

# Chapter 10

## Becoming Intellectually Fearless

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*In order to be effective, music educators must establish and maintain contact with ideas and people from other disciplines.*  
(MayDay Group 1997, pp. xxxi–xxxvii, this volume)

Music education is an important segment of the larger picture of education. And education is only a part, albeit fundamental and necessary, of the larger sociocultural and sociopolitical realities of contemporary life. To navigate the exigencies of today's world, locally and globally, a new type of individual is required in the schools. Now, more than ever, we need new “renaissance” men and women. The present analysis examines implications of a broadened preparation for entering the music classroom, a cross-disciplinary approach to education.

The complexity of contemporary life demands an effective understanding of several disciplines; this increases knowledge that can free one from ideological narrowness. By attempting to view reality from multiple perspectives, one can see the larger picture, the connective tissue, and the nexus of seemingly disparate parts. Although each academic discipline has its viewpoints, and even ideologies,<sup>1</sup> there is an advantage to studying various disciplines with the purpose of integrating the data. The chances of gaining insights to the human condition are thus significantly expanded, and, when carried into the classroom, serve to intensify the educational process. It is to these larger questions that integration is necessary. To paraphrase American physicist Murray Gell-Mann (2003):

One can study many fields separately: philosophy, any of the sciences, sociology, anthropology, economics, etc., but the answers to the large questions cannot be gotten by any single field. All must be studied together in a cross-disciplinary fashion to produce answers. The sum is truly greater than the parts.

The urgency to expand one's outlook is especially pertinent today. The world could not be more confusing than at this juncture at the beginning of the twenty-first century. Only by understanding the crosscurrents of fact, distortions, and vested

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interests can students be led to become part of future solutions to our present uncertainties about truth and reality. It is chiefly on the young, before they become dulled to the wiles of hidden agendas and deceptions, that we must place responsibility to create a better world for themselves and the human species.

## Unity of Knowledge

Yes, the world and the global human community appear to be a chaotic mess. However, underlying all existence—animate and inanimate—are some fundamental rules of organization. I do not wish to suggest that reductionism<sup>2</sup> is a valid analytical approach, but one can reasonably make the assumption that if we are of the same basic substance, stars and human beings alike, a basic set of laws should govern all existence. Richard Feynman, another American physicist, makes this point:

The internal machinery of life, the chemistry of the parts, is something beautiful. And it turns out that all life is interconnected with all other life. . . . [I]t has been discovered that all the world is made of the same atoms, that the stars are of the same stuff as ourselves (1998, 11–12).

Biologist and naturalist Edward O. Wilson agrees, but insists that science be utilized to unite all knowledge.

The greatest enterprise of the mind has always been and always will be the attempted linkage of the sciences and the humanities. The ongoing fragmentation of knowledge and resulting chaos in philosophy are not reflections of the real world but artifacts of scholarship. The propositions of the original Enlightenment are increasingly favored by objective evidence, especially from the natural sciences (1998, 8).

Parallel to Wilson's is author and medical doctor Leonard Shlain's view that ultimately the artist and the physicist both define the nature of reality (1993, 15–16). Tyler Volk<sup>3</sup> (1994) suggests that certain underlying patterns exist at both macro- and microlevels, and when a pattern is "so wide-flung that it appears throughout the spectrum of reality," then we are dealing with what he calls "metapatterns" that find their existence "in clouds, rivers, and planets; in cells, organisms, and ecosystems; in art, architecture, and politics" (viii–ix).

There are those who believe that life has an emergent-properties aspect that alters future form, and ultimately not only seeks unity but greater complexity. Ken Wilber, author on psychology, ecology, and mysticism, believes in a holonic<sup>4</sup> world that strives for greater complexity. He writes that material processes "tend under their own power to escape chaos by transforming it into a higher and more structured order—commonly called 'order out of chaos'" (1995, 13–14).

