

# MEMORIES AND VISIONS OF TRANSFORMATIVE EDUCATION THROUGH MUSIC

— an April 2005 interview with —

LORIN HOLLANDER

2005/2006 marks the 50th anniversary of Lorin Hollander's Carnegie Hall debut at the age of eleven, the beginning of his continuously acclaimed international career spanning five decades. A veteran of over 2,500 performances, he has performed with virtually every major symphony orchestra in the world and for over 35 years has led community outreach and university residencies, giving master classes, conducting youth orchestras and choirs, and holding interdisciplinary seminars on creativity, transformational education, corporate leadership and the integration of the arts, sciences and spirituality.

Lorin Hollander has testified before the US Congress and various State Legislatures as an advocate for the arts in education, served on the Rockefeller Panel "Arts, Education and Americans," which published "Coming to our Senses," and recently presented at the International Music Education Policy Symposium. He has created prototypes for university and community outreach residencies for the National Endowment of the Arts, American Symphony Orchestra League, MENC, and the first National Festival of Youth Orchestras. Lorin Hollander holds three honorary doctorates, received the 2003 "Music Has Power" award from the Institute for Music and Neurologic Function, and is a Fellow of the Joseph Campbell Foundation. With a special interest in transformational education, the creative process, integral healing and global futurism, he has served as advisor to The World Congress on the Gifted and the Commission On Presidential Scholars, and has worked with the International Federation of Music Therapy, International Transpersonal Association, the American Psychiatric Association, the Social Science Research Council, and the United Nations State of the World Forum.

*I am not sure our society is well informed on what it means for children to grow up musically. How, for example, does a young child grow up with a serious interest and passion for music and how does that passion evolve?*

For me things were very different from the lives of most other children. I was memorizing music at 11 months; I composed music at age 3, performed the *Well-Tempered Clavier* at 5 and gave my Carnegie Hall debut when I was 11. To give some sense of the intensity of my early life studying and performing music, by 7 years old I was giving recitals and practicing piano 6 hours a day. I performed with orchestra at 10 and from age 13 until 20 produced a recording every year (including two with the Boston Symphony). I performed regularly on national television, began traveling the world at 14 performing 40 concerts a year, and by the age of 22 I had collaborated with Bernstein, Leinsdorf, Monteux, Ozawa, Previn, Szell. I continued in public school until 13, when I began high school at the Professional Children's School in NYC, allowing me to attend class less frequently to accommodate my concert schedule. My experience of music was evolving into a commitment to the creative expression of the deeper meaning and spirit of music.

*Did you have equally passionate interests in other subject areas and did they relate to your music?*

While I spent most of my youth immersed in music, working up to 16 hours a day, music was far from my only interest. I also pursued a wide array of personal explorations into

science, art, mathematics, literature, mythology, philosophy, religion and spiritual psychology. It seemed that many of the modalities of cognition, intuition and conceptual understanding needed to learn and absorb these other areas of knowledge had already been awakened through my creative experiences in music.

As an example, my musical studies relate closely to my fascination with amateur radio. I have been a licensed ham radio operator since I was 16 (my call sign is WA1PGB). I was studying and building electronics at 12 and became intrigued with the similarities between electromagnetic wave mechanics and acoustical science. I realized that the relationship of frequency of vibration to wavelength in antenna theory is virtually identical to that same relationship in music. Simplified, if an electromagnetic wave is traveling at the speed of light while vibrating at 3.5 million cycles per second, the distance between the location of one peak of a sine wave cycle and where the next peak appears is measured as 80 meters. Similarly, if a musical note—let's call it an A—is traveling through the air at 440 cycles per second, the distance between the peak of one cycle and the location of the next peak is measured as 0.78105 meters. And in both cases the number of cycles in "frequency," the distance in "wavelength" and their relationship are the same related intellectual concepts. In the case of music, however, that wavelength distance can be heard as sound, distinguished and physically felt. This integrates the actual physical vibrations, the abstractions of the mind and a felt-sense in the body, uniting them into what becomes a spiritual experience of *tone*, or *value*. This is, by the way, one example of the beauty found in Pythagorean Laws of Harmonics. It pales, however, next to the magic of how pitch to string length relationships illuminate the ways vibratory patterns create the formations we find in nature.<sup>1</sup>

It should be no surprise that years studying music allowed an intuitive understanding of the laws of vibrations—frequencies, wavelengths, harmonics, overtones, intervals and resonance. Playing a note on the piano, making vibrations in the air, was eerily similar to sending Morse code on a

telegraph key—the one vibrating the air and the other beaming vibrations at light speed into the cosmos—but perhaps for different audiences. I expect SETI (Search for Extraterrestrial Intelligence) will send me the reviews for these latter performances before too long!

*How do you think the roots of this order of learning in relationship to music was nurtured and developed in your early childhood?*

When I was very young I heard my father's string quartet perform the Haydn Serenade. I went home to write down the music by drawing spirals on my pad. I didn't want the beauty to get lost. When my father asked what I was doing, I showed him, singing "dah ` di dah dah `." "You silly boy," he told me, "it's already written down." He opened the score, and I felt as if I fell into it; I recognized and understood the little black dots instantly. What I couldn't understand were all those vertical bar lines!

One day I found Bach's *Well Tempered Clavier* in my toy box. When I saw the first page, I recognized something which I knew reflected the implicate order of the universe. I knew then that I didn't have to be afraid of the dark. At this time I made a pact with something inside me to which I delegated the task of memorizing music. I would learn a Bach *Prelude and Fugue* in two hours, and would actually tell this entity, "Hear, remember this" and physically feel the music being absorbed deep inside.

