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A conceptual model for literature-based musical education.

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A CONCEPTUAL MODEL FOR LITERATURE-BASED MUSICAL EDUCATION

A Dissertation Presented

by

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DEDICATION

With profound gratitude to my family: Alta, Cameron and Karin, Lynnea and Berton, Jared, Justin, Marisa, and Ginger and Greg, who instead of ever complaining about my long physical and mental absences, were supremely cheerful, supportive and loving.

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ABSTRACT

A CONCEPTUAL MODEL FOR LITERATURE-BASED MUSICAL EDUCATION

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This study sets forth a procedural model for general music education which is intuitive, principle-driven, learner-centered, co-constructed and literature-based in contrast to any pre-designed method, yet encompasses the teaching traditions of Dalcroze, Kodály, Orff, and Willems, among others. The model is constructed according to fundamental principles of the acquisition of musicality discovered or elaborated by selected scholars from musical and related disciplines. These principles focus on how the teacher and the learner may interact with music as a body of literature for optimum musical learning in purposeful yet flexible ways.

This search for undergirding principles is driven by several questions arising from observations of musical teaching and learning experiences. These questions may be grouped into the following categories: 1) Potential relationships of music to other subjects in the curriculum; 2) Notions of talent, aptitude and intuition in the development of general musicianship; 3) Underlying cognitive processes by which musicality is developed in learners; 4) The nature of musical meaning, how it is constructed by the learner, and how teaching should facilitate this construction; and, 5) Issues of conceptualizing and organizing music as a body of literature in order to enable efficient construction of meaning.

Data undergirding this study were gathered primarily through comparative analyses of key writings and musical compositions or collections, qualitative interviews of music pedagogues, and exploratory studies. These data were triangulated, then cross-compared to parallel issues in other disciplines, especially cognitive psychology and language literacy acquisition.

The resulting interpretation of this information suggests that music is co-equal with other subjects, a position which implies redefining the place of music in the general school curriculum. Further, all learners are capable of some degree of musical acquisition, regardless of native talent. Additionally, learners become musical through three interdependent operations: Expressive/Experiential, Aural and Literate. The deployment of these musical operations is overarched by an artistic supra-mental intuition which can be greatly cultivated by the use of carefully organized musical literature of high quality. Musical operations are especially facilitated through observance of principles of aural and visual predictability applied to musical literature.

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CHAPTER I

CONSTRUCTIVIST MUSICAL EDUCATION

Purpose of Study

"Music must not be approached from its intellectual, rational side...The way should be paved for direct intuition..." (Kodály in Bónis, 1964, p. 120). This statement by one of several important composer-educators provides the genesis for this dissertation which seeks an answer for how it is possible to teach and learn music intuitively.

This study is designed to develop a conceptual model built upon the fundamental principles governing the musical construction of meaning. The importance of doing this bears on whether or not musical ways of knowing and meaning could and should be considered equal to and integral with other cognitive areas of general education for all learners. It is anticipated that if successfully discovered and codified, these fundamental principles may serve to balance and integrate general educational curricula in a way which is more inclusive of the multiple intelligences and literacies of learners than at present.

Statement of Problem

Commonly encountered educational jargon reveals a hierarchical conceptualization of certain subjects in the standard school curriculum. For instance, there are the "core academic" subjects and "the arts"; there are "the basics" and "the frills". Some researchers ascribe this separation to a "dominant pragmatism" which results in arts education being particularly vulnerable to budget cuts (Shebani, 1987, pp. 3-5). Yet, no less an important architect of modern American educational philosophy than John Dewey (1916) detailed the rationale for equalizing the arts with all other disciplines:

"They are not luxuries of education, but emphatic expressions of that which makes any education worthwhile" (p. 237).

Recent educational history reveals a recurring cycle of barely funding the arts during periods of economic prosperity and underfunding or eliminating them partially or completely during times of financial duress. Perhaps the arts are particularly vulnerable to budget reductions because the artistic process eludes quantification in a profit-driven economy which places a burden on schools to so justify their curricula. Even more significant may be the fact that arts educators have also failed to make clear the value inherent in their disciplines. This may have followed from the lack of purposeful, unified curricula and teaching traditions on the parts of professionals such as music educators. All of these factors may have sent mixed signals, though certainly not intentionally so, to the educational establishment.

These trends have placed music education in a precarious and often temporary position in contemporary American education. Though many studies have been conducted within each of the arts to justify their educational necessity using rationales which have great significance to arts educators, this present study views music education in terms which have significance for the general educational community. A case for the stable and permanent inclusion of genuine musical education in the curriculum is made in this dissertation by looking in-depth at the acquisition of musicality for its own unique influence on human development and its ultimate value to holistic education.

The related work of Nelson Goodman, Suzanne Langer and Howard Gardner suggests that this value can be found in their common assertion that each of the arts is a discrete way of knowing, meaning and representing and therefore has a literacy and a literature which can be written, read and

communicated over time and space. It also turns out that intuition plays a predominant role in musical ways of knowing, thereby paving the way for its inclusion in the teaching-learning model described in this dissertation.

Therefore, the problem which this dissertation addresses is how musical education may be carried out as a way of knowing in an equitable relationship with other essential school subjects. Of particular interest to music educators is how the principles discovered through this study play out in such a way as to avoid any fixation on a method. Accordingly, the conceptual framework described here leaves ample room for highly varied and personal interpretations by teachers and learners. Perhaps other arts disciplines may also benefit from the establishment of this investigative model.

Background

A certain intuition has been guiding musical innovation for at least a thousand years of Western history. This influence is easily traced back to an extraordinary synthesis which provided the key to universal literacy in music. This happened in 1000 AD when Guido d'Arezzo and his contemporaries worked out a dual phonetic and pictorial representation of musical sound. His discoveries and their subsequent widespread application enabled the recording of songs previously restricted to oral transmission as well as the creation of new songs which could then be read, or performed, by others.

Guido's system is still in use today though numerous musical refinements, enhancements and subsystems have been layered onto his original system in order to represent the various nuances and progressive developments of the different stylistic periods of music history. Paralleling this constant renewal of the notational system has been a certain preoccupation with finding the pedagogical means for developing musical literacy in the general population (Williams, 1968, pp. 63-71).

Composers have been especially committed to promoting interest in education for musical knowing and in finding effective teaching strategies for bringing it about. Guido began this tradition by not only developing a way to read and write music, but also a way to teach it through singing. Other composers pursued similar goals in their own locales and eras: Thomas Morley, the Elizabethan Renaissance madrigalist; Antonio Bertalotti, the Baroque singing master; Robert Schumann, the Romantic Era composer-philosopher; John Curwen and Sarah Glover representing the English choral tradition; Émile Jaques-Dalcroze, Frank Martin and Edgar Willems of Switzerland; Carl Orff of Germany and Zoltán Kodály of Hungary. Though this list is incomplete and only names a few composer-educators, there was a constructive collegiality among those who were contemporary with each other and an acute awareness of the foundation laid by those who had gone before.

Certain of these composers dedicated a substantial amount of their opus to pedagogical works intended to help learners progress from singing simple melodies to the choral and instrumental masterworks, and some among them even contributed to the body of masterworks as well (Ittzés, 1972, p. 1). Several commonalities characterized the pedagogical output of at least four of these composers: Jaques-Dalcroze, Kodály, Orff and Willems. They highly valued both the musical content and societal influence of authentic folksong. The nuclear works of each of them continue to inspire the research, compilation and composition of more musical literature for children of a type which blurs the lines between folksong and art music. Each of them has created a literature-based teaching philosophy which also continues to evolve in the hands of educators, composers and conductors. Most relevant to the concept of intuition overarching this dissertation is the fact that each of these four composers have perpetuated and subtly refined the legacy of the dual

musical representational systems left them by Guido. And, as is demonstrated in this dissertation, all of these composers were bound by strong constructivist leanings, whether or not they were conscious of it.

The affinity of composer-educators for folksong treats the native singer as a composer and regards his or her culture's oral tradition as genuine musical literature, whether captured in notation or not. This equal treatment of both narrative song (Grainger in Pears, 1967) and composed music as the literature of music serves to closely align their kind of musical education with whole language education and the constructivist framework undergirding it. The concept of literature-based musical education described in this dissertation also partly derives from this association.

The principles of constructivism may well be the unifying framework needed to help music take its place as an equal partner with the so-called "core subjects". Constructivism accounts for learning, knowing, meaning and representing as the product of the interaction of a learner's mind with the environment, the people in it and the culture they create. This perspective on cognition is not absolute, but relative, and is especially concerned with the processes and structures of the mind and of concepts (N. Goodman, 1978, p. x). This relativity is particularly well-suited to music, which is formed of highly relational sonic structures the understanding of which requires equally relative hearing and thought processes.

This study therefore presents an operational paradigm for how learners may become proficient in the construction of musical meaning in its many-sided relationships. It reports on a cumulative and generally mutually complementary developmental effort by composers to find a pedagogical path to musical knowing. This same path is compared to its constructivist counterpart in literature-based language education. The demonstration of this

unifying constructivist tradition in music may help to circumscribe into one whole the various pedagogical "methods" now in vogue and about which many music educators are polarized.

Delimitations

This study is not experimental in design or applied in nature. In this study, a theoretical basis is constructed in order to clarify how musical literacy is achieved. The central hypothesis will not be empirically validated within the scope and intent of this research.

Though acknowledging the existence of a behaviorist strand represented in certain musical education systems, such as the Gordon and the widespread and popular Suzuki Talent Education, This dissertation is primarily concerned with those having clearly constructivist underpinnings, and will not draw on behaviorist thinking represented in certain musical education systems such as Music Learning Theory and the widespread and popular Suzuki Talent Education.

