ethnomusicology* 44: 234-256.
- Nettl, B. (1983). *The Study of Ethnomusicology: Twenty-nine Issues and Concepts*. Urbana; The University of Illinois Press.
- Norton, B. (2000). "Vietnamese mediumship rituals: The musical construction of the spirits." *The World of Music* 42: 75-97.
- Pitcairn, T. K. and Schleidt, M. (1976). "Dance and decision: An analysis of a courtship dance of the Medlpa, New Guinea." *Behaviour* 58: 298-316.
- Proschan, F. (1992). "Poetic parallelism in Kmhmu verbal arts: From texts to performances." *Selected Reports in Ethnomusicology* 9: 1-31.
- Racy, A. J. (2000). "The many faces of improvisation": The Arab Taqasim as a musical symbol." *Ethnomusicology* 44: 65-96.
- Radcliffe-Brown, A. R. (1948). *The Andaman Islanders*. Glencoe, IL: The Free Press. Rappaport, R. A. (1967). *Pigs for the Ancestors: Ritual in the Ecology of a New Guinea People*. New Haven: Yale University Press.
- Roseman, M. (1984). "The social structuring of sound: The Temiar of peninsular Malaysia." *Ethnomusicology* 28: 411-445.
- (1991). *Healing Sounds from the Malaysian Rainforest: Temiar Music and Medicine*. Berkeley and Los Angeles: University of California Press.
- Sarno, L. (1993). *Song From the Forest: My Life Among the Ba-Benjellé Pygmies*. New York: Houghton Mifflin.
- Sapolsky, R. M. (1992). "Neuroendocrinology of the stress response." In J. B. Becker, S. M. Breedlove, and D. Crews (eds.) *Behavioral Endocrinology* (pp. 287-324). Cambridge, MA: MIT Press.
- Schmidt, C. (1990). "Group expression and performance among Kpelle women's associations of Liberia." In M. Herndon and S. Ziegler (eds.) *Music, Gender, and Culture* (pp. 131-142). Wilhelmshaven: Florian Noetzel.
- Seeger, A. (1987). *Why Suyá Sing: A Musical Anthropology of an Amazonian People*. Cambridge: Cambridge University Press.
- Seremetakis, C. N. (1991). *The Last Word: Women, Death, and Divination in Inner Mani*. Chicago: University of Chicago Press.
- Shapiro, A. D. and I. Talamantez. (1986). "The Mescalero Apache girls' puberty ceremony: The role of music in structuring ritual time." *Yearbook for Traditional Music* 18: 77-90.
- Smith, W. J. (1977). *The Behavior of Communicating: An Evolutionary Approach*. Cambridge MA: Harvard University Press.
- Solomon, T. (2000) "Dueling landscapes: Singing places and identities in highland Bolivia." *Ethnomusicology* 44: 257-280.
- Speck, F. G. and Broom, L. (1983). *Cherokee Dance and Drama*. Norman: University of Oklahoma Press.
- Stern, D. (1995). *The Motherhood Consellation: A Unified View of Parent-Infant Psychotherapy*. New York: Basic Books.
- Sugarman, J. C. (1988). "Making *muabet*: The social basis of singing among Prespa Albanian men." *Selected Reports in Ethnomusicology* 7: 1-42.

- Thompson, R. F. (1995). "Impulse and repose: the art of Ituri women." In G. Meurant and R. F. Thompson (eds.) *Mbuti Design: Paintings by Pygmy Women of the Ituri Forest* (pp. 185-214). London: Thames and Hudson.
- Thornhill, R. (1999). "Darwinian aesthetics." in C. Crawford and D. L. Krebs (eds.) *Handbook of Evolutionary Psychology: Ideas, Issues, and Applications* (pp. 543-572). Mahwah, NJ: Erlbaum.
- Tinbergen, N. (1952). "Derived activities: Their causation, biological significance, origin, and emancipation during evolution." *Quarterly Review of Biology* 27: 1-32.
- 1959. "Comparative studies of the behaviour of gulls (Laridae): A progress report." *Behaviour* 15: 1-70.
- Tolbert, E. (1990). "Women cry with words: Symbolization of affect in the Karelian lament." *Yearbook for Traditional Music* 22: 80-105.
- van Lawick-Goodall, J. (1975). "The chimpanzee." In V. Goodall (ed.) *The Quest for Man* (pp. 131-69). London: Phaidon.
- Vinnicombe, P. (1976). *People of the Eland*. Pietermaritzburg: University of Natal Press.
- Watanabe, J. M. and B. B. Smuts. (1999). "Explaining ritual without explaining it away: Trust, truth, and the evolution of cooperation in Roy A. Rappaport's 'The Obvious Aspects of Ritual.'" *American Anthropologist* 101: 98-112.
- Waterman, C. A. (1990). *Jujú: A Social History and Ethnography of an African Popular Music*. Chicago: University of Chicago Press.
- Watson, D. and L. A. Clark. (1994). "The vicissitudes of mood: A schematic model." In P. Ekman and R. J. Davidson (eds.) *The Nature of Emotion: Fundamental Questions* (pp. 400-405). New York: Oxford University Press.
- Whybrow, P. (1984). "Contributions for neuroendocrinology." in K. Scherer and P. Ekman (eds.) *Approaches to Emotion* (pp. 59-72). Hillsdale, NJ: Erlbaum.
- Willis, L. (1989). "Uli painting and the Igbo world view." *African Arts* 23: 62-67.