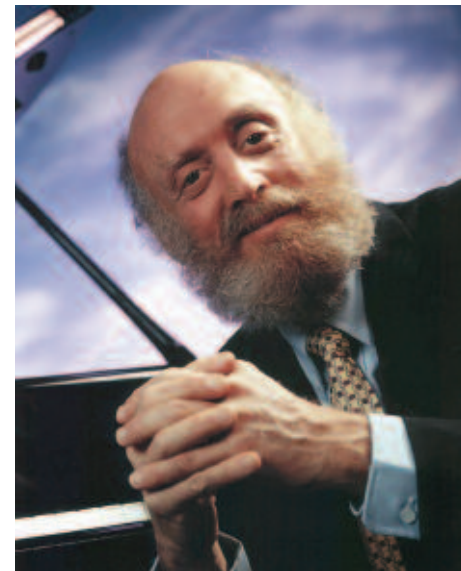
Through exploring the deeper relationships between sound and symbol, I found that music flows from an unseen, unthought, preconscious dynamism. Later, in creative play I became aware that I was striving to shape my work on a preconscious, aesthetic perception of something deep inside me—the contours and fluid processes of the place from where the creative imagination was rising. If, when in the heat of a creative experience—playing, composing, improvising—I spin around and 'stare into' this place, I observe a constellation of dynamic unfolding formations interlocked in all of their amazing complexity. These experiences allowed me to discover many extraordinary truths about the dynamic infrastructures under-

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lying cognition, perception, and the creative process itself, and I later sensed that our musical structures, graphic tessellations, abstract thought processes and systems of knowledge are forged on these fruits of contemplative insight. I knew I would one day have to bring to light what I was discovering in this preconscious realm, relate it to how it has been understood over the ages, and explore it in the greatest possible depths in order to nurture creativity most powerfully in the lives of young people.

*Later on, how did you embark on a path of advocating for education through music?*

In my early twenties, outreach activities became a central focus in my life. As more of my time was spent in schools, universities, community centers, elder hostels, hospitals, and prisons, I learned how desperately out of touch many people are with their emotional, spiritual and creative being. Preparing to perform the great masterworks in piano called me to enter many dimensions of creative consciousness, and to master the vast array of human capacities



LORIN WISHES TO THANK HIS WIFE TARA FOR HER DEEP INSIGHT, CLARITY AND VISION WHILE ASSISTING IN CRAFTING THIS GUIDED INTERVIEW. HE ALSO WISHES TO THANK HIS MENTOR AND FRIEND ARTHUR EGENDORF, PHD FOR SHARING MANY JOURNEYS OF CREATIVE DISCOVERY.

## From 'Heavenly Harmony' to Social Transformation: Lorin Hollander's "Memories and Visions of Transformative Education Through Music"

BY ROBERT DODSON

**HOLLANDER REMINDS US OF THE INTERRELATEDNESS OF ALL THINGS, THROUGH VIBRATION RANGING FROM THE ACOUSTIC TO THE COSMIC, WITH MUSIC AS A METAPHOR FOR THE "IMPLICATE ORDER OF THE UNIVERSE."**

To Lorin Hollander's profound and inspiring interview, "Memories and Visions of Transformative Education Through Music," it is tempting just to say "Bravo, and Amen!"

Mr. Hollander draws upon science, mathematics, philosophy, art, literature, mythology, religion, psychology, and education, palpably demonstrating by the spectacular range and scope of his knowledge and imagination, the role of music in the life of the mind and of the human spirit; or as he puts it, "the modalities of cognition, intuition and conceptual understanding." For Hollander, music is a universal principle, a metaphor and means for cosmic knowing, and an ethical and redemptive force; and for him, clearly, music should inform all serious thinking about education and its role in developing the individual within society and in tune with nature.

A musically privileged childhood gave Mr. Hollander a head start one might wish for all children. His anecdotes of early learning experiences and the leaps of understanding young minds (certainly his young mind!) can take suggest that we must teach up rather than down, particularly to the young.

Hollander reminds us of the interrelatedness of all things, through vibration ranging from the acoustic to the cosmic, with music as a metaphor for the "implicate order of the universe." His intuition of "the unseen, unthought, preconscious dynamism...of something deep inside me" as the wellspring of creative energy from which comes music and by which he (one) can connect with the Platonic demiurge is immensely appealing.

Don't miss his call for "global transformation" through music

as an alternative to "limitless consumption" and exploitation; for "visionary and transformative education" through the "harmonic wisdom" of music; for life-long learning. "We must ...awaken a new experience of and relationship to music, recognizing it as a divine causative principle of our soul and the spirit of the cosmos....For this we must transform education." And he reminds us that love is the informing principle of pedagogy, and that "mentorship" has been, is and always will be its essential mode.

I could not help but be reminded of the 17th century English poet John Dryden's "A Song for St. Cecilia's Day, 1887":

From harmony, from heavenly harmony,  
This universal frame began:

When Nature underneath a heap  
Of jarring atoms lay,

And could not heave her head,  
The tuneful voice was heard from high,  
"Arise, ye more than dead!"

Then cold, and hot, and moist, and dry,  
In order to their stations leap,  
And Music's power obey.

From harmony, from heavenly harmony,  
This universal frame began:

From harmony to harmony  
Through all the compass of the notes it ran,  
The diapason closing full in Man.