Definitions

Musical Literacy

Musical literacy is considered as circumscribing narrative song which may not have been notated as well as music in print. In other words the oracy and literacy of musical literature is considered. This definition of musical literacy will mostly refer to the vocal aspect of musical production while recognizing that instrumental instruction is usually a natural extension of most pedagogical systems. Further, the term "musical literacy" is used within the context of the solmization tradition deriving from the mainstream of Western musical history.

Solfeggio, Solfège, Sol-fa, Solmization

This system, dating from Guido's time, is universally identified as the do-re-mi system or solfeggio in Italian. It is also interchangeably called by its French name, solfège, or its English name, sol-fa, which is alternately spelled sol-fa. To read in this system is called solmization. Authors often use more than one form of the term in a single writing.

Review of Literature

Literature has been searched to inform the three theoretical foundations of this study: 1) The history, philosophy and practice of musical instruction through the perspective of composer-educators; 2) The representational capacity of music as a way of meaning and knowing within the theories of multiple intelligences and multiple literacies; and, 3) The fundamental principles of the constructivist way of thinking about the acquisition of literacy.

Historical sources, philosophical writings and pedagogical compositions were analyzed for information about how the reading and writing of music was first conceptualized and refined up to modern times. Supporting, clarifying and interpretive insight was also sought from contemporary commentaries on these efforts. The same subject was viewed through the more recent writings of key composer-educators about the crossover between oral-tradition folksong and literate musicianship.

Several modern scholars have investigated how the arts have meaning, literacy and literature. These studies in cognition and symbolic representation provide detailed information on how the arts interrelate yet are discrete; how they are like language yet are not. Most importantly, these studies identify the unique type of knowing which each art embodies and which cannot be expressed by any other way, language included. This thinking about the arts as ways of knowing/meaning is solidly grounded in the

foundation laid by cognitive scientists who first described the phenomenon of the construction of meaning. Therefore, important sources of these two kinds were also investigated to inform this study.

The above review of literature admits one more consideration in this study, that of the whole language philosophy as a parallel theoretical construct. Pivotal works in the theory of literacy acquisition from this very important component of the constructivist stream will be compared to what has been happening in musical literacy to help in the formation of a theory of literacy acquisition in music. Therefore, several writings by whole-language theorists have been analyzed in search of underlying principles needed to shape a musical metaphor for how thinking, speaking, reading and writing can be intuitively taught and learned.

Methodology

The specific steps taken in this study can be grouped into the following major tasks: 1. Establishing a historically-derived theoretical basis for musical literacy; 2. Comparing this theoretical foundation to what is now known about literacy and cognition; and, 3. Synthesizing a cohesive instructional model for the acquisition of musical literacy. The breakdown of specific steps for each of the tasks is elaborated as follows.

Establishing a theoretical basis involved not only distilling evidences from the composer-educators' own written discourses but also from the sources they credit. Some of their key sources were scanned for important formative principles. Secondly, scholars who have continued the work of the four main composer-educators have been either interviewed or contacted through correspondence. Their views have been included in the triangulation of data. Also included in the analyses informing this model are data from three

exploratory studies dealing with specific aspects of musical teaching and learning.

The foundation principles obtained through triangulation were continuously cross-compared to parallel issues in whole-language theory and a few other extra-musical disciplines with constructivist underpinnings, such as cognitive psychology, psycholinguistics and semiotics. These comparisons proved to be most helpful in defining how the acquisition of musicality proceeds. The results were also continuously viewed through the lens of classroom practice, graduate coursework and current pedagogical literature. Conclusions are reported in the dissertation as a comprehensive model for literature-based musical teaching and learning.

Preview of Dissertation

This dissertation consists of five chapters, three appendices and a specialized bibliography representing several disciplines. Chapter One details the statement of the research problem. Chapter Two contains a literature review designed to discover the foundations underlying constructivist musical education. In Chapter Three, the relationship of the four principle composer-educators to constructivist foundations are explored. Chapter Four is an in-depth exploration of principles and setting forth of an instructional model. The dissertation concludes with Chapter Five which locates the model in the current state of American general musical education with specific recommendations for implementation and further research.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Several streams of thought feed into the formulation of theories about what music is and how it should be taught in relation to how people think and feel. In order to lay the foundation for a general model of literature-based musical education, the first part of this chapter will explore a definition for music useful to the purposes of this dissertation. This definition will include views about the learnable content of music, what that content means and how it is symbolized. From this basis, the exploration will broaden to include views which connect poetry, movement and art - among others - with musical issues.

Since the complex relationship between language and music is too apparent to be ignored, this review next inquires into its many facets. These facets include the influence of rhythm on language and music; the concept of rhythm as an entity which is independent of either language or music; the influential combination of language, movement and rhythm on cognition and the extraordinary combination of these three elements in authentic folksong as a body of literature.

Combining a definition for music with its peculiar relationship with language leads to an investigation of music as a way of knowing independent of, but interactive with, other ways of knowing, as suggested by Howard Gardner (1983) in his Theory of Multiple Intelligences. Studies about the influence of music on brain hemisphericity coupled with the nature of non-verbal thought and then specifically musical thought shed further light on the role of music in the interrelatedness yet independence of different ways of knowing.

The next subsection details implications for education by discussing how musical thinking exerts an integrative influence on the development of personality and cognition and thereby points to the existence of a general capacity to be musical which is inherent in all learners.

The final section of this literature review derives from the conjunction of two historical influences on the thinking of the subject composer-educators. The most ancient is Guido of Arezzo, whose innovative work in musical notation, notational literacy and their necessary pedagogical systematization is crucial to understanding the contribution of the modern reformers of musical education. More recent is the enormous pedagogical influence of Heinrich Pestalozzi on modern musical education.

It seems worthwhile to point out that a striking sort of constructivist thinking emerged from the literature which shapes or supports the thinking of each of the composer-educators whose theories and philosophies provide the substance of this dissertation. But just as striking was the appearance of these same original sources in some key writings in modern developmental psychology. Besides the common heritage of Guido and Pestalozzi, one of the most universal original sources in modern writings bearing on this research turns out to be Karl Bücher's (1909) Arbeit und Rhythmus, or Work and Rhythm. This singularly influential work is referenced by Jaques-Dalcroze, Kodály, Orff, Willems, Langer and Jiranek. Through Langer, Bücher's ideas are even carried forward into the work of Howard Gardner.

Defining Music

For the purposes of this study, the emotional, affective definition for music will be sought rather than the purely physical, or acoustic definition. Suzanne Langer faults attempts to explain music through the physical, psychological and physiological aspects of its acoustical properties. Langer

(1953) affirms that sound alone does not make music. Rather, she defines music as the "illusion begotten by sounds" (p. 105).

Ernest Ansermet (1971), founding conductor of the Orchestre de la Suisse Romande, says that "music is feeling or it is nothing" (p. 213). This same physicist-turned-musician also insists that music "**is** feeling ...experienced in tonal structures" (p. 213). Langer (1953) agrees with Ansermet (1971) that music does not express feelings which are already established: the latter says that each musical work brings to light the human capacities to feel (p. 138); the former calls music "a tonal analogue of emotive life" (p. 27). Building upon this way of thinking, Willems (1954) sees a profound connection between the three elements of music and human nature: 1) rhythm, derived from movement, represents physiological life; 2) melody, derived from feeling, represents affective life; and, 3) harmony, cerebrally constructed, represents mental life (p. 34).

Some musical scholars agree with Langer that music is "a logical form of emotion" but also point out that music is also more than just that (Focht in Stefani, 1975, p. 246). Supicic (in Stefani, 1975) states that each musical work "must have a meaning which animates it" (p. 251).This reiterates the question of what music means and Ansermet (1971) points to the fact that at least before the rise of Twentieth Century formalism and "the serial doctrine" of twelve-tone music, composers relied on an "internal determination" to construct the "external event" of their compositions (p. 212, p. 221). He also chides certain kinds of "new music" composers for having destroyed the relationships between sounds which carry meaning to the listener. Genuine music, he adds, is organized by "internal affective tensions" (pp. 221-222).

Adding another dimension to this summative definition - that music is orderly, preconceived tonal structures representative of sentient, affective life -

is the "organizational role of rhythm" first described by Bücher and elaborated upon by others (Jiranek, 1975, p. 30). This perspective on rhythm explicitly includes its origin in physiological and social meaning.

As for musical meaning, prominent philosophers, cognitive scientists, composers and theorists credit Suzanne Langer with having successfully worked out "a cognitive theory of music" which eliminates the necessity of forcing music into a semantic theory (Focht, 1975, p. 247). Elaborating on Langer's views, Focht explains that musical meaning is clearly the result of a co-constructive process: "Its subject is musical cognition, the cognition both of musicians themselves and equally of their listeners: by a process of symbolization, an emotion is discovered and cognized, logically modified, and as such fixed, expressed through an interpretation, communicated and transmitted to the public" (p. 247).

The Content of Music

A great number of philosophers, psychologists, composers, musicians and scholars from other disciplines have speculated on the nature of musical content. The essential findings from some of these sources - those deemed necessary for the foundation of this dissertation - are discussed below. These more theoretical positions tend to treat music as something rather isolated from its relationships with language and movement, although these will also be discussed in other sections of this review.

Speaking about the content of music, Langer (1953) says that "Music makes time audible, and its form and continuity sensible" (p. 110). Langer's use of the key word "audible" points to the distinguishing characteristic of music, and her other key word "sensible" underscores the dual nature of musical content: that which can be perceived by the senses and that which makes sense. Czövek (1979) says that "only music can explain itself" because

it follows certain laws of auditory construction which rely on the dimensions of rhythm, melody, beat and form to make music out of sounds (p. 19). Or to put it another way, she says that "sounds must conform to a stylistic system for musical form to occur" (p. 20).

In spite of these convenient explanations, all agree that musical content is an elusive entity. Czövek (1979) recognizes that becoming aware of the content of music requires a certain spiritual sensitivity, an active imagination and a "receptivity to subtle distinctions" (p. 39). Further, she sees the perceiver of musical content as one who is able to develop "layers of meaning" from it (p. 39). Eisner (in Boyer, 1987) finds that artistic learning is "the farthest thing from an algorithm", requiring high-level cognitive processes such as imagination, sensibility, serendipity and considered judgment in order to discover the hidden content of art (p. 3).