Willis Harman is considered the *father* of the new age movement and a meta-physical futurist. He sees a twentieth-first century where more of the subjective experience in the human community will begin to contribute to the fund of knowledge, to the primary problem of "how we know." He criticizes modern society for rejecting any knowledge beyond reductionistic science, as a mistake that prevents the fullness of understanding:

[T]he mistake of modern society has been to assume that, ultimately, reductionistic “scientific” causes should explain everything. One should not expect reductionistic scientific causality to comprise an adequate worldview—ever. The context of reductionistic science is the desire to gain control through manipulation of the physical environment. . . . Our problems arise when we change the context and attempt to elevate that kind of science to the level of a worldview. That is when we generate conflicts like “free will versus determinism” and “science versus religion.”. . . The question of whether we could have a more adequate science with a different epistemology remains” (1998, 112).

Morris Berman, humanist cultural critic, decries the Cartesian divide that he believes is still very much present in the science of Western culture. He pleads for a “reenchantment” of the world through a holistic and unified consciousness, and envisions a future where fact and value are once again united (1981, 277 ff.). Despite differences in approach, experts from a variety of disciplines obviously share a belief in the unity of existence. The usual lines of demarcation are illusory; the boundaries of knowledge set up by specialists in the various fields are suppositious. Given the usual restrictions on academic geographies, the student-scholar is apt to accept the fabricated walls of disciplinary separation as inviolable and untouchable.

An academic discipline is a way of both defining and protecting one’s terrain. One fruitful path permitting transcendence of these seemingly rigid borders is to find connections, parallels, and harmony in all experience, both cognitive-academic and personal-subjective. Music depends on numerous disciplines and extra-musical cognitive demands to fully understand its place and function in human culture: philosophy and aesthetics, acoustics, sociology, psychology, history and its contexts, and neurology, to name a few. Music in education adds to this complexity. That music may be a bridge to different realms of human experience suggests the importance of an approach to music and music education that is broad and deep, fed by the knowledge that the educator obtains by studying a wide spectrum of disciplines in a unified and cohesive manner.

## Comparative Processes

It is a truism that education exists in a boiling cauldron of social argument.<sup>5</sup> Music education is deeply involved in the bouillabaisse of contemporary disputations. The music education professional has some options from which to choose. One is for teachers to make sense of a society beset by antagonisms and enmity by broadening their intellectual backgrounds to the greatest extent possible. The other is to avoid engagement and to hide from the vicissitudes of life through isolation, by finding the most protected habitat possible, either physical or psychological. The former is possible and desirable; the latter is a fool’s errand.

The very essence of being a teacher should be to be intellectually fearless. For the music educator, a cloistered existence is anathema to the vistas that educators need to bring into the classroom through critical examination. Unless students are connected to the larger world outside the classroom, their studies become

abstractions that have no apparent application. It becomes imperative for the teacher-guide to develop a reliable compass lest the journey be confusing, boring, fruitless, and empty of meaning for students as well: purposeful searching is preferable to aimless wandering. A journey beset by confusion is less fruitful than one enlivened by serendipity.

I describe four paths in particular to enhance such purposeful searching. These are detailed as follows: pattern, time and space, biology and culture, and dualities. By examining data from these viewpoints, relationships can be seen that may otherwise be obscured.

## Pattern

Look for pattern. Volk, previously referred to, finds metapatterns in all existence, both physical and organic. He writes of spheres, sheets and tubes, borders, binaries, centers, and other organizing principles.<sup>6</sup> Volk observes a synergy of things and relations.

People, like animals, traverse wide stretches of landscape between points of resource concentrations... People may even make diagrams of such networks of nodes and paths. The aboriginal artists of Australia have refined such diagrams to a high art, as well as a sacred knowing. Their networks of concentric roundels and connecting tubes, often much like the geometric patterns of Fuller's geodesic domes, are road maps for both the physical and metaphysical. In their metaphysical aspects the roundels are dreamings, great events in the mythic past, where, for instance, Wichetty grubs emerged. Both levels, the physical and the mythic, are served by the same pattern: circles linked by lines (1994, 39–40).

“Reality” is a mental construct derived from the perception of physical phenomena by an individual mind. It is fair to say that human reality, while based in the physical nature of the brain, is a perceptual phenomenon designed by subjective contributions of both inner and outer worlds.