I commend to the reader the rest of "A Song for St. Cecilia's Day" and all of Lorin Hollander's "Memories and Visions of Transformative Education Through Music." ¶

*Robert Dodson's career in music performance, teaching, and administrative leadership spans more than three decades. Appointed Provost of New England Conservatory in 2004, Dodson has previously served as Dean of the Oberlin Conservatory (1999-2004), Dean of the Lawrence University Conservatory of Music in Appleton, Wisconsin (1989-1999), as Vice Principal and then Principal of the Royal Conservatory of Music at the University of Toronto (1981-1988), and as Associate Professor and Artist-in-Residence at Queen's University, Kingston, Ontario (1969-1981). He was founder and Managing Director of the Chamber Music Institute, Friends of Chamber Music, Inc., Toronto. Dodson was cellist of the Vaghy String Quartet from 1969 to 1981, and has performed and taught in Canada, the United States, Europe, and China.*



Lorin Hollander at age ten prior to his Carnegie Hall debut with the National Symphony Orchestra (of New York) when he was eleven.



Lorin Hollander became a licensed amateur radio operator at sixteen when he built his first station from Heathkits. He is now an Amateur Extra, WA1PGB.

one needs to perform music at the highest possible artistic standards. It became very clear that performing music means nothing unless the music is imbued with the heart and soul of the deepest humanity.

Music has many wonderful gifts to offer our children and yes, it does wondrous things within and for their minds. But for me music's real importance is its power to awaken and nurture our children's creative vision and compassion. In the great music of the world, they can hear, know and experience what is possible for humanity.

*In your lifetime you have worked with many remarkable organizations and institutions of national and international importance, not only in the world of art and music education, but also in science, psychology, spirituality, integral health, and global transformation. It is clear that you believe that music can connect substantially to cognitive and creative issues throughout a musical education. Given the vast scope of cultural and global issues addressed by these institutions, how would you synthesize what you have discovered together and what implication it has for music in education?*

Based on my work with these institutions there is overwhelming consensus that we are living in remarkable and dangerous times, a period unprecedented in human history. The Earth has not undergone anything comparable to the order of devastation and destruction on the scale witnessed today since the global redefinition 67 million years ago.<sup>2</sup> Nothing since approaches the current extent of the mass extinctions, alterations of climate, toxicities in the biosphere, or geological imbalances. The planet continues to be exploited in the name of a 'progress' no longer commensurate with human survival. In the US, corporate industry, government and media possess our consciousness and evoke compulsions toward limitless consumption.<sup>3</sup> We face worldwide starvation, gruesome wars and rampant terrorism. Much education is impoverished, and our families and communities disintegrate. We witness addiction, violence and suicide among children and adolescents in epidemic proportions.<sup>4</sup> Like proverbial canaries in coal mines, our children are telling us that much is terribly wrong.

These emergencies call for nothing less than a planetary transformation in consciousness—the greatest in human history, one that many believe is already underway.<sup>5</sup> For me, the burning question is how we might awaken an experience of our world and each other which is harmonious, ethical, non-exploiting, compassionate. Reversing these crises through education is perhaps the greatest challenge facing humanity. If we fail to nurture in our schools and universities the creativity and humane priorities that will empower young people to envision and bring about a unifying ‘re-genesis’ in humankind, they will fail to create a resonant existence in and experience of the world.

To transform education we must first address the most fundamental core elements of human consciousness and catalyze the underlying intuitive dynamics of the creative process. We must learn to cultivate self-reflective, loving and harmonious ways of being in young people. Those of this rising generation must become global citizens of the new millennium: prophetic, visionary leaders prepared to peacefully and powerfully re-create the institutions with which they will work, awakening in them a new perception of existence. Music and art can be the key.

*How can music play a role in such a global transformation and in addressing these problems? Why is music the key?*

Music, perhaps most powerfully, enhances the organically interwoven dimensions of creativity, vision and intuition, as it fulfills our yearning and reflects the very core of our beings. It has the power to significantly curtail and prevent the addictions, suicides and violent dysfunctions suffered by our children,<sup>6</sup> and it enhances many of the important modes of cognition we know how to measure. Music also touches the fundamental and universal aspects of our souls and therefore has an unmatched power to nurture and guide the creative inspiration we need to assure our survival as planetary beings. Furthermore, as the art and science of the vibration, (understood both in Pythagorean Laws of Harmonics<sup>7</sup> and in superstring theory in physics<sup>8</sup>), music mirrors the waves and vibrations underlying the most funda-

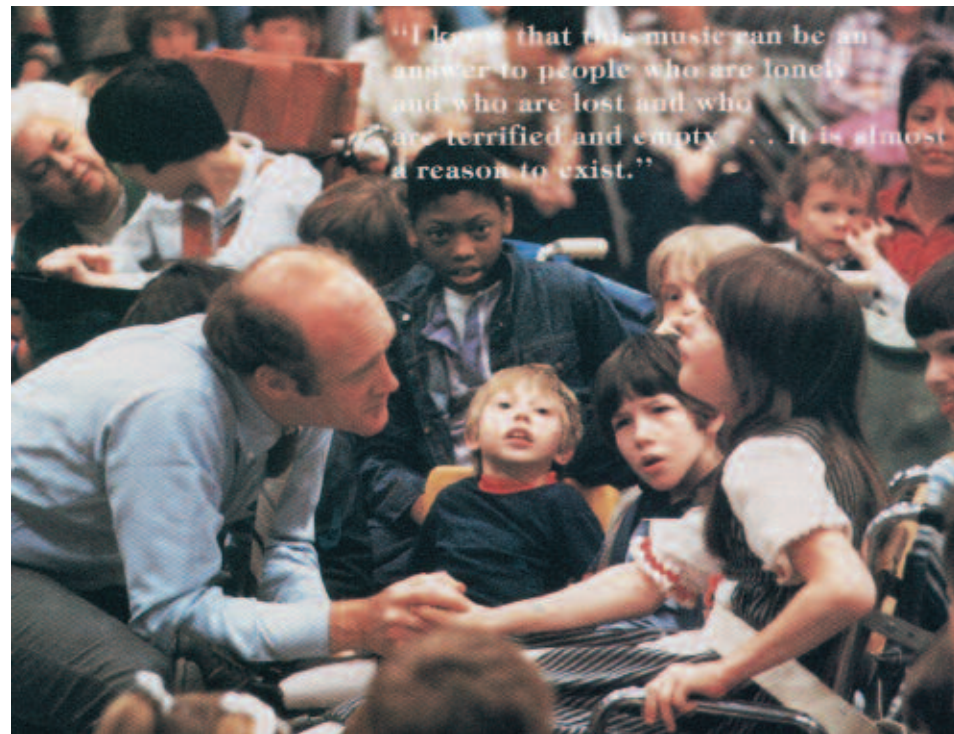
mental causative principles found in nature and the very life-forms we are struggling to save.