Adding to an understanding of the self-referring nature of musical content, Supicic (1975) points out that music does not express a concrete content or reality, but rather "that which is musically expressible" (p. 250). He elaborates this point by adding that musical expression is not just limited to concepts and language as means of expression (p. 252). But music does apparently also have significance, since the psychological impact of musical expression depends so much on the composer who must transform reality through his creative process (p. 250).

Ansermet (1971) pursues this line by saying that music is not a medium, but that it "carries within itself its content" (p. 213). Further, this content, being what is expressed, such as a melodic line, "is just the affective significance felt by the composer as well as the listener in hearing this melodic line" (p. 213). He adds that "the truth of the music...resides in the fact that the music only

communicates to the listener what the tonal structures signify, and that its tonal structures only signify the activity of the composer's feeling" (p. 223).

Supicic (1975), quoting Bahle, begins to unravel how it can be possible for feeling to be signified in the sense of meaning something: "Feeling is as endowed with creative power as it is rich in forms and formal aspects which can be musically expressed or represented" (p. 250). Further explaining this concept, he goes on to say that feeling is the determinant of musical form because somehow the creative aspect of psychological life is able to relate itself to musical form as a means of expression. Meyer (1956) is able to explain this more concretely by stating that the psychological organization of music is determined by cultural and personal experience and knowledge. This organization is constructed on the principles of pattern perception which depend on "the Law of Good Continuation" of melody, rhythm and meter; "Completion and Closure"; and, "Shape" (p. 91).

This musical sense of order is reflected in the Latin proverb that "without knowing music no culture is complete" (Dobszay, 1992, p. 83). Quite simply, music is a mirror of the order of the universe and the harmony between the human body and spirit. Music makes tangible those proportions which exist throughout the universe and their arrangement according to weight, number and measure. Admitting that this notion has been with us since at least medieval times, Dobszay says that it still holds true that music "reflects order" and "creates order" as a product of mankind and it therefore occupies a plane above that of mere entertainment (p. 83; see also Hollander, 1961, pp. 20-43).

A powerful unity of agreement about the structural content of music occurs among these same scholars being discussed. For instance, Langer (1953) says that the only "content" of music or the other arts is the form which is "built up out of relations" between the elements of the structure (pp. 51-52)

and that "significant form is common to all works of art" (1942, p. 204). "There is no meaningful music without formal relationships", concurs Czövek (1979, p. 14). Meyer (1956) also recognizes that musical understanding depends on grouping sounds into patterns and the relationships of patterns to one another (Meyer, p. 6). Dobszay (1993) focuses the discussion with his sure statement that "Music is relationships - nothing other. An organic unity of these relationships is the content of music. So there is no reality which you can find as an equivalent of music". This view is reinforced by Zuckerkandl's (1956) claim that music is pure order which is freed from all relations to things (p. 242). Music is self-referring, as explained by John Dewey's (1934) notion that the particular power of music is to employ "formal relationships" to order sounds "in reference to others so that each is a summation of what precedes and a forecast of what is to come" (p. 239).

Langer (1953) probes even more deeply into this issue of musical relationships by linking experienced feeling to musical structures which move in a "realm of pure duration". This duration is "lived" or "experienced" time, the passage of which is only measured "in terms of sensibilities, tensions, and emotions". This musical motion in time is the "primary illusion of music. All music creates an order of virtual time, in which its sonorous forms move in relation to each other...only to each other, for nothing else exists there" (p. 110). Ansermet (1971) follows up on this by specifying that one of the modalities of musical structure is rhythm which determines the durations of various tensions in a musical work. These durations, in turn, reflect the activity of human feeling from within and find their signification in music through the formal structure of music (pp. 138-139). He calls these "affective tensions" and groups them into four categories which depend on our position in temporal existence: active extroverted, passive extroverted, active introverted and

passive introverted. He explains that these interact with the experiencing of musical structures to make our feelings known to us (pp. 137-138).

Taking another approach to the temporal and structural features of music, Meyer (1956) states that these illusory musical structures become meaningful when they are able to "point to, indicate, or imply something beyond themselves" (p. 34). Speaking as a playwright, Vaclav Havel (1990) reinforces this notion from his own experience: "Every work of art points somewhere beyond itself; it transcends itself and its author" (p. 198). He explains this by stating that the structural events in works of art combine to create a sense of mystery which moves the human mind to see more deeply. Havel readily admits that he "constructs" his plays and does so in ways that "deliberately make their structures easy to grasp". He says that he achieves this by stressing, revealing and making them obvious and that his sole purpose for doing so is to convey "a certain meaning" (p. 192). This nicely fulfills the principle that the human mind takes pleasure in beauty especially when its sense of design and love of pattern is activated (Campbell-McInnes, 1939, xiii).

To be more concrete, and by way of summary about the content of music, Jiranek says there should be an accounting for its acoustic nature. Acoustically, music carries certain information to the hearer: 1) A sequential orientation in time; 2) an orientation in space with its dynamics and intensity; and, 3) an orientation in timbre which identifies its source (Jiranek, 1975, p. 28). He expands this to also include certain "anthropological constants": 1) "Ascension as the equivalent of growth, descension as the equivalent of decline, and linear inertia at the same pitch as neutral behavior"; 2) Tension and release; 3) The "light and darkness" of sound indicated by its "substantiality" [weight] and its "intensity" [amplitude]; 4) The temporal

human cognitive activity, what distinguishes the arts is their use of certain kinds of symbol systems in idiosyncratic ways (p. 99).

Suzanne Langer discusses these differences in symbol use at length. Her former student, Howard Gardner (1989a), explains that her particular contribution was to validate artistic forms of thinking as equals with the others because she perceived the richness of the different types of symbols used and the cognitive processes "engaged by these symbols" (p. 42). Langer (1942) herself explained that we are able to build this "non-discursive symbolism" through our senses in order to conceptualize simultaneously-occurring sensations into "concrete things" (p. 93). She details her reasoning by pointing out that in language, meaning is sequentially constructed through discourse but that in the arts, everything is presented at once and the process of construction occurs by understanding the relationships of the parts to the whole. She terms this peculiarly artistic kind of semantic as "presentational symbolism" in contrast to the "discursive symbolism" of written language (p. 97).

Focht (1975) is able to elaborate somewhat on how the senses interact with symbols in music by showing how emotion encapsulated in music is orderly and presented [not represented] as opposed to the random emotionality of life (p. 246). The resulting symbols do not have to rely on logic, language or their discursive symbols because in artistic thinking "...symbols gain a concrete meaning only if they continue to refer to a perception" (Bolles, 1991, p. xix).

Vitanyi (in Stefani, 1975) sees the musical sign system as varying from language in two particular ways: the unique relationship between music and signification in general and the equally unique relationship between the musical sign system and mathematical proportions (P. 197). Another of

Gardner's mentors, Nelson Goodman, also saw specific differences in notational systems. Goodman saw some relationships between the symbolic systems of music, dance and mathematics, but saw painting and sculpture as actually completely disobedient to the syntactic and semantic requirements of discourse (Gardner, 1989a, p. 67). As Gardner puts it, the cognitive processing of words as symbols might be termed "digital" and pictures and shapes more "analog" in character (p.67).

Goodman (1978) was able to analyze how the symbolization within an artistic work qualifies it as a work of art. First, there must be a differentiation between the symbols used. Then, there must be differences in certain respects between these symbols. Also, the many aspects of a single symbol must each have significance. If these other features are present, then symbols within an artwork may possess metaphoric or literal properties. The last qualification is that the separate symbols within a work of art must perform interactive and integrating functions relative to the work as a whole (p. 68).

The foregoing conclusions allowed Gardner (1989a) to offer a general theory of artistic symbolization which includes four categories of symbol use: "...the conveying of mood (expression); attention to the fine details or texture of an object (style); the arrangement of elements with attention to their effects on one another and on a work as a whole (composition); and the communication of multiple meanings (ambiguity or layers of significance) (p. 99). This latter characteristic is one of the real hallmarks of music, for, as Erna Czövek (1979) points out, one of the ultimate tasks of musical knowing is unraveling its "polysemanticism", or diversity of meaning (p. 22). Music is simply not "straightforward", she continues, and in fact, the less straightforward a musical work is, the better it is. Speaking as the musical artist she was, Czövek cannot resist stating this same principle metaphorically: "...It is characteristic not only

elements of "tempo", "mobility", and "speed" of sound; 5) "Rhythm" and "meter"; and, 6) The general "musical modeling" of breath and heartbeat (pp. 29-30).

Musical Meaning and its Symbolization

The illusory nature of musical content carries over into what it means and how that meaning is represented. Oddly enough, an analysis of the literature suggests that it is almost necessary to find out how music is symbolized before the question of what it means can be answered. Focht (1975) says this is because of the immediacy of music, which "...acts most directly...upon sensitivity, receptivity to feelings" (p. 248). Further, if tones were symbols by themselves, and because the standard definition of symbols is that they always carry a specific meaning, music would no longer have its distinguishing immediacy". Focht further explains this by recalling that music "can exist even without any kind of subject...without any possibiity of signifying, denoting or symbolizing anything..."(p. 248). Because symbols are substitutes which stand in place of something meaningful, they cannot be reconciled to the "...direct approach of music..."(p. 248).

The foregoing leaves no choice but to infer that musical symbols have a different function than semantically-oriented symbols. This conclusion is substantiated by Peterson (in Rockefeller, 1977) who suggested that representational systems may be linguistic, mathematical, scientific or even artistic (p. 57). Howard Gardner (1989a) supports this conclusion because he sees the arts as certain "ways of knowing" which use different kinds of symbols to stand for things and to express moods and feelings without referring to a physically tangible object (p. 98). This is seconded by Zuckerkandl (1956) who calls music the action of forces we hear without any correlation to material phenomena (p. 56). Therefore, though the use of symbols is universal to all

of music but of every art that when viewed or listened to superficially, they do not offer up their charms on a silver platter" (p. 19).