Shlain, also referred to earlier, sees physicists and artists, seeming opposites, as occupying the same mental universe in their search for truth. He asserts that,

[d]espite each discipline's similar charge, there is in the artist's vision a peculiar prescience that precedes the physicist's equations. Artists have mysteriously incorporated into their works features of a physical description of the world that science later discovers (1993, 18).

He shows distinct connections between artists (including composers as well) and physicists and how their parallel ideas interact on the same fundamental truths, based on pattern.

Borders are one of Volk's metapatterns (1994, Chapter 3). Borders exist for both physical reality and mental constructions. The cells of our bodies have well-defined borders to ward off foreign bodies. Volk states that “[b]orders function as bulwarks against forces of disruption” (1994, 52). However, even those are occasionally penetrated, as with disease.

Metapatterns can furnish another way to examine what is directly before our eyes and ears. Applying the principle of borders to music, we speak of numerous aspects of music but seldom connect music to something larger, something intrinsic to all phenomena. At least one example can show, in my view, that borders are an essential part of everything human beings construct or express, albeit differently according to culture. A comparison will illustrate.

In the first instance, consider the theme of the fourth movement of Beethoven's *Symphony Number 9*.



The perception of this excerpt relies on musical information already known, a necessary prelude to defining mental borders.

The first border, a tonal construction, is set by the first measure designating an aural fence around D Major, which is confirmed on the ninth beat. A major key in Western musical conventions implies a complex of tones that have built-in tensions, particularly between the Tonic and the Dominant. Although we might accept a modern use of distantly related keys to be suddenly thrust into the musical fabric, in Beethoven's time that would not have been a normal part of the progressions. Thus, there is a mental border around the tones that comprise D major, and we would take a G# major chord as a jarring intrusion in a D major passage in this period of music.

The second border, emphasizing the temporal to reinforce the tonal, is set at the end of measure 4 when the appoggiatura extended by a half beat slows the progression of the melody ending for a moment (a partial border in the overall scheme) on E, the fifth of the dominant chord. The next four measures end in the same rhythmic way, but the emphasis is returned to the Tonic, a point of rest. We find borders in all aspects of music in this fashion; otherwise, aural phenomena become an indecipherable stream of sound.

Borders and their patterns exist in other dimensions, as for example in the social, ethnic, religious, gender, and more elusive psychological areas. Frequently these areas open seemingly impervious borders into porous boundaries that interpenetrate and coalesce with other areas. To illustrate, we can take the two examples above—the Classical tradition of Beethoven and classical music of North India—and compare their underlying religious and cultural structures, that is, their cosmogonies.<sup>7</sup> Christianity lies at the base of the Western belief system, while Indian ideation is based on long-standing tenets of Hinduism. Although both systems are quite complex, for our purposes of comparison, we can look mainly at the view of an afterlife and its extensions into social and cultural mores. We can only lay down some generalities in this brief exploration.

## *The Christian Belief System*

Christianity, stemming from Judaism, is a monotheistic and historical religion, that is, there is one God and at a particular time he created the world and all that is in it. Genesis lays out the beginnings in precise order. The future, to many adherents, is planned in the Book of Revelations. The Christian view also espouses the idea of a single temporal existence that transcends bodily reality to an eternal life of the spirit or soul granted by the grace of God. Even with a highly subjective practice of the faith, much can be objectified to achieve the ultimate and desirable state of existence. To demonstrate, one achieves immortality by practices in the here and now: periodic church attendance, good works, administering to the poor, tithing, prayer, love of one's neighbors (the Golden Rule), and other sacraments such as baptism and communion (celebration of the Lord's supper).

Christianity became infused with Greek philosophy through Platonic and Aristotelian thought, incorporated in Alexandria, Egypt, once a great center of learning, by St. Clement and Origen in the first two Christian centuries. Particularly with the approach of Aristotle in basing interpretation of phenomena on observation, the Enlightenment became inevitable, in which objectivism—an emphasis on external reality—and scientific process became paramount. After Newton (1643–1727), reality was expressed largely in quantities rather than in subjective terms.