In other words, the universe and the fabric of our minds are shaped the way they would sound. It is through music that we may most readily touch and gain access to the implicate order of the cosmos. Yet, music may be most important in that, as John Blacking pointed out in *How Musical is Man?* “It prepares us for the task of learning how to love.”<sup>9</sup>

*Dr. Shinichi Suzuki [1986–Nurtured by Love], a musical innovator of global dimension in the last century, made similar statements about the necessity to teach music in a loving relationship at an early age. What kind of education through music will empower harmonious ways of being?*

To speak about the crises facing the planet, we have long used terms such as ‘disharmony’ and ‘discord.’ This is not merely metaphor; many industrial, governmental and educational institutions

have long been out of resonant alignment with the needs and aspirations of its people and the cycles and vibrations of nature. What the world needs now, in elementary and high schools as well as in universities, is what we can call ‘visionary and transformative education through music.’ This kind of education would provide an experience of how one enters the realm of the sacred, awakening capacities to re-imagine a world where we live in harmonious being with ourselves, others, and the universe. Education must prepare innovators able to communicate their visions in ways that might awaken those enabling and endorsing non-sustainable modes of being. As a reflection of nature’s vibratory patterns and causative principles, it is music that contains the blueprints of planetary vitality. Such a foundation for ‘visionary and transformative music education’ can empower its students—and soon our leaders in government and industry—to access this harmonic wisdom within to guide their work in global transformation.



*A family concert with a high school youth orchestra performing Gershwin’s Rhapsody in Blue at a Dayton, Ohio shopping mall. This performance in the early 1980s was part of a community residency which included appearances in public schools, factories, hospitals, a maximum security prison, and a special event for seniors and orphans.*

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*How should contemporary educators start creating ‘visionary and transformative education’ through music?*

It begins with what the New England Conservatory Research Center and the Music-In-Education National Consortium are doing, and this is why I believe the work here is so important. Learning through music is much more than teaching kids musical skills and repertoire. From my experience, lifelong learning through music can make a transformed system of education possible, a system designed and implemented with music and learning through music at its very core—music’s rightful and historical place. Learning through music—at the university, in graduate study, for lifelong learners, basic education, in pre-nursery

and hospice, and most urgently in the full hierarchical spectrum of teacher training—mandates teaching with enlightened self-knowledge, teaching that nurtures creativity, inquiry and reflection on a scale as wide as the spread of literacy. We must learn to learn everything the way we learn through music.

Since the world has forgotten what music is and has always been, we must first awaken a new experience of and relationship to music, recognizing it as a divine causative principle of our soul and the spirit of the cosmos. For this we must transform and re-imagine all education and its goals, to empower visionary creativity, compassion and harmonious being.

*Are you suggesting that this vastly expanded understanding of what music is has profound implications for education in all areas of knowledge?*

Yes absolutely, and that is only the beginning. Hans Kayser, who re-discovered Pythagorean Laws, tells us that through the theory of world harmonics, one “gains possession of the key, which for the first time opens the door to an understanding of the mysteries of minerals and plants, their proportions and the rhythms of their growth by means of their musical number”<sup>10</sup>—vibration and tone. We find these formations in seashells, galaxies, in parts of our bodies, in crystals, sunflowers, orbits, eggs, buds, pine cones and in the unfolding of embryonic life.

But, we also sense a deep nostalgia in our recognition of the shapes of natural formation because they are congruent with the shapes of our intuitive creative imagination and preconscious aesthetic perception, long recognized for their symbolic power—the Platonic “world of ideas that shine.” These are the actual topological foldings of the abstract mind, and through contemplative insight we may glimpse the shapes we recognize as the contextual paradigms reflected in abstract systems of thought—in art, mathematics, wave mechanics, language syntax and mystical illumination. And most powerfully in music. They are the link between the internal world of cognitive thought forms and what we perceive, (or create) as

“external reality.” Epitomized in music, they are the common denominators, fundamentally shared cognates that allow us to connect all areas and realms of knowledge and cognition across disciplines. As physician and educator Lewis Thomas (1979) put it, “We listen to Bach transfixed because this is listening to the human mind.”

*Can you give us examples of the fundamental relationship of music to other disciplines and how, in Leonard Bernstein’s words, music could be taught in the context of “interdisciplinary cognition?”*

One will not find anything more basic than the root emergence of music, mathematics, biology and physics from vibrations. Fibonacci numbers are, after all, the mind’s analytic structure of abstractions reflecting the dynamic symmetry of growth and being in the natural world.<sup>11</sup>

Music, vibration and biology? You can’t get more basic than the fact that the vibratory patterns found in music are shaping the very stuff we are studying in this discipline—the formations we find in nature. In addition, in the realm of the body, music undulates with the sense of pulse—the dance, rhythmic movement. And in doing so it becomes a metaphor for life. Much of nature seems to manifest rhythmic movement: the seasons, the ebb and flow of the tides guided by the cycles of the moon, our heartbeat, breathing, brain waves, the life cycle of planets, the beat of wings, life and death itself—all are rhythms, cycles, pulses. Our sense of wellbeing is intimately entwined with our sense of rhythmic pulse.