This exploration of the definition of music has come around again to the elusive and relative nature of music. This relativity is "indispensable to art. There is no absolute art, rather, it is dependent on dualities which make it rich in possibilities" (Willems, 1954, p. 66). Additionally, this relativity is not amorphous but purposeful and proportionate, for, as Langer (1953) states it, a mere arrangement of elements does not make a work of art. However, if something arises from an arrangement of elements which was not there originally, it becomes a "symbol of sentience" (p. 40). We have now arrived at having explained what Langer said before, that real music has significant form, which makes it itself a symbol - a highly articulated perceptual object, capable of expressing what language cannot: the life of feeling, motion and emotion (p. 32).

Langer's concept of significant form is elaborated in at least one sense by Lerdahl and Jackendoff (1983). They derived a generative music theory from Chomsky's theories of transformational grammar (pp. 1-11). Their generative music rules are classified into two orders: "well-formedness rules" and "preference rules" (p. 9). These two orders account for not only meaningful structural relationships but also for the emotional and affective investment of the musician. Lehrdal and Jackendoff are careful to point out that their in their construct, musical grammars are substantially different than those of language (pp. 5-6).

Having established music as a self-referring object within itself, which employs symbolic systems in specifically artistic and ambiguous ways which have their own rule systems, we can now begin to discover what music means through its symbols. Once again, Langer (1953) sets the pace for the

discussion: "...what art expresses is *not* actual feeling, but ideas of feeling; as language does not express actual things but ideas of them. Art is expressive through and through - every line, every sound, every gesture - and...it is a hundred percent symbolic (p. 59). Musical expression is not necessarily self-expression, but the "formulation and representation of emotions, moods, mental tensions and resolution...a source of insight not a plea for sympathy" (1942, p. 222). Focht (1965), who seems particularly keen on following up on Langer's acclaimed insight, says that "music 'is about' emotions, the emotional is not in it and does not reside in it, but is thought of and symbolically represented - it is an object" (p. 247).

Zuckerkandl's (1973) view on this phenomenon is that music actually accesses a "layer of meaning" which he characterizes as a "stratum of reality" where tonal relationships and inner human meaning meet (pp. 41-43). He goes on to specify that this meeting place is an actual dimension of being, explainable as "spatial depth", an extension of thought as real as more immediately apparent musical surface features (p. 49). This derives from Zuckerkandl's postulation that our musical experiences cause us to re-evaluate our fundamental notions of time, space and motion, out of which musical relationships are constructed (p. 74). In his own words, "what the tone expresses is not the subject but the interpenetration of subject and object. Music does not thrive at the expense of rationality. Music originates, grows and reaches its culmination within human rationality, together with it, not outside it or against it" (1973, p. 76).

Two rather global statements bring closure to this discussion about what music symbolizes on one hand and open the doors to another, that of style, on the other. Dobszay (1993) says that language has set definitions for its signs and what they mean, but that because music does not possess set

definitions for its signs, it is not a language and its structural elements are capable of having entirely different meanings in differing stylistic contexts. Langer's own mentor, Alfred North Whitehead (1929, 1957), says of style that it "is the last acquirement of the educated mind; it is also the most useful. It pervades the whole being" (p. 13). His elaborated definition of the sense of style is the "bearing of one set of ideas on another", or as he also says it, "that eye for the whole chess-board" which is the result of a special study of the structure of ideas and their relationships to each other (p. 13).

Relationships between Music and Language

One cannot read very far into the literature about what music is and the meaningful content it carries without finding a good many references to language. Indeed, Zuckerkandl (1973) said that "music...is...the other power which, along with language, fully defines man as a spiritual being" (pp. 2-3). This sort of reference immediately raises the question as to whether or not music and language are the same or similar [Zuckerkandl goes to length to explain that they are not], and if music is truly some kind of universal language. Gardner (1983) looks extensively at this question in his writings and concludes that although music and language both operate in the oral and auditory mediums of expression and perception, where they really unite is that neither is dependent on physically present objects (p. 98).

Gardner (1982) formulated that "Both music and language are auditory experiences in which discrete elements unfold over time in accordance with certain rules" (p. 91). Others agree that there are parallel generalities between the structures of music and language (Sundberg and Lindblom in Stefani, 1975). Some of these generalities may be very "language specific" and others "may be valid only for certain styles of music" (p. 123). Additionally, since there are linguistic universals for all languages, there may be some for all styles of

music, but Sundberg and Lindblom are also quick to point out that there may also be very few universals which apply to both music and language. These same theorists suspect that the phenomenon of "hierarchical constituent structure", a language universal, is applicable to at least some styles of music (p. 124).

Suzanne Langer (1942) strongly cautions, however, that although the constituent elements of the various arts can be combined into meaningful complexes as well as words can, the arts are governed by laws which differ from the laws of syntax which control language (p. 93). On this point, Baroni and Jacoboni elaborate that because spoken language has precise references to meaning and music does not, any parallelism between the two is weak; "Rather than of grammar one should speak of [musical] stylistics..." (Baroni and Jacoboni in Stefani, 1975, P. 126). They further explain that musical stylistics is very much more comprehensive and pervasive than literary poetics and is therefore much more difficult to define. Other semioticians agree that linguistic models are not comprehensive enough for all of the facets of music. Upitis (in Peery, 1987), for instance, says that though helpful, "the linguistic model cannot fully account for rhythm processing. The analogy between language and music, both with their respective deep and surface structures, is...only an analogy" (p. 57). In this same vein, Vitanyi reminds fellow semioticians that "...musical science need not depend on linguistics, on the contrary, traditional functional analysis of music preceded the method developed by Chomsky by more than a century" (Vitanyi, 1975, p. 198).

Like language, "Music is definitely a process of communication", a matter of 'informational schema' (Stefani, 1975, p. 11). Stefani further hopes that studies of music as a communicative system will be "sensitively distanced"

from the linguistic model which has often been imposed on music (p. 11). Jiranek (1975) brings up other aspects of the music-language parallel problem by describing the double influence of language on music as not only the text itself, but the "emotionally tinged subtext" of the "intonation of language" (p.30). He cautions that as in language, an overreliance on reducing the emotionally expressive possibilities of music to "several basic syntactic linguistic formulas" is a great error which denies the variability and wealth of the emotional subtext (p. 30).

Though conceding that syntax might play a part in the analogy between music and language because music is capable of an "orderly arrangement of tonal and rhythm elements", Holahan (in Peery et al, 1987) concludes that there is no musical analog for semantic meaning in language (p. 98). Gardner (1983) goes right to the core of the matter by saying that music and language are most unalike in the area of semantics (p. 125). Further, "the whole semantic aspect of language is radically underdeveloped in music" as is the concept of rules of grammar (Ibid). Kneif (in Stefani, 1975) - echoing an earlier citation of Czövek - adds that music is inherently polysemantic because it is not concerned with the transmission of the kind of immediate information carried by speech or the written word (p. 212). As a result, even musical symbol systems seem to observe the laws of polysemy which would not be tolerated if music were actually linguistic in structure. In fact, Kneif sees that polysemanticism is one of the very fundamental properties of music, in which language only plays a limited role (p. 211).

The foregoing does not advocate well for the validity of the semiotic study of music, the fundamental notion of which is that music is a language and that there is musical discourse (Baroni and Jacoboni, 1975, p. 125). Many scholars do, in fact, challenge the existence of musical semiotics because

regular semantic principles do not seem to apply (Kneif, 1975, p. 208). Even musical semioticians struggle with how dependent upon linguistic theory they are and whether that dependency is appropriate or even applicable to the complexities of music (Stefani, 1975, pp. 12-17). Jiranek provides a summation of the problem: "Music is communicable and its meanings and contents are communicative, but it represents an entirely individual and specific semiotic system differing essentially from that of language. As a result it cannot be squeezed into the Procrustean bed of semiotic laws of language" (Jiranek, 1975, p. 28).

The Influence of Rhythm on Music and Language

The discussion of music and language cannot end with the dismissal of semiotics. In an off-handed way, Upitis (1987) brought up the one lingering question, and that is the undeniable presence of rhythm in both music and language (p. 57). If the semiotic treatment of the issue could be termed the "brain's response" to the problem, a resolution to the question of the relationship between music and language might benefit from considering the "heart's response" coming from from the practitioners of music, poetry and dance.

Edgar Willems (1954), psychologist-turned-composer, leads off by observing that "In the beginning, music, more vocal than instrumental, was always allied to the word and, because of this, to poetic meter" (p. 23). Moog (1976) observes that in vocal music there is a "close inner connection" between the text and the music - the text contributes meaning, which gives the music some objective sense..." (p. 39-40). In his book entitled The Music of Language, Campbell-McInnes (1939) recognizes that a "sense of design" and "love of patterns" is "one of the deepest instincts of the mind" and that "poetry is patterns of words, and set to music, is remembered even better"(p. xiii). This

same scholar goes on to consider that poetry "may well be considered as musically patterned speech" and therefore, "All language is potentially poetry, all poetry potential music" (p. xiii). His conclusion is that this is so because "The essential fact of poetry and fine prose is rhythm; rhythm is also the essential fact of music..." (p. xiii). Moog (1976), citing Kierkegaard, concurs that some musical element always exists in speech. Prose, he says, is the farthest removed from musical influence while this influence increases the closer speech moves toward poetry until finally the musical influence becomes so strong that "language ceases and everything becomes music" (pp. 41-42). Once again, there must be some qualifiers. Willems (1954) cautions that music is more general in nature than language. "Sometimes it is said that 'music is a language' but one would never hear it said that 'language is a music'" (p. 105). But he does concede to Campbell-McInnes' (1939) notion that poetry is a "'musicalized language' because it gives more emphasis to rhythm and to sonority than to language usage" (p. xiii).