By the onset of the Western Classical period, such objectivist ideas were perfectly compatible with the musical expression of the time, defined, explicit, and confirmed in performance by certain parameters. Let me describe a contemporary version of this expression, strongly exhibiting a series of events built on the Western concept of linear time.<sup>8</sup>

The concert begins at 8 p.m.; the lights dim and the concertmaster tunes; the lights dim further and the conductor appears to applause to which he/she bows in acknowledgement, while simultaneously the orchestra stands to accept plaudits for their coming performance; the conductor then turns and begins the piece; there are specific numbers of sections with brief pauses following the decidedly final chords of each section; and the final movement ends with a definite cutoff by the conductor to which the audience responds with applause and occasional verbal exclamations. The conductor accepts the applause and acknowledges specific members of the orchestra as well as the orchestra as a whole and, in the case of Beethoven's Ninth Symphony, the soloists who play a major role are given their due; the chorus is saluted, whose conductor is also brought to the stage. A high number of returns to the stage of the conductor and soloists signal a successful performance.

This all-too familiar pattern has social implications as well. Dress and demeanor are part of the expected behavior of the audience, a covert reference to Christian mores that stem from the early Puritan founding of the country. Silence during the playing of the music is demanded, and should someone violate that parameter the shushing begins immediately. The intermissions are *de rigueur* with accompanying champagne, wines, coffee, etc., and the usual chitter-chatter. Although dress requirements change with place and event, more formal attire is expected than that worn to a coffee shop. These various facets of a Western concert are so ingrained as to

escape attention of even the most astute observer, but they are all part of the patterns of culture and social mores.

The music is reflective of a highly structured social pattern. The Classical symphony is a four-movement work. Its strongly thematic form is precise in that the sonata allegro, usually of the first movement, contains an exposition, a development, and a recapitulation. Key relationships are carefully designed, as is the temporal organization of each movement. In a symphony in C major, one can expect a circle of related keys to play a prominent role, for example, keys of the dominant, the relative minor, and the subdominant, and each of these provides the center for their related keys. The first movement is frequently in duple meter and fast, the second movement is slow and possibly in duple meter also, while the third movement is a triple meter minuet or its derivations in moderate tempo, and the fourth movement concludes at a more rapid pace probably in duple meter. These are the broad outlines and all reflect a carefully drawn plan.

Beethoven's Ninth Symphony began to break that mold significantly by adding a chorus to the symphony and making other harmonic and temporal changes from previously established forms. In short, it crossed, erased, and clouded delimiting borders in favor of porous boundaries that evolved in importantly new and creative directions.

## *Hindu Beliefs*

The Hindu world, in contrast, is cyclic—created, preserved, and dissolved—and recreated to renew the cycle. Hindu conceptions have devised quite complex cycles within cycles, each with a specific sense of temporal lengths that follow certain ratios, as in the case of the maha yuga cycle (4,320,000 human years) divided according to a ratio of 4:3:2:1. Likewise, reincarnation until liberated from rebirth preserves the cyclic process in the individual. Christians rely on absolution of transgressions; for the Hindu, karma—the law of cause and effect—forms the principal rule of behavior. Each person determines their destiny through their actions. The soul reincarnates through several cycles until all the karmas have been resolved.

Hinduism is inclusive. Christianity is exclusive, its rejection of other beliefs perfectly highlighted in the Japanese expulsion of missionary fathers in 1587.<sup>9</sup> Hinduism is only nominally monotheistic, believing in a Supreme Being and Transcendent Absolute, while simultaneously including communion with devas and Gods (the Vedic gods number in the tens, Brahma is the god of creation accompanied by his consort Saraswathi; Lord Vishnu, whose navel produced Brahma, and his consort Lakshmi; and Siva [Shiva] the god of destruction are just a few of the Hindu panoply). While Christians overtly express their relationship through prayer, individually and collectively, silent and proclaimed, Hindu practice relies on quiet meditation as a primary means of communing with the divine.