Music, vibration and physics? Science is telling us that the vibrations we know as music most closely reflect the ultimate ground of reality in the universe.<sup>12</sup> The Laws of Harmonics should not be understood as a quaint idea from ancient Greek culture since the physical sciences, at their leading edge, are discovering realities about the nature of the universe which are astonishingly congruent with Pythagorean Harmonics. Groundbreaking discoveries have shown us that what Einstein searched for all of his life, a theory for unifying all forces in the universe, has likely been



Lorin Hollander rehearses Aaron Copland's *Concerto for Piano* with the composer conducting. This performance in the 1970s was with the Los Angeles Philharmonic at the Ojai Music Festival.

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found in "superstring theory"—tiny filaments of energy vibrating like a violin string in different vibrational patterns.<sup>13</sup> This may be one of the strongest rationales we will ever have for placing music at the center of all education.

Music, vibration and the other arts? Vibrations of color, rhythm, and dance. And more. Remember that music is based

on the overtone series, which is a fundamental physical reality in nature. We ourselves are shaped on these physical laws. Through artistic and scientific experience with the monochord—the sacred tool of harmonical science—children can be awakened to the resonance their music has with the formations they know in nature, and with the very experience of who they are.

It is difficult to overstate the power and wonder of the interconnections this dimension of music has with science, mathematics and philosophy. Dava Sobel writes that "Galileo's father Vincenzo introduced the boy to the Pythagorean rule of musical ratio, which required strict obedience in tuning and composition to numerical properties of notes in the scale. When Vincenzo filled a room with weighted strings of varying lengths, diameters, and tensions to test certain harmonic ideas, Galileo joined him as his assistant. It seems safe to say that Galileo, who gets credit for being the father of experimental physics, may have learned the value of experimentation from his own father's efforts."<sup>14</sup> Yes, and he may have discovered a great deal more as well. What we know is that Galileo grew up experimenting with harmonical laws, and then went on to re-imagine the world and create a radically new understanding of the universe.

*There is a groundswell of interest in the quality of teacher training in contemporary American education. Do you assume that 'visionary and transformative education' through music will need visionary and transformative teacher training?*

There is a global movement calling for the transformation of teacher training and professional development. In its 1996 report, "What Matters Most: Teaching for America's Future," the National Commission on Teaching and America's Future confirmed that the educational system in the United States is in devastating crisis and that the best hope for saving our system of education—and thus, it warned, for the survival of our society—depended upon "the re-invention of teacher training"—i.e., training teachers as mentors and transforming existing teachers into mentors.

The mentoring relationship, as is simply stated in Taoist philosophy, is the giving and receiving of wisdom,<sup>15</sup> and requires profound self-knowledge gained through contemplative self-reflective practice. At the present time, there is little consensus on exactly what is a mentor, or how best to prepare them. For mentorship we must discover a way of being, a state of openness (or perhaps vulnerability) in which we empathically relate with the mentored.<sup>16</sup> In

this quality of resonant relationship, a new intuitive knowledge and insight are awakened, a new discovery which did not exist before; a revelation not available to either participant alone is born.<sup>17</sup>

*Can you say more about the role of self-reflection and mentorship in music education?*

Mentorship is what has sustained the life of music for centuries—music mentors mentoring future music mentors. Musicians, who for centuries have passed on their majestic all-encompassing traditions from generation to generation through mentorship, might therefore be most qualified to research and rediscover missing wisdom and knowledge about the development of mentoring skills.

When working with my own mentor, Eduard Steuermann, with whom I studied from age 8 until 20, during the times when I discovered something new and profound I became aware that there was a change within me, and at those times, Steuermann would speak with a growing enthusiasm as if he were discovering something wonderful and new himself. I would perceive a strange and beautiful quality of light in the room. Nothing else seemed to exist in the world but the music. While our standards aspired to perfection, I was never criticized. I felt safe to express the deep emotion or outrageous brilliance I was finding in the music.

When mentoring others, I learned to place myself in that state which the Buddhists call "not knowing," and at these times I would see the work of music at hand in entirely new ways, as layer after layer of meaning and insight became available. I came to realize that this experience was not available to me alone, but was born in the mentoring relationship. I learned that when I dared to be authentically open and receptive, I empathically resonated with the person whom I was mentoring, and when that happened there was no longer any mentor or mentored. Rather, we were each co-discoverers of a new revelation which neither of us had access to alone. We each gave and we each received wisdom.

*How can the Research Center for Learning Through Music at New England Conservatory*

*help this transformative and visionary process come about and how do we train mentor-teachers for Music-in-Education programs in schools?*

Mentorship is perhaps the most valuable dynamic that learning through music can give to the world of education. Learning through music will accomplish very little if it is not taught by enlightened mentor-teachers. As Gail Burnaford states, "Teacher quality is the single most important determinant of what children know and are able to do."<sup>18</sup> Yet "we in the United States devote less to professional development of our teachers than any other western industrialized country."<sup>19</sup> Since there are many fruitful ideas about what constitutes a mentor and ways in which to train them, it stands to reason that a research center aligned with conservatories and schools of music, which have been passing down music for centuries through one-to-one mentorship, would be the ideal venue for forums of inquiry committed to bringing more clarity to this vitally important issue. In forums of inquiry, we would discern when a mentoring state of being comes alive (and when it does not), discover amongst ourselves what we need to do to awaken that state of being and distinguish what keeps us from entering it. Knowledge about mentorship and the ways mentors can be trained would be a very valuable component in the process of the evolution of music in public schools, as it would be bringing forward knowledge being called for in education throughout the world.