The views of the Swiss composer, Frank Martin (1965), prove to be quite germane to this discussion. He reminds us that the relationship between language and rhythm is not as simple as it may seem. He agrees that the expression of thought through language or music does have "phrases, periods, punctuation...exposition [and] response...a meaning, thus a beginning, middle and end;...in a word...a phrase, a form" (p. 18). He then points out that purely physical rhythm "begs to continue" according to the demands of its particular way of being (p. 18). Continuing forward he says it must also be taken into consideration that poetic rhythm displays a third characteristic apart from spoken language and physical motion. This is our consciousness of number, or perception of poetic meter, embodied in long or short, strong or weak syllables and in the subconscious counting of syllables.

But Martin observes that even this is still not the same as musical rhythm because duration is not fundamental to it (pp. 18-19).

Continuing on, Martin (1965) says that number consciousness alone is not as powerful as "rhythmic sense based on movement" (p. 19). This is evidenced by how many times some composers deform poetic rhythm "according to the demands of music by repeating words or fragments of stanzas" while more sensitive composers try hard to "make the poetic rhythm felt by and through the music" (p. 19). But he goes on to say that there are songs in which poetic rhythm and rhythmicity achieved through number consciousness coincide by obliging the text to follow the laws of physical movement, i.e. continuity and regular repetition. Equally, language obligates music to be shaped into phrases whose sequence carry the logical meaning of the text, including opportunities for breathing (p. 20). Martin's conclusion is that it IS correct to speak of music in the linguistic terms of phrases, periods and punctuation because they have everything to do with how we think rather than how we move (p. 20).

Frank Martin's opening of the complex issues of rhythm point to the singularly deep investigations into the influence of rhythm on language and music by Franz Saran which resurfaced in the educational theories of Kodály, Orff and others. Saran's (1901, 1966) analyses led him to describe three types of rhythm. The first is orchestic rhythm, derived from movements of the human body which also affect speech and song. A second type is speech rhythm, which occurs with rhythmic prosaic speech and may include body movement and especially facial expression. Lastly, Saran defined melic rhythm, which uses pure tone for its expression and thereby frees rhythm without restriction to speech or movement, even though a text may be present (p. 102). Free combinations of these three species of rhythm suggested by Saran account for

the many possible kinds of movement-to-text-to-rhythm transformations possible in poetry and Kodály, in his turn, saw these same transformations occurring in authentic folksong (Erdely, 1965, p. 7), an issue to be more fully explored later in this review.

Moog (1976) adds additional insight into the music-language relationship by describing three degrees of agreement between rhythm and actual speech: 1) words with rhythm, in which rhythmic pattern and word meaning are equal; 2) rhythms with added words in which words are fitted to an already existing rhythm pattern; and, 3) nonsense-word rhythms in which rhythm dominates by giving emphasis to the rhythm of the words while defeating the communication of meaning inherent in speech (pp. 41-42). Saran (1901, 1966) added further complexity to the overall issue by observing that works of art depend on rhythmic groups which combine and recombine into "ever higher orders" by being acted upon by certain factors. These factors are: 1) Regulation by time; 2) Dynamic shading; 3) Pause; 4) Articulation; 5) Agogic shading; 6) Melodic; 7) Harmonic; 8) Accentual; 9) Syntactic [when text is present]; 10) Embellishment or ornamentation; 11) Velocity or tempo; then, 12) Volume; 13) Register; and, 14) Inertia (p. 103).

Rhythm as an Entity Apart from Music and Language

Just when the relationship between music and language begins to raise a seemingly endless series of complex issues, Willems (1954) proposes the viable solution that rhythm may exist independent of sound and therefore doesn't have to compete with music or language for existence (p. 20). He clarified his position by calling rhythm "the prior element", which is pre-musical, although he understands that melody is the prime element of music because sound is its essential characteristic (p. 28). He observes that rhythm, in its largest sense, pervades the universe because "...it is present in all which

falls upon our senses and in all which surpasses them" (Willems, 1954, Foreword). To support this claim, he cites the organizational presence of rhythm in the sounds of nature, machines, birdsong, language and its poetry, human movement, the other arts and the physical aspects of playing musical instruments (Willems, 1956, 1987, pp. 24-25).

Organizationally, rhythm can be defined as the "commanding form" of a musical work, a "relation between tensions" instead of equal divisions of time. In this way, harmonic progressions, tonal resolutions, melodic direction and influential tones are really "rhythmic agents" of the commanding form (Langer, 1953, p. 129). This view seems to be able to absorb the seeming complexity of the rhythmic issue by refocusing it as something simpler, but certainly something comprehensive. Indeed, Langer concludes that repetition is a basic structural principle in music which is also connected with rhythm (p. 129), and she feels that this provides a framework for understanding the role of rhythm in both music and language.

Rhythm also occurs in dance, so this implies that music and dance are also closely allied through rhythm as are music and language (Willems, 1954, p. 111). But rhythm takes on a different aspect in each one, for in dance, rhythm is spatial and in music it is temporal, as Langer also previously suggested. This kind of thinking about rhythm comes directly from Bücher (1909), who felt that rhythm should be "studied in direct relation to life, putting the accent on movement...rather than on organization" (p. 3). In other words, "one should look for the source of rhythm in the physiological movements of the human body..." (p. 3).

As an anthropologist, Bücher (1909) saw a spiritual and a physical duality in the daily work of peoples of the world. He especially discovered that the spiritual side drives people to find the technical means for completing work

tasks as efficiently as possible (p. 21). He concluded that the "profound influence of work rhythms on the greater and smaller musical tendencies of a people cannot be readily dismissed" (p. 42). He also cited cases wherein he observed that there was an ambiguous line between whether the rhythmic structure of singing determined the tempo of work or whether the motoric movements of a particular work caused the singing to conform to them.

Bücher (1909) further saw that the work songs of primitive peoples can show melody and text as subsidiary to the movement and rhythm. Often the words are meaningless vocables and shouts "repeated in a monotonous fashion ad nauseam" (p. 42). He personally felt that the rhythm of work songs gives them meaning because of the fact that the

> "original rhythmic element dwells neither in music nor speech; it comes from outside of and originates in body movement, which the song is intended to accompany, and without which it generally does not occur. Because of that, each work, each play, each dance has its particular song, which through no other opportunities is sung..." (pp. 42-43).

The publication of this information had a profound effect on twentieth-century musical education. It confirmed what Jaques-Dalcroze had independently discovered about music and movement and it captured the attention of Kodály who passed it along to Bartók while both of them combed Hungary to find the deepest and most primitive layers of Magyar folksong. Orff, too, was aware of Bücher's position, and saw in it the underpinnings of Orff's own approach to what he called elemental music (Keller in Thomas et al, 1963a, 33). Later, Langer and Willems saw the rational simplicity of connecting movement with the rhythm found in music and language. And all of them began to see the pivotal role of simple folksong as legitimate and extraordinarily valuable musical literature.

Language, Music and Rhythm: Unified in Folksong

Bücher's complete refocusing and simplifying of the music-language issue allowed our cadre of scholars to move forward in the formulation of general concepts about one of the original questions of this dissertation - how music should be taught in relationship to what it actually is. Langer (1942) speculated that the phenomenon of song, a sort of formalized voice-play, probably came before speech in a culture's developmental history (p. 128). She was also careful to point out that "Song is not a compromise between poetry and music...song is music" (1953, p. 153). Langer also surmises that when words are combined with melody they are no longer autonomous and "take on purely musical functions" (p. 150).

Kodály drew from Bücher's views the understanding of how human motion and rhythm are connected which then allows rhythm to be transformed into verse and song. This resolved for him why specific types of work, "such as rowing or cradle rocking" are often done while singing, the structure of which singing is influenced by the rhythm of the work (Erdely, 1965, p. 5). From this synthesis, Kodály was able to make further analyses of folksong rhythm by drawing on the views of linguists and musicologists who were fascinated by poetic meter and its relationship to rhythm. These scholars were Hugo Riemann, Franz Saran, Eduard Sievers and Rudolph Westphal.

Sievers and Westphal reinforced the same notion as put forth by Bücher, that poetry was originally sung and usually accompanied by some sort of movement. Sievers specifically saw that language may be transformed into such things as verse and poetry when speech imitates the movement of dance (Erdely, 1965, p. 5). In ancient songs, according to Westphal (1872), "the poetic texts prevailed over the sound of the melody...[as]...the determinant for the rhythmic organization..." (p. 17). Cecil Sharp (1965), the great English

folksong scholar, also observed that folksong tunes are dominated by the text and notes the "close correspondence" of melody to language, but cautions that this connection only occurs with poetry, not prose. Otherwise, he sees that melodic form has developed independently of language (p. 92).

Kodály, too, struggled with this question of the rhythmic language domination of folk melodies and concluded that of the two components, melody was still the most important one due to its originality and permanence (Erdely, 1965, p.2). He meant by this that folksongs exist and are transmitted orally by melodic means, an idea which reversed older research notions that melodies were only vehicles for folk poetry (Erdely in Ránki, 1987, p. 84). By the time of the writing of his own dissertation in linguistics, Kodály was stressing the 'organic unity' of folksong and language. He saw melody and text as inseparable and defined folksong as a 'vocal text' in which the "words without the melody are not sufficient" (Erdely, 1965, p. 2; see also Zuckerkandl, 1973, pp. 25-26). This principle is also in agreement with the statement that "In folk art the tune is so closely knit with the text that one cannot even be analyzed without the other" (Pap in Manga, 1969, p. 10).