Examine now the performance of an Indian ensemble. In comparison to the Western concert, borders are less easily defined. First, there is no discernable border

(think of the defined frame of a painting) where lighting indicates a beginning of a concert and final acknowledgement of applause signals its end. In the Indian concert, the sitarist and accompanying musicians are seemingly tuning their instruments, but often there is not a break where they stop, wait for the audience to quiet and then begin their first piece. Since the art is improvisational, the performance may go on for an exceptionally long time. There finally is closure, but, to an outsider, the cues (borders) along the way are less obvious. Rather than a precise number of players in the Western orchestra, several of whom play the same part within an explicit orchestration of instruments and an accurate rendering of a score of which each player has a highly detailed notated part, the Indian counterpart has generally three players, each of whom plays without a written notation, and improvises the musical expression based on a preexistent skeleton called the raga. The ragas, unlike Western scales, are not absolute in pitch, and microtonal fluctuations form an important part of the individual artist's expression. The performance takes place in a less formal setting and comes out of a belief system predicated on a quite different cosmogony. The audience participates by tapping out the rhythmic beats. Hindu belief suggests that life is transient (Indian) and permanence (Western) is illusory.

The raga, the melodic mode of Indian music, is tied to seasons and times of day. Its fundamental source is nature, both cosmic and microcosmic. The form of a performance is expressed through an increasingly faster rendition, beginning with the *alaap*, a meditative and creative expression of the raga characterized by simplicity. Its purpose is to evoke feelings, both human and spiritual. Following the *alaap* is the *gat* where the temporal cycles—*tala*—of complex asymmetrical units begin to unfold through the *tabla*, a pair of small drums. Underlying the improvisations of the sitar and *tabla*, the *tambura* furnishes a drone with the fundamental tone of the universe. The cyclic nature of Hindu belief is reflected in the rhythmic cycles of the *tala*. Transiency and unpredictability of life is expressed through improvisation as a fundamental organizing principle; the raga is the general outline of the music just as our lives revolve around basic human psychophysical capabilities but do not determine contextual events.

While these explications of Christianity and Hinduism are necessarily brief and sketchy, several of the qualities show a distinctly different approach to life and how those beliefs are reflected in the music. These are the kinds of patterns to be observed to enrich an otherwise narrow focus on music alone. They are found in all physical and mental constructions. Patterns in personal and social spheres are echoed as well in every other aspect of human experience. These mental demarcations that we create are better conceived as being in a porous, creative, and holistic relationship. Thus the borders—that is, the boundaries, between teacher and student, between student and student, and between student and subject matter—are all to be understood and handled judiciously according to the needs of the individual and the educational process. Exploratory teachers and students are self-didactic and influence each other to the extent of their interaction. Additionally, the effective teacher will be alert to utilizing data from a multiplicity of sources that bear on education, generally and specifically.



## Time and Space

*To think of time—of all that retrospection!  
To think of to-day, and the ages continued henceforward!*

*Have you guess'd you yourself would not continue?  
Have you dreaded these earth-beetles?  
Have you fear'd the future would be nothing to you?*

Walt Whitman (1900, 197)

Walt Whitman points to an important psychological state, a feature of every psyche, that time is on everyone's mind. An exhaustive explication of time, and its companion, space, is not needed to realize how much our perceptions and interpretations of these dimensions affect our judgments. Our ontological awareness is permeated by thoughts of time and sense of space both in the routines of our daily lives and in our philosophical groundings. Moreover, one can readily see that these aspects of reality cannot be separated. To illustrate, all sonic activity takes place within spatial dimensions, significantly affecting our interpretation of events. Most famous in twentieth century science and philosophy is Einstein's insight showing that two events observed from different locations result in two interpretations. Truly, time is of the essence. From the Bhagavad-Gita, the Old Testament, Greek philosophers, and early Christianity, the nature of time has been variously interpreted.<sup>10</sup> Space, what can also be called place, has had equally mixed views, particularly those bound up with a place beyond place, as some location of the hereafter. Time and space were interpreted by Newton as fixed points on a geometric line that exists without reference to anything external. Newton's mechanical universe and his "arrow of time" were upset by Einstein's theory of relativity. Within decades, Einstein's ideas were challenged by other physicists working in string theory, suggesting that Einstein's proposed four dimensions now number at least ten and that time travel is theoretically possible.<sup>11</sup>

The same re-definition of space and time occurred in the arts, changing as views of reality changed. Cultural differences also determine interpretations. For example, a comparison of Asian and Western space is illustrative.