I think we are all aware that the training of conservatory students and music education students must be expanded in many ways to prepare them for the real world. To implement learning through music with power, vision and quality, we must vastly expand the training and professional development of classroom and music teachers for learning through music. They need to be trained to discover what Eric Booth calls the "verbs" in music<sup>20</sup>—the preconscious processes underlying the experiences of learning through music—so that they have the capacities to recognize—distinguish, experience, identify—the similarities and differences between learning in music and learning in other

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subjects. For this training young musicians would engage in action research, self-reflection on their own artistic processes experienced both as a musician and as a mentor-teacher.

Within the larger context of visionary and transformative education through music, we must explore *qualities* of a new curriculum that prepares music and education majors to work within this new paradigm. This curriculum might embody the following qualities:

- Nurturing creativity and empathic and resonant being—empowering recognition of what would nurture or stifle creativity in future students

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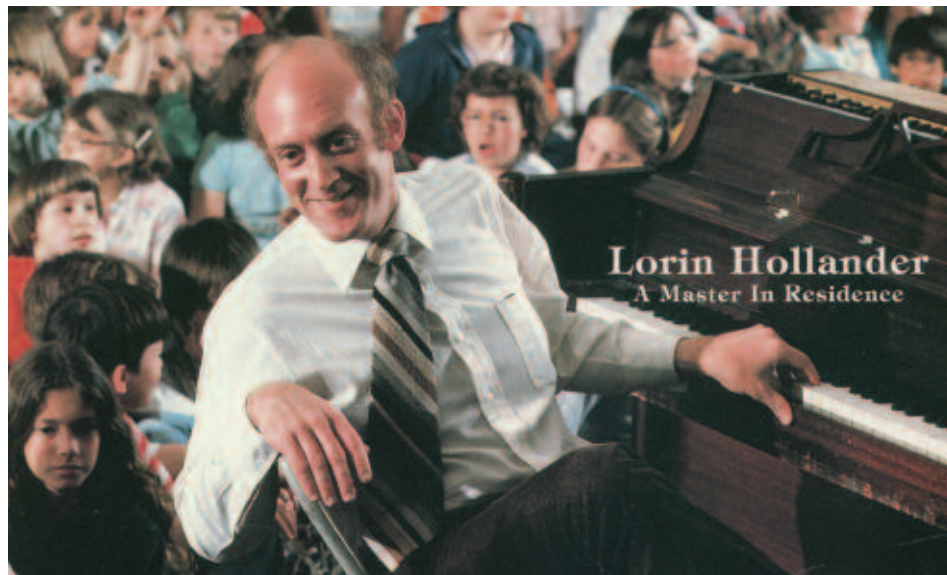
education has and why these particular effects occur.”<sup>21</sup>

In addition, the underlying preconscious processes common to music, the arts and other disciplines in many ways have not yet been discovered. Dr. George Odam of the Guildhall School of Music and Drama in the UK observes, “The practice of the arts, and reflection on and documentation of those practices, has the potential to reveal truths unavailable through any other means.”<sup>22</sup> Therefore, a mutually informative balance of qualitative and quantitative research methods is necessary to illuminate the vast web of interwoven modalities of consciousness we tap into through musical experience.

Eric Booth believes that what is new in this century is ‘art for learning’s sake,’<sup>23</sup> the multiple distinctions of the different modalities of *learning* experienced by musicians in their working process. As Elliot Eisner states, “We need research on what’s going on in the minds of young artists-to-be, or artists-in-training as they do their art.”<sup>24</sup> What artistic experience can bring into the learning equation is material which the research center can clarify and codify.

uations of its findings) is a crucial component in understanding the vast domain of issues inherent in learning through music. Dr. Dennie Palmer-Wolf (Annenberg Institute at Brown University and former advisor to the research center at New England Conservatory) points out that “the quasi-experimental, control group, treatment group research designs *tell us nothing* about the specific effects arts

- through self-reflection on the creative process at play across all disciplines.
- Preparation for the mentoring relationship and self-reflection.
- Discovery of the preconscious processes underlying music learning and learning in other disciplines, thereby preparing future mentor-teachers to develop each child’s capacity to learn through music, both in terms of process and interconnected content areas.
- Training for effective participation in diverse modalities of outreach, honoring the healing potential of arts residencies while embracing the role of leader in the empowerment of the community through music.
- Preparation of musicians as citizens acting as change agents in the corporate, industrial, and governmental sectors, while advocating music-in-education as strategies for school improvement.



*Helping young people explore music, learning, and creativity is an example of Lorin Hollander’s trail blazing work in music and arts outreach into the nation’s public schools and communities. At the forefront of research on consciousness and creativity, Lorin is continuing to illuminate the realms of knowledge and experience that artists must embrace to take on this important mentoring work.*

*What do you think are the urgent issues New England Conservatory’s Research Center for Learning Through Music should be exploring and what kind of research methods will need to evolve?*

First we must all recognize that qualitative self-reflective research (with objective eval-

**A model of a research center as a forum of inquiry:**

The various forms of research necessary to further the mission of music in education should be carried out in forums of inquiry—convening faculty, students, artists, researchers and visionaries from diverse fields to explore through self-reflection the underlying dynamics of how we learn through music and its application across disciplines. Such gatherings of seminal thinkers participating with faculty and students within the consortium community would serve as the model for qualitative research, and would provide an opportunity to create a national community, sharing the fruits of discoveries while envisioning innovative and dynamic new dimensions and directions for arts research.