The foregoing illuminates the singularly influential effect of folksong on the history of music . The contemporary composer, Erzsebét Szönyi (1973), herself a student of Kodály, calls each folksong "...a complete formal unit in itself: a harmonious union of words and music, and a spontaneous expression of the nation's spirit" (p. 33). The Australian composer and folk-song collector, Percy Grainger, is reported to have said that "Folk-song, by and large, is narrative song..." (Pears, 1969, npn). Expanding on this notion, Kodály remarked that certain rhythmic transformations occur in folksong. Citing the musicologists and linguists mentioned above, he formulated that closed rhythmic forms begin with motions of the body. Yet, as soon as these rhythms

are attached to words, a peculiar 'text rhythm' emerges with distinctly musical qualities. This, in turn, transforms the text into narrated verse. He added that the addition of melody further affects text and rhythm (Erdely, 1965, 5).

Carpitella (in Stefani, 1975) insists on making an even finer distinction between the metric systems of poetry and folksong, saying that there are distinct differences. He reasons that there are two linguistic subcultures embodied in folksong: that of recited or written poetry and that of sung poetry (p. 42). Westphal (1872) likewise refers back to ancient practices when he says "there is no poetry without music and no music without poetry" (p. 17). He goes on to claim that the rhythmic periods of ancient songs in the oral tradition are naturally linked to the corresponding periods of speech. Within these periods, or groups of phrases, certain syllable groupings provide accent which organize the text and therefore the songs into some semblance of meter.

Percy Grainger (O'Brien, 1985) makes the summative comment in this exploration of the rhythm-music-language relationship. His conclusion illumines yet another corner of the question, that of the supposedly illiterate singer's linguistic and musical influence on folksong. Grainger's own ear for transcription was so keen that he was able to detect and document the variation techniques used by individual singers (p. ix). He discovered that "The creative folk singer would satisfy his need for variety and expression through the use of melodic, rhythmic, dynamic and ornamental variants. Thus, he would allow for, and emphasize, the changing word rhythms and emotional content of each verse as the song progressed" (p.ix).

The Mind and Music

Now that it has been established that music has content and meaning, that song is at least strongly interactive with speech and movement and that even rural folksingers who lack formal musical or literacy training participate intelligently in the process of musical creation, this exploration of foundation literature can turn to the exploration of music as a way of knowing. Musical intelligence has been specifically defined by Howard Gardner (1983) as a way of knowing (pp. 59-70) and he has a lot to say about its characteristics. But the important thing to realize about Gardner's work is that he is very clear on its genesis and gives ample citations for the origins of his thinking. This fund of resources proves very useful to framing this present review in constructivist foundations.

For instance, Gardner (1973) characterizes the convergence of the theories of Piaget, Lévi-Strauss and Chomsky as a focus on the constructive and generative nature of human thought which is defined by the physical structure of the brain and the "regulating forces in the human environment" (p. 242). This definition helps to sort out the conflicting forces in the foregoing review about the relationship between music and language and gives validation to the anthropological and musicological perspectives as well as to the linguistic sans semiotics.

Hemisphericity

Following up on defining the role of the physical structure of the brain in the ways of knowing, Gardner (1983) cites his own findings on brain hemisphericity and music. "The facts are as follows: Whereas linguistic abilities are lateralized almost exclusively to the left hemisphere in normal right-handed individuals, the majority of musical capacities, including the central capacity of sensitivity to pitch, are localized in most normal individuals

in the right hemisphere..." (p. 118). However, he cautions against oversimplifying this concept by also saying that the left hemisphere enters into musical functioning as the individual formalizes musical activities (p. 118) and that in this case, musical skills may be actually transferred through the corpus callosum into the linguistically-dominant left side (1982, p. 92). He recalls agreement among researchers that most musical faculties reside in the right brain hemisphere because it seems to be the locus for pitch and timbre but that rhythmic sensitivity seems to involve both left and right hemispheres. Others also agree that there is some evidence for left-brain dominance in rhythmic functioning (p. 92). Through this focus on hemisphericity, Gardner's research group was also able to clearly establish that the brain processes musical symbols differently than language symbols (p. 91).

Some really profound insights about the functioning of the brain in relation to parallel language and musical issues come from the field of comparative literature, as reported by Turner (1985). By citing findings from studies in perceptual psychology, brain-chemistry, brain development and cultural anthropology, Turner is able to provide the following summary about the processing of information by the brain: It 1)is "procrustean", accepting only information which fits "its own categories"; 2) is insistent on "certainty and unambiguity", and therefore "*determinative*"; 3) "seems designed to register differences", habitually ignoring the repetitive and expected in favor of the new and unexpected; 4) is "fundamentally synthetic", seeking "gestalts even when they are not there"; 5) actively constructs, seeks confirmation and reconstructs as necessary; 6) is therefore "predictive", inventing specific expectations of what will happen next; 7) is "*hierarchical*" in the very organization of brain cells which participate in its "reconstruction of the world" as well as in the chain-of-command through which motoric activity is routed; 8) is "essentially *rhythmic*";

9) is self-rewarding through the manufacture, release and reception of endorphins [which the author says is highly stimulated by the rhythmic effect of metered verse like nursery rhymes!]; 10) is "characteristically reflexive", able to "convert software into hardware", as in shifting short-term memory into long-term; 11) is essentially "*social*", unable to separate itself from its cultural context; 12) is "*hemispherically specialized*", both sides rhythmically alternating their processing of the same information and transferring "their accumulated findings on to each other"; and, 13) can be described as "kalogenetic", strongly driven from within "to construct affirmative, plausible, coherent, consistent, parsimonious, and predictively powerful models of the world" (pp. 62-72).

Turner (1985) elaborates especially on number 12 in the above list. Like Gardner, he challenges the popular view that the arts and those who participate in them are "right-brained". For instance, he muses that "art is as much a rational activity as it is an emotional one, so the location of art on the 'emotional' right is surely the result of a misunderstanding of the nature of art" (p. 71). He recalls how it has been demonstrated that experienced musicians use their left hemisphere equally as much as their right in listening to music, a sort of "collaboration" in which the music is first transferred from "temporal sequence to spatial pattern", then actually "read" back into a temporal continuum (p. 72).

Turner (1985) goes on to cite Jerre Levy who likewise sees a specific complementary functioning going on between both hemispheres (p. 71). According to Turner, Levy supplies a brilliant metaphor in which she says that "the left brain maps spatial information onto a temporal order, while the right brain maps temporal information onto a spatial order" (p. 71) Turner therefore concludes that "...understanding largely consists in the translation of

information to and fro between a temporal ordering and a spatial one - resulting in a sort of stereoscopic depth-cognition" (p. 72). This research confirms Zuckerkandl's (1956) earlier postulation that musical thinking is the ability to think in time images as a manifestation of the psyche. He calls this phenomenon a "musicalization" of thought (p. 264).

These issues about time and space are significant in terms of defining the musical way of knowing. This significance is found in meter, one of the nodes where music and language coincide because of the universality of rhythm (Turner, 1985, p. 61). Turner finds meter to be a rhythmic "way of introducing right-brain processes into the left-brain" at least where understanding language is concerned (p. 62). Actually, Turner and Ernst Pöppel, a psychophysicist, concur that poetic meter involves "much larger regions of the brain than the left-brain linguistic center" when it comes to "world construction" by the mind. This is not an unproven theory, they say, because they have found confirmation in experiments on the preferences of infants for nursery rhymes (pp. 12-13).

Turner (1985) characterizes rhythmic repetition as a "psychic technology" with considerable power to involve larger areas of the brain as it integrates brain processes with knowledge (p. 18). He points to rhythmic language as the essential trait of oral tradition and states that it stimulates the exchange of information between the hemispheres which "constitutes the human capacity to make sense of the world". Through Magnetic Resonance Scanning, Turner and his associates are seeing how rhythmic language "actually changes the active structure of the brain" by chemically activating the neural fibers of the corpus callosum (p. 18). He concludes that rhythmic language not only renders one more intelligent and creative, "but also increases the power of our memory enormously...a remarkable

convergence...on methods by which illiterate epic poets are able to perform thousands of lines of poetry" (p. 18).

Turner (1985) is quick to connect these insights with artistic symbolism: "The arts inherited the technique of symbolism from earlier forms of ritual...On the cortical level a symbol evidently acts as a connective between a left-brain linguistic proposition, or network of propositions, and right-brain image or image cluster" (p. 22). In this way, "plot or story becomes crucially important" because since plot and story organize large blocks of time, they contribute to the rhythmic transfer of large amounts of information between brain modes, in much the same way as poetic meter (pp. 20-21). Memory development, too, also comes under the influence of the rhythm of the hemispheres: "...we only really *know* something truly when we have translated it back and forth between the two sides of the brain a few times" because keeping memory in both hemispheres renders it much more permanent (p. 20).

With Turner's revelations about rhythmicity and the brain, previously-cited information about the universality of rhythm in language and folksong takes on new and urgent implications. Additionally, the extraordinary nature of Bücher's observations about work, rhythm and folksong make even more sense. Though musical memory is yet to be discussed in this review, the research findings about memory coming from Turner and his associates continue to favorably implicate the arts, a position which will be verified by Willems later in this review.

Nonverbal Thought

This question of the difference between music and language processing hints that there are nonverbal ways of thinking. "...Some of the manifestations of thinking are language and, of course, there has to be a close relation. Introspectively we're often very conscious of thinking in words. But

we're also conscious of thinking without words..." (Chomsky and Chase, 1992, p. 12). John Dewey (1934) intuitively arrived at the same principle: "...If all meanings could be adequately expressed by words...painting and music would not exist. There are values and meaning that can be expressed only by immediately visible and audible qualities, and to ask what they mean in the sense of...words is to deny their distinctive existence" (p. 74).

Nelson Goodman (1978) - who exerted a considerable influence on Gardner's thinking - says that "Architecture and nonobjective painting and most of music have no subject...they do not literally say anything; they do other things, they mean in other ways " (p. 23). Reporting to the Rockefeller Arts, Americans and Education Panel, Gardner (in Rockefeller, 1977) affirmed that the special quality of the arts is to express "forms of knowledge" which cannot be expressed any other way (p. 53). He goes on to elucidate that "The key to such knowledge comes from knowing how to read and use artistic symbols...how to put meanings into and get meanings out of them" and that these symbols are usually nonverbal (p. 53).