Space to a Westerner was an abstract nothingness; it did not affect the objects moving about in it. Because space was the very essence of null, nothing could ever come forth out of it. Western artists before the 1880s worked diligently to fill up all the empty space on a canvas with representations of "things," including sky, water, mountains, and figures. Empty space was taboo to a Western artist because art was supposed to be a "something," and space according to Euclid was a "nothing."

In the predominant Eastern philosophies, however, empty space was the void. In Zen teachings, this plenum contained within it the pregnant possibility of everything. From this invisible cornucopia issued forth all that was substance. The large empty spaces contained within an Asian work of art are a representation of this idea. In contrast to a homogeneous Euclidean space that *never* changes, the Eastern view suggests that space evolves. In the one, space is dead and inert, in the other it has organic characteristics (Shlain 1993, 160).

Music has its changing definition of time as well. Gregorian chant was a free-floating form dependent on textual emphases producing irregular stresses. More

metrical arrangements followed in the medieval period. Up to the twentieth century, Western time was based on the division of a pulse and all durations were directly related to a single unit. Sub-Saharan African music, by contrast, adds smaller units to create a sense of continuity among the parts. Westerners find it difficult to determine patterns from this polymetric music; they do not hear a downbeat in the Western sense. During the twentieth century, numerous approaches were taken—from aleatoric processes to highly serialized units. Traditional Japanese *shakuhachi*<sup>12</sup> music belied the more regular pulses of *gagaku*,<sup>13</sup> although even there, certain beats are stretched on occasion with the whole of the piece displayed in a tripartite form in which each section is played at a faster tempo.

Different cultures define time and temporal events in very different ways. Anthropologist Edward T. Hall speaks of monochronic time (one event at a time in consecutive order) and polychronic time (much simultaneous activity) and suggests that misunderstandings developed between the Germans and the French because of their differing interpretations of time (1983, Chapter 3). Time and space are so fundamental to the human experience that we often fail to take note of their significance. It behooves the novice music educator to become intimately acquainted with how each has been viewed in historical dimensions as well as across disciplines and cultures.

On a practical level, when the music educator is alert to acoustical space and its effect on time, numerous problems can be solved. There is a principle that applies to all music. Understanding, for example, the spaces in which Renaissance composers like Palestrina and Sweelinck were originally performed enhances the interpretative sensitivities required to perform that music today. With modern technology, however, space is somewhat obliterated as a broad acoustic property. Simultaneous performance through broadcast and digital means is now available to produce a worldwide concert to which the total population has access.

Time, on a personal level, is a complex assortment of interpretations according to individual dispositions: how old we are as time passes over the years; time spent in worthwhile endeavors versus wasted time; and time as experienced in listening to music. Only when the music educator more fully understands the role these dimensions play in our lives will music's qualities be understood in its fullest as extensions of larger philosophical interpretations.

## Biology and Culture

We exist as organisms and members of the human species, yet we are individuals who are part of a collective called a culture. Changes in culture are not synonymous with changes in basic human makeup. It is important to distinguish between the two and to understand that basic human makeup results from a slow evolutionary process directly related to longevity of the human species. Given a quite lengthy process of generational change by comparison to other mammals, hundreds if not thousands of years must be subject to environmental changes before the gene pool shows alteration. Cognitive scientist Steven Pinker considers the argument in the nature-nurture debate, leaning toward the side that favors abilities generated through

evolution, an immensely elongated process: “[J]ust because the world we know is a construct of our brain, that does not mean it is an *arbitrary* construct—a phantasm created by expectations or the social context” (2002, 199).

On the other hand, changes in culture can occur overnight depending on the shaping stimulus. Drawing largely on the writings of Richard Dawkins, an English evolutionary biologist, Susan Blackmore (1999) shows how quickly society can change as she equates *memes* as cultural carriers analogous to genes in the physiological world. Memes spread quickly. As Blackmore describes the necessary conditions,

the skill of generalized imitation means that humans can invent new behaviours of almost unlimited kinds and copy them on to each other. If we define memes as transmitted by imitation then whatever is passed on by this copying process is a meme. Memes fulfill the role of replicator because they exhibit all three of the necessary conditions, that is, heredity (the form and details of the behaviour are copied), variation (they are copied with errors, embellishments or other variations), and selection (only some behaviours are successfully copied). This is a true evolutionary process (1999, 50–51).