The possibility also exists for the New England Conservatory Research Center to network with university research departments and centers in the growing academic community of the Music-in-Education National Consortium (MIENC). Collaborating in leading-edge qualitative research to illuminate the dimensions of human consciousness most relevant to understanding the processes underlying learning through music would harness vast stores of synergistic creativity for this work. This dynamic network of university research partners could also take on designing and developing the new multi-disciplinary training for student musicians. This could usher in a new era of educational transformation and academic dialogue.

Of extreme importance is that we discover new modalities for training artists and teachers in the self-reflective process *itself*. Gail Burnaford, a core member of the Music-in-Education National Consortium and Chair of Teacher Training at Florida Atlantic University states, “Action research further places teachers and artists at the center of the inquiry/research process. They are examining their own practices, they are not subjects in others’ investigations.”<sup>25</sup>

**How and why music enhances cognitive capacities:**

Much more research is being called for to identify why and how music impacts

cognitive ability in other domains. In her commentary to the Research Center at New England Conservatory, Dr. Wolf asks, “Why does involvement in music, theater, performance, visual arts spark engagement with the school, higher levels of academic performance and increased participation in community service? *Under what conditions* do the arts have these effects?”<sup>26</sup> She maintains that subtle answers to these questions will lead to more effective explanations of the value of arts education to policy makers. Dr. Wolf also recommends that we provoke new understandings of diverse cultures and connect classroom learning to the processes of invention, design and the search for quality used by inventors, performers, artists and poets.

The fruits of this research would bring forth the distinctions of the underlying dynamics and capacities that operate across disciplines. This would empower all of the existing programs while supplying the country (and the world) with much needed information, the “whys” and “hows” the arts accomplish what they do in the realms of cognition and perception.

**Bringing wellness into education—the therapeutic role of music for at-risk children in public schools:**

Barry Bittman, MD has found that musicians who work as therapists can transform the lives of cancer patients both subjectively (qualitatively) and objectively (measurable differences in immune system levels).<sup>27</sup> We should take note that Dr. Bittman’s results occurred only when led by music therapists. This indicates that there is a dynamic, physically measurable effect of the therapeutic relationship.

There is growing recognition that music programs can evoke therapeutic results, especially in children at risk. MUST in San Francisco, which provides music therapy programs to at-risk youth and trains educators in basic therapy techniques through the facilitation of drum circles, finds that, “students who received music therapy services improved their attendance and academic performance by more than 50%.”<sup>28</sup> The NEC Research Center can take on discovering *why* music therapy pene-

**THE VARIOUS FORMS OF RESEARCH NECESSARY TO FURTHER THE MISSION OF MUSIC IN EDUCATION SHOULD BE CARRIED OUT IN FORUMS OF INQUIRY—CONVENING FACULTY, STUDENTS, ARTISTS, RESEARCHERS AND VISIONARIES FROM DIVERSE FIELDS TO EXPLORE THROUGH SELF-REFLECTION THE UNDERLYING DYNAMICS OF HOW WE LEARN THROUGH MUSIC AND ITS APPLICATION ACROSS DISCIPLINES.**

trates so deeply into the lives of at-risk kids and addresses the causes of their being at risk,<sup>29</sup> and what order of the mentorship relationship would establish the same dynamics.

The Research Center can begin the self-reflective qualitative research to investigate the spiritual psychological infrastructures which underlie addictive, violent and self-destructive dysfunctions in children and the recognized relationship these have to the creative process.<sup>30</sup> The Center can discover if, how and why music has the power to significantly prevent or curtail these dysfunctions. The possibility of creating a

“preventive education” through music learning is also one of the most powerful rationales we have for the advocacy of music-in-education.

### Other research:

Through its newly formed Learning Laboratory School Network, the Consortium should also consider seeking clarity on: mentorship practices adapted and designed for classroom environments; the power of music to create environments which honor diversity, self-esteem, and environmental ethics; music’s ability to encompass and challenge the unique talents of the highly gifted; the qualities of a music pedagogy for elders; what empowers emotional intelligence in children; as well as modalities of musical memory, pitch recognition, and much more. For instance, how

does the “flow experience” relate to improvisation and to the underlying processes of creativity and how we learn through music? What are the relationships between artistic vision and scientific discovery and the congruence of athletics and arts experience?

*Why are you choosing to serve as Artistic Advisor to the Research Center at NEC? How do you intend to influence performing artists like yourself to get involved with this kind of work?*

For over fifty years I have pursued parallel careers in multiple dimensions of human endeavor. The evolution in each of these realms inevitably points to the imperative of music and learning through music in global transformation. Enlightened music mentorship and visionary education allow us to access some basic human core

of resonance with the underlying potentials in nature and human consciousness. Based on my work for more than a generation with hundreds of individual universities and communities, I have felt compelled to share these discoveries and possibilities with a visionary leading edge music education and research community. Working with a groundbreaking research center and a consortium of dedicated educators and their institutions creates the possibility for a synergistic collaboration to ground in reality our commitment to transform education by learning through music.

*What are your final thoughts for our readers who will be working hard for advancing music in changing times?*

Primarily to thank and honor every

teacher for all they are doing to bring music into the lives of our children, and to acknowledge them for the importance of their work. Teaching and learning through music will achieve what perhaps no other strategy for educational reform now on the table can hope to accomplish. By harnessing the intrinsic healing and transformational power of music and the arts, the MIENC and its Research Centers can lead the multidimensional work of creating new paradigms for what the synthesis and differentiation among higher education, arts organizations, and public schools must become. By fully honoring the gifts and intentions of the faculty of these organizations, empow-

ering them to realize their visions, we will create a new order of mentorship and curricula in music, which fulfills the comprehensive needs of the whole student while preparing them for multi-faceted work in the real world. This will serve as the dynamic model for the future of education in all fields of endeavor.