To the question of how knowledge can be nonverbal, Dewey (1934) explains that a distinction must be made between expressing and stating meaning. He sees that "science states meanings; art expresses them..." (p. 84). Through artistic expression or perception, Dewey continues, knowledge is transformed into experience which is a form of knowledge purely worthwhile just because it is experience (p. 290). Rockefeller's (1977) view on this matter is that perception and communication are dependent on far more than verbal ability and that the arts provide such a richness of nonverbal communication that they cannot be overlooked in the development of human thinking (p. 3).

Again, a reference to Suzanne Langer's pivotal work, Philosophy in a New Key (1942), further clarifies the issue. She believed that there are

perceptions which "do not fit in the grammatical scheme of expression" (p. 88). Elaborating on this, she explained that these other ways of meaning are not necessarily vague and metaphysical, but are able to use symbols other than those of discursive language (p. 88). In other words, "...there is an unexplored possibility of genuine semantic beyond the limits of discursive language" (p. 86). These are not new ideas - Leonardo da Vinci said that "All our knowledge has its origins in our perceptions..." (McLanathan, n.d., 9). Words lacking the capacity to express his new ideas, da Vinci also said that, for him, it was therefore necessary "...to represent and to describe" through his drawings (p. 2). Dewey (1934) quoted Van Gogh on the same type of insight: "...emotions are sometimes so strong that one works without knowing that one works, and the strokes come with a sequence and coherence like that of words in a speech or letter" (p. 72).

Other kinds of artists speak of their ways of expression. Dancers, for instance, are very articulate about their ways of meaning. "The use of movement for the expression and communication of ideas enters into all drama...An idea that is expressed in movement alone requires the whole body to be its instrument of expression. It must be absorbed and experienced in order to be communicated" (Soldan, 1965, p. 36). The renowned dancer, Isadora Duncan, is reported to have said it most directly: "If I could say it, I wouldn't have to dance it" (Gardner, 1989a, p. 115). In short, all genuine art forms and works of art deal in "...*forms of imagination* and *forms of feeling*" which clarify and actually organize "intuition itself" (Langer, 1953, p. 397).

Some scholars declare that of all the ways of knowing, music is "...the most articulate language of the unconscious..."(Cooke, 1959, p. x). But Langer (1953) is always adamant that music "...is not a kind of language. Its significance is really something different from what is traditionally

called...meaning" (p. 28-29). She sees music as being especially congruent with human feeling and therefore able to unveil the nature of feeling with a clarity and fidelity unattainable through language (1942, p. 235). Kodály (in Dobszay, 1992), as a composer, arrived at the same conclusion: "There is a certain sphere of the human emotional and intellectual life which only music and nothing else can give expression to" (p. 17). Through music, a composer indicates and articulates "subtle complexes of feeling that language cannot even name, let alone set forth". The composer's special gift is to know emotions and how to "compose" them (Langer, 1942, p. 222; see also Zuckerkandl, 1973, p. 11).

Gardner (1989a) especially appreciates Langer's view that music is the 'forms of feeling' rather than just feelings because it recognizes that the emotional tensions and resolutions of music cannot be verbalized or captured in discursive symbolism (p. 42). It is these very tensions and resolutions which qualify music as having a "connotative relationship" between itself and "subjective experience" (Langer, 1942, p. 227). This is because the undergirding relationships in music, the other arts, and all emotive activity are themselves tensions and resolutions. As Swanwick (1988) puts it, most of the arts are independent of words, but not inferior to verbal knowledge (p. 47). Clearly, he says, the arts are "...supra-verbal: fully flowering systems of precise and richly articulated forms, requiring layers of experience and insight if we are to understand them" (p. 47). The definitive summary of these concepts comes from Zuckerkandl (1973):

> There is such a thing as logical thinking, thinking in concepts, and there is such a thing as musical thinking, thinking in motions. Conceptual thinking leads to judgments, musical thinking to tonal patterns...Conceptual thinking is cognitive, its purpose to add to our store of

> knowledge. Musical thinking is productive, its purpose to add to our store of reality... (p. 337).

Musical Thought

The concept of musical understanding being contingent on experience and its resulting insights will be later shown as one of the pillar concepts of literature-based musical education. "The traditional preoccupation with the ingredients of music...has led people to listen for the wrong things, and suppose that to understand music, one must know not simply much music, but much *about* music..." (Langer, 1953, p. 106). This squares with what has been previously cited from Langer, that music is directly expressive. or presentational, not representational - it must be lived, not talked about, in order to be known. Ansermet (1971) concurs by drawing on what the history of music reveals. He says that "...all occidental music, from and including Gregorian chant, and all its history, up to the threshold of our time, has been determined from within, for theory - which is concerned with the external event - has always come after creation..." (p. 211). He explains that this is because "it is our feeling which gives sense to a musical structure" (p. 211). Thus, the literature seems to affirm and reaffirm that "...music works through minds..." (Swanwick, 1988, p. 4).

Chomsky (Chomsky and Chase, 1992) makes an enticing observation which is contextually about language but does hint at the possibility of another kind of thinking: "For me, the topic of inquiry is not the noises that you and I are making...The topic of inquiry is: what's going on in our minds?..." (p. 12). Child psychologists understand that artistic learning of any kind is rooted in symbolic thought which combines perception, feeling and reason which "attempt to interpret experience in a way which expands understanding". They also acknowledge the coexistence of cognitive and affective learning

(Rockefeller, 1977, pp. 56-57). Gardner (1983) specifically defines the musical intelligence as the ability "to discern meaning and importance in sets of pitches rhythmically arranged and also to produce such metrically arranged pitch sequences as a means of communicating with other individuals" (p. 98).

The sense of hearing is obviously allied with musical thinking and intelligence. Since "listening is the primary musical activity" it follows that musical hearing is a "special intelligence of the ear" which develops through use (Langer, 1953, p. 147). Essentially, musical hearing is the "ability to experience the primary illusion of music" (p. 147). Or, as Moog (1976) states it, "...musical thinking consists in establishing relationships between concepts which are perceived by the sense of hearing...It is only in music that thinking rests on sensory objects which are unrelated to objects..." (p. 38). As one voice among many, Langer points out the dual nature of musical hearing as being a function of both the outward and the inward ear, that is, music making is really controlled by inner imagination rather than by exterior mechanical means (p. 120). The American composer, Roger Sessions, described how a composer is always thinking in sound, finding musical patterns near the surface of consciousness. "It is the composer's lot constantly to be monitoring and reworking these patterns" (Gardner, 1983, p. 101).

Willems (1979), himself a composer as well as psychologist, linked the musical way of knowing to other kinds of thinking. "...The **intuitive perception of Order** is a key to human consciousness...Music, a human activity **par excellence**, can help us to discover many of life's secrets, and in musical education, we have a means of using them for the good of mankind" (p. 15). He also theorized that general intelligence is an "organizer" of sensorial information from the individual's acting upon musical intuition (1954, p. 227).

Gardner's (1983) findings strengthen the link between music and the other ways of knowing because he found that some musical capacities may be strongly allied with spatial abilities, such as a composer's ability to work with musical sound within an architecture prescribed by stylistic form (p. 123). Jiranek (1975) observed that musical thought comes together with movement - especially in dance and pantomime - through "continuity and discontinuity" and "fluency and interruption of movement" (p. 31). Continuing on, Gardner reported that people must have some basic numerical competence to be able to perform or appreciate the rhythmic aspect of music (p. 126). Willems (1956, 1987) found that "music is a particularly favorable domain for the study of memory" (p. 77). His prime definition of memory is as "an element of continuity" (p. 78). In fact, he identifies no less than 42 memory types and subtypes which operate in music (p. 78).

It is especially easy to see musical thought at work in singing, where the "...spontaneous emotional sound expression" of someone who does not really need to be formally trained declares their response to an "inner spontaneous need" (Jiranek in Stefani, 1975, 31). Through comparative means, Percy Grainger was able to identify the unique stamp of the individual singer's psychology on the expression and production of oral tradition folksong, indicating that there was an inner imagination at work in the process (O'Brien, 1985, ix). Certain melodic variations for the different verses within a single song signalled to Grainger that the unlettered singers had carefully thought out the structure of the song.

To sum up this section on musical thought, it seems appropriate to point out the consistent recurrence of certain principles throughout all aspects of the literature review. Numerous mentions of the experiential nature of music, the unique symbolization properties of music and the other arts, the constant

reappearance of rhythm as an organizing force in music, the many parallels to language and linguistic thinking, the recurring focus on pure folksong as an intelligent creative process and the close alliance between movement, rhythm and melody all point to an emerging cohesive pattern useful for the construction of a general model for musical education.

The Interrelatedness of Ways of Knowing

The most powerful concept to come out of Gardner's (1983) Theory of Multiple Intelligences is the evidence that all of the autonomous ways of knowing still somehow interact and interdepend in the creation of the whole mind of a learner (p. 127). As summarized above, musical knowing has many attributes which seem related to other ways of thinking and meaning. Gardner (1982) himself was guided along this trail by a cryptic statement from the socio-anthropologist, Claude Lévi-Strauss: "Music is the supreme mystery of human knowledge. All other branches of knowledge stumble into it; it holds the key to their progress" (p. 91). This was known by the writers of curricula in the Middle Ages, when music was regarded as a subject within itself and given equal status in the upper division of the seven liberal arts (Flanagan, 1990, p. 45).