The music educator must know what comprises humanity in its physical and mental makeup. And one must keep abreast of the quickly occurring changes in human behavior. Globalization has made the world increasingly monocultural; by contrast, as the role of the nation-state diminishes, the need to identify with a group increases tribalisms and ethnicities. The human condition requires group identities; these stress differences that distinguish one’s group and thus one’s self from those in other groups. If the music educator is not adept at negotiating changes, and if cultural differences are not understood, teaching effectiveness is hampered and in some cases is seriously curtailed. Within the multicultural societies common throughout the Western and developed world today, it is fundamentally imperative that teachers be doubly sensitive to cultural differences.

Moreover, as the varieties of ethnic cultures enrich the fabric of the society, music is one of the artifacts of identity that is brought to the nation. Ethnic musics and other cultural artifacts cannot be ignored; doing so insures that borders preventing communication will only become more impermeable. The multicultural imperative demands that teachers generally, and music teachers specifically, treat their students as doctors treat their patients, that is, the patient—or student—is treated according to the unique needs of each individual, rather than according to a one-size-fits-all mold. That the newly arrived must assimilate new learning does not negate the need to offer a helping hand across what otherwise might be a widening cultural divide. Thus, we learn from each other and broaden our own outlook on life. The opportunity of our age is that we continually expand our understanding of the human condition to advance the cause of the species as a whole.

## Dualities

Perhaps something in our genetic makeup leads us to have difficulty escaping from either-or choices, while ignoring alternative solutions. Too frequently such dualities obscure reality. Can something be universal and relative at the same time? Is nature not also subject to nurture? Usually, dualities are simply two facets of the same

phenomenon. The choice is usually not one or the other, if one understands that a property or phenomenon can have two or more qualities at once.

A major question of duality concerns mind and body. A study of philosophy reveals an extensive history of this duality, beginning with Plato and running through Rene Descartes (seventeenth century) and the eighteenth century philosophers John Locke, George Berkeley, and David Hume. Descartes seems to be the most well-known representative of the mind-body duality, but neuroscientist Antonio Damasio (1994) argues that reason is not separate from emotions and feelings, that the neuronal substrate is a totality that contains all human experience, both mental and physical. Author and psychologist Daniel Goleman (1995) reinforces the view that nothing is decided by reason without a feeling component.

The music educator who is well founded in philosophical discourse is better equipped to deal with current controversies facing society and, hence, its schools. Questions of sacred music in the schools, the arguments between evolutionists and creationists, sex education, and other major issues debated in contemporary life, all affect schools because ferment in the public sphere typically results in ferment in schools.<sup>14</sup> As a result, some parents have strong views that can effect how music programs are conducted and administered. Their children are representatives of their philosophy of life, whether well thought out or simply absorbed through experience. Religious views often play a major role in how they believe their children should be educated. If music education takes its role seriously as part of the larger fabric of education, then music teachers will be well prepared to contribute to such discussions.

## **Intellectual Fearlessness**

Unless thwarted, we have a natural desire to understand the world we inhabit; in fact, it may be a psychological necessity. Our own existence is enhanced when we also have knowledge of human characteristics and how we interpret natural and psychic phenomena.<sup>15</sup> Since Darwin, we generally recognize that we are an extension of the natural world—evolutionary products of billions of years on Planet Earth, and still amazed and puzzled by our metaconsciousness (awareness of being aware). Without understanding the world, our place within it, and what we are as one of the organisms that occupy the Universe, we lack sufficient insight to what it means to be human.

Because we live in a world of constant change, the more we know about our planet and its inhabitants, chiefly the human species, the more we can utilize our own capabilities in understanding our place in the vast complexities of life. As educators, we have the potential to leave a legacy to the younger generations, which forms the platform of an expanded understanding of life, much beyond teaching simply the fundamentals of music and its performance. Nevertheless, the arts are an essential part of what it means to be human; they answer basic questions of human existence by delving into significant aspects of life that otherwise cannot be spoken.