It is time for humanity to recognize visionary creativity and transformative education through music as a birthright. But in order for this work to be done as it should, there is much we need to know. The challenge is to re-imagine the very nature of education, to inspire creative prophets, poets and visionaries, awakening

talents to inspire and transform. Music written of divine contemplation and compassionate solace when deeply appreciated becomes a means for teaching and learning, for liberating young people to open their hearts and imagine a better life for themselves and this planet. Only by doing so will they let their lives sing. Science, engineering, social science and humanities all will have their due. But only as we recognize, pay tribute to and nurture a unique, visionary, harmonious way of being through music will a generation come of age whose lifework is a labor of love—love for their discipline, love for their fellow humans, love for the earth, and love for life. ¶

## SIDEBAR

### Musings on Lorin Hollander and “Spontaneous Virtuosity”

BY BRUCE BRUBAKER

#### SOMETIMES MUSICIANS HIDE BEHIND MANTLES...HOLLANDER IS HOLLANDER:

#### “WE MUST LEARN TO LEARN EVERYTHING THE WAY WE LEARN THROUGH MUSIC.”

The originator of the term “happening” Allan Kaprow urged taking down the boundary between art and life—“the line between art and life should be kept as fluid, and perhaps, indistinct, as possible...” Lorin Hollander has “lived” music and made music of life.

And so perhaps everything is everything. A few months ago, during my first week as a faculty member at New England Conservatory, I had an extraordinary far-ranging conversation with Lorin Hollander, in the Research Center for Learning Through Music office on the third floor of NEC’s Jordan hall building. (His thoughts on these pages only give a glimpse of the spontaneous virtuosity of his thinking.) During my first week as a student at the Waterloo Music Festival in New Jersey (about twenty years ago), I played in the festival orchestra that accompanied Hollander in a remarkable performance of Aaron Copland’s Piano Concerto. Ten years before that, standing in line at the circulation desk of the Des Moines Public Library on Grand Avenue, I saw (and then took home and heard) an LP recording — Hollander’s celebrated 1969 performance at the Fillmore East night club on a Baldwin electronic concert grand.

Sigmund Freud observed that a camera is an extension of the

human eye, a microphone an extension of the ear. We look at an anthill and see the natural world, yet how different is looking at a skyscraper?

Sometimes musicians hide behind mantles—“I’m a concert pianist.”—defining, and societally categorized. Hollander is Hollander: “We must learn to learn everything the way we learn through music.”

At the Broadway Barber Shop on upper Broadway in Manhattan, I used to get my hair cut by the barber known as Mr. Kay. He took customers in the order they arrived—no appointments. One spring afternoon, Mr. Hollander was right ahead of me. ¶

*Pianist Bruce Brubaker is known as a champion of contemporary American music, particularly the works of composers Philip Glass, John Cage and John Adams. His newest CD for Arabesque includes his transcription of part of Philip Glass’s opera “Einstein on the Beach.” Brubaker is the chair of piano at New England Conservatory.*

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<sup>2</sup> Berry, T. (1999) *The Great Work: Our Way into the Future*, 3. New York: Bell Tower.

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<sup>4</sup> Children’s Defense Fund <http://www.childrensdefense.org/data/eachday.aspx>. August 2004

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<sup>6</sup> Americans for the Arts: At-Risk Youth. Institute for Community Development and the Arts. <http://www.artsusa.org/education/youth.html>

<sup>7</sup> Berendt, J.E. (1987) *Nada Brahma: The World is Sound*. Helmut Bredigkeit, tr., 80. Rochester, VT: Destiny Books.

<sup>8</sup> Greene, B. (2004) *The Fabric of the Cosmos: Space, Time and the Texture of Reality*, 17. New York: Alfred A. Knopf.

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<sup>13</sup> Ibid.

<sup>14</sup> Scripp, L. Overview of Research on Music and Learning in Critical Links: Learning in the Arts and Student Academic and Social Development report (Deasy, Ed., 2004; aep-arts.org).

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<sup>16</sup> Egender, A. (1995). “Hearing People Through Their Pain.” *Journal of Traumatic Stress*, 8(1), 23.

<sup>17</sup> Ibid.

<sup>18</sup> Burnaford, G. (2003). Crossing Boundaries: The Role of Higher Education in Professional Development with Arts Partnerships. *Journal for Learning Through Music*, II, 51. Boston: New England Conservatory.

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<sup>20</sup> Booth, E. (2003). The Teaching Artist and the Artistry of Teaching. *Journal for Learning Through Music*, II, 18. Boston: New England Conservatory.

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<sup>24</sup> Eisner, E. *Journal for Learning Through Music*, II, 110. Boston: New England Conservatory.

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<sup>26</sup> Wolf, D. (2004) “Research on Learning In and Through the Arts.” Contextual Research Report for New England Conservatory of Music, 6. New York: Emc.Arts, LLC.

<sup>27</sup> Bittman, B., Berk, L., Shannon, M., et al. (2005) Recreational music-making modulates the human stress response: a preliminary individualize gene. *Medical Science Monitor*. See: [http://www.MedSciMonit.com/pub/vol\\_11/no\\_2/6567.pdf](http://www.MedSciMonit.com/pub/vol_11/no_2/6567.pdf)

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<sup>29</sup> Americans for the Arts: At-Risk Youth. Institute for Community Development and the Arts. <http://www.artsusa.org/education/youth.html>

<sup>30</sup> Grof, C. (1993).