Moog (1976) identifies a definite "borderland" between language and music where the earliest musical experiences of children seem to take place (p. 42). Moog further cites investigations in genetic psychology which reveal that although there are vast differences between language and musical experience, they also overlap (p. 42). Others found that though there are similarities between language and musical development which may even be interactive, neither fully explains the other (Upitis, 1987, p. 57). Holahan (1987) also found that though there are some "common characteristics" shared between language and music because they are both "experienced

fundamentally as patterns of sound arranged in time" they are still not the same, and that our "cognitive capacity" for them is "analogous" but not the same processes are involved (p. 96). Similarly, the research of Deutsch (in Upitis) isolated the "fundamentally different" cognitive processing mechanisms for pitch perception/memory and language sounds (p.96).

Since it has already been established in this review that music and language are quite different, it may be more useful to look at the nodes where they do overlap, as Moog suggested. An answer can be found in an interview with Vaclav Havel (1990) when he was asked how he writes his plays:

> ...something close to music and musical thought enters my plays. I really enjoy things like the...interweaving and mingling of motifs, phasing them in and out, developing them rhythmically, mirroring motifs in their opposites...recapitulating bits of dialogue, repeating them, interchanging them, putting words spoken by one character in the mouth of another and then back again, dialogue running backward or contradicting itself, stressing the rhythmic alternation of conversational themes...All of this, to a greater or lesser degree, can be found in my plays... (p. 192).

One would be hard put to it to find this better said by a professional musician. Havel's metaphor of symphonic structure applied to his creative writing illustrates that he uses his musical way of thinking to operate in his linguistic way of knowing.

Campbell-McInnes (1939) seems to delight in turning the tables around by considering language a form of music! In many ways, he says, "the great poets are the supreme master-musicians of language" (p. 35). Similarly, though there are tonal languages, and their tones and inflections are not arranged in scales, they do have order and that is what makes music (p. 36). In the same vein as Havel's above-mentioned revelatory insight, Cecil Sharp (1965) was told by a Greek peasant singer "As I do not know how to read, I

have made this story into a song so as not to forget it" (p. 6). Years before, Campbell-McInnes had already observed this same mental phenomenon. He explained that music, as an art comprehending "extended forms of sound and rhythms", helps the intellect in retaining the "sound, sense and imagery of words". Singing, therefore, he continues, is literally a "gymnastic for the mind, for memory..." (p. xiii). This clearly reinforces an earlier cited statement by Willems as to the musical involvement of kinds of memory.

Creed's (1990) discovery that the Old English epic, Beowulf, can only be accurately versified once its encoded rhythmic schema are uncovered, explains the interdependency between language, rhythm, song and memory (p. 28). By treating the constituent speech parts of Beowulf much as Kodály (1906) dissected folksong structure, Creed was able to establish important and recurring structural relationships in the epic (pp. 29-38). His startling conclusion is that the ancient, unlettered oral transmitters of the Beowulf story intuitively discovered that rhythmic sound-patterning was inherently memorable and a highly-efficient way of preserving information (pp. 1-4; see also Dissanayake, 1988, p. 153). Additionally, Creed's studies led him to locate specific areas of the brain which process rhythmic speech relationships as a way of efficiently developing verbal memory (p. 4). It must also be mentioned that one of Creed's major points of departure was the work of Eduard Sievers, which work also so greatly influenced Kodály's folksong studies.

Katalin Forrai (1974, 1988), internationally acclaimed for her work with young children and music, says that musical development in young children also affects their linguistic development. The exact articulations required by the rhythm and beat of rhymes and children's songs "promote speech development, good pronunciation" and language fluency (p. 21). Kuhmerker

(in Peery et al) sees the value of using songs to facilitate the acquisition of beginning reading vocabulary. She attributes this to the "rhythm and the phrasing of the words" which, when combined with movement, give the children a richer linguistic experience (p. 21). Still other researchers have found that picture books about songs may help children develop basic linguistic abilities. They noted that bilingual and learning delayed children seem to benefit from participation in the text, rhythm and artistic interpretation combined in this genre of literature (Jalongo and Bromley in Peery et al, 1987, p. 21). There is also the study by Hurwitz et al (in Peery et al, 1987) who reported significant language reading skills improvement and better sensorimotor rhythmic behavior in American children who had been receiving musical training according to the Kodály concept (p. 20).

Reinforcing the hunch that the different ways of knowing interact with and affect each other, it has been established that the arts "constitute a route or a bridge to the underlying order and structure in all the disciplines" (Eames in Rockefeller, 1977, p. 56). More specifically, the arts may especially be helpful to each other as ways of knowing. For instance, the arts as a whole may help the musician develop "a general awareness of rhythm" (Willems, 1954, p. 114). Other musical scholars see this interrelatedness. Forrai, for example, states that through moving while singing, the spatial ability of children is also cultivated (Forrai, 1974, 1988, p. 60). Suddenly, music becomes more dependent on other ways of knowing, for as Forrai also points out, movement and spatial thinking are part of the overall aesthetic education children should experience in the development of their musicality (p. 61). So, we find out that musical intelligence, though autonomous, is scaffolded onto other ways of thinking as well.

Even by early in this century, it was well established in the domain of linguistic science that "all poetry was originally singing, and...singing came with dancing...the rhythmic movement of the body..." (Sievers, 1912, p. 36). In fact, it could also be said that poetic verse and therefore meter could have originated through seeking to fit speech to dancing and singing (p. 36). This now brings into play some historical evidence to support the concept of interrelatedness. This is a common theme among the scholars, that the closer we approach antiquity, the more we see the clear interaction of all the disciplines (pp. 40-41). But this interrelatedness is not just limited to music, language and dance. Dobszay (1992) makes the observation that the arts and sciences are interdependent and cannot survive without each other. "One is a better scholar", he says, "if he possesses the qualities of an artist, and this also holds true if taken the other way around" (p. 130). In an address to the Hungarian Academy of Sciences, Kodály (in Eösze, 1962) said:

> Not only is there a close relation between the various sciences...but it is also true that science and art cannot do without one another. The more of the artist there is in the scientist the more fitted is he for his calling, and vice versa. Lacking intuition and imagination, the work of a scientist will at best be pedestrian; without a sense of inner order, of constructive logic, the artist will remain on the periphery of art (p. 47).

This review about the interrelatedness of ways of knowing is crucial not just for music education, but for all of education. Music should be at least taught for its own contribution to the development of children, not just for the development of musical skills (Feierabend, 1990, p. 16). Eddy (1981) observed that in British schools structured around the "integrated day" concept, administrators gave ample evidence that "in countless ways, experiences of an expressive or creative nature initiated or reinforced the development of cognitive skills - and vice versa" (p. 7). According to this same

author, the natural way to provide for arts education is through allowing the "*interrelatedness* of arts activities and experiences" into the lives of children "*every day*" (p. 8). Using a wonderful play on words, Nelson Goodman (1978) tells how various authors and artists take our familiar worlds of experience and knowledge and rearrange them into "recognizable - that is '*re-cognizable*' - ways" (p. 105). Goodman also provides the perfect summary to this issue of interrelatedness: "...In these days of experimentation with the combination of media in the performing arts, nothing is clearer than that music affects seeing, that pictures affect hearing, that both affect and are affected by the movement of dance. They all interpenetrate in making a world" (p. 106).

Educational Implications of Music as a Way of Knowing

Now that the concept of holistic mental development has been brought up, it also begs the question of what influence the parts may have on the whole. In this category, the question of the influence of the arts in general and music in particular on the development of the personality and overall cognitive development of the individual will be considered. Nelson Goodman (1978) again has something important to say: "...the arts must be taken no less seriously than the sciences as modes of discovery, creation, and enlargement of knowledge in the broad sense of advancement of the understanding..."(p. 102). Pestalozzi (in Jedan, 1981) likewise felt that true education should involve the natural development of all a person's powers, which he enumerated as the heart [moral], mind [intellectual], and body [physical] (p. 170).

The Effect of Music on Intelligence, Personality and Cognition

Speaking from a psychologist's point of view, Willems (1975) saw music as "essentially affective". It is also "motricity, dynamism and in its complete development - including reading and writing - intelligence which in

large part discovers the order which presides over the structure of the world..." (p. 15). Swanwick (1979) termed music's ability to interconnect meaning and emotion as its "feelingfulness", which he aligns with Langer's terminology of 'sentience' or 'consciousness' (p. 31). Then Swanwick gets right to the point of the present topic: "We put ourselves in a false position in music education if we imagine that emotion and thinking are separate and that we are concerned with the former while colleagues in science or math are responsible for the latter..." (p. 31). Junius Eddy (1981) makes the same strong point that "too many instructional roads seem to lead to cognition as the end product" (p. 17). He further points out that the accumulation of facts alone does not always guarantee change in behavior. He feels that the kind of fundamental knowledge which is missing in our schools is affective and emotional. And Eddy has a relevant solution for the problem: "One of the basic tools of relevant education, it seems to me, is the development and refinement of perceptual skills...a matter the arts are peculiarly equipped to illuminate" (p. 16).

Gardner (1989a) makes the point even stronger by asserting that art should be taught "for the sake of mind", which is larger in scope than art for its own sake, or for the sake of the state (p. 266). He elaborates that true arts education should be interested in "joining, in education, the skills of producing, perceiving and reflecting" in order to consolidate the kinds of knowledge produced through artistic experience (p. 266). Art "for the sake of mind" is a powerful concept embraced by other influential scholars. Forrai (1974, 1988) for instance, says that musical development strongly influences the development of the entire personality (p. 13). But, she goes on to say, only artistically valid music can achieve this, for it makes children sensitive to beauty and forms tastes and attitudes for a lifetime.

In a longitudinal Hungarian study, low socio-economic status children given systematic musical education demonstrated a decrease in disparities between verbal and practical intelligence "suggesting that the structure of the intelligence is becoming more balanced" (Barkóczi and Pleh, 1982, p. 130). These same researchers speculate that if their findings are supported by further research, they may indicate "...possibilities for music to affect the very structure of abilities" (p. 116). [This same study was replicated in America by Hurwitz (1975) with similar results]. The original Hungarian study revealed that intense and purposeful musical education increases connections between creativity and intelligence, and