The world has never been in the predicament that the beginning of the twenty-first century brings: namely, that we have the wherewithal to destroy the planet and its species. The music educator has the opportunity to play a role in finding answers to the numerous conflicts that exist in the American and world society. The one preparation that will aid in that contribution is a broad cross-disciplinary approach to one's education.

## Notes

1. **"ideology: 1. system of social beliefs:** a closely organized system of beliefs, values, and ideas forming the basis of a social, economic, or political philosophy or program . . . **2. meaningful belief system:** a set of beliefs, values, and opinions that shapes the way a person or a group such as a social class thinks, acts, and understands the world" (Soukhanov 1999). Examining phenomena from a sociopolitical agenda, for example, tends to distort the true nature of that being viewed. Another example: The Boston Globe of July 9, 2004, announced that The Union of Concerned Scientists now has 4000 signatories including 48 Nobel Laureates on a statement criticizing the Bush Administration of using ideology instead of science to make medical and environmental decisions.
2. Reductionism is a complex term requiring contextual definition, for example, ontological, methodological, and theoretical. Suffice it to say that reductionism is a process of condensing all mental and physical phenomena to a single essence or substance. In the case of ideas, it remains to be seen whether there is a unitary principle that lies at the basis of all existence. After all, Einstein, following his first great discovery early in his life, spent the rest of his years searching for such a unitary principle.
3. Tyler Volk is interesting, particularly because of his background that gives him a broader world view than others more focused on a single discipline. Volk has a bachelor's degree in architecture in addition to his graduate work in science.
4. "Holon" is a term coined by Arthur Koestler to describe a unit that is a whole for its subparts, but that itself is a subpart of a larger whole. A "holonic world," then, recognizes the continuing process of structures becoming more complex, which then increases the number of levels and subparts. See Koestler (1967) and also <http://www.panarchy.org/koestler/holon.1969.html> and <http://www.worldtrans.org/essay/holarchies.html>.
5. The major newspapers frequently carry news stories on charter schools and privatization, standards and accountability, and evolution and creationism, about which there is much disagreement.
6. For a fuller explanation, see <http://blackboard.lincoln.ac.uk/bbcswebdav/users/dmeyerdinkgrafe/archive/palmer.html>.
7. Cosmogony and cosmology refer to theories of the origin of the universe. However, cosmogony refers to the belief system of a people about their origins, whereas cosmology suggests a scientific study of the entire universe. Examples of cosmogony are found in the Hindu *Mahabhrata* and *Ramayana*; the Japanese *Kojiki* and *Nihongi*; Native American stories on their origins, for example, "How the world was made"; and the Judaic Old Testament, the *Pentateuch*.
8. Isaac Newton conceived of time as *absolute* compared to *relative* time. Absolute time passes uniformly despite what is happening in the world; one event, no matter the duration, follows another, from which we obtain a *linear* sense of events spread across time. Thus, the Western concept was well ingrained in the culture after Newton.
9. The Japanese converts to Christianity were instructed to reject Shinto and Buddhist beliefs to the chagrin of the shogun Hideyoshi. Persuaded by Buddhist priests because of the loss of adherents to Christianity, the shogun persecuted many of the 300,000 Christians. The

- Twenty-six Martyrs of Japan* were canonized in 1862 for their martyrdom, a mass execution on wooden crosses in Nagasaki in 1597. Persecution intensified in subsequent decades.
10. An example of different ideas of time can be found at <http://users.ox.ac.uk/~jrlucas/time/religion.html>.
  11. See Kaku 1994 and 1997.
  12. *Shakuhachi* is the end blown bamboo flute that plays music typically without sense of a downbeat or regular pulse.
  13. *Gagaku* is the court and shrine ensemble of Japan. The introduction of a piece features an improvisatory sense of rhythm with less definite pulse, but continues with a definite beat following the introduction. Even here, however, the fourth beat of the generally duple meter is frequently stretched beyond the normal duration. *Gagaku* instrumental pieces are frequently in three sections called *jo-ha-kyū* indicating a successively faster rendition for each section.
  14. See Ravitch 2000. This is an excellent history of education in the United States and should be read by all those dealing with educational policy.
  15. Jared Diamond states: "Every human society has felt a deep need to make sense of its origins, and has answered that need with its own story of the Creation" (1993, 16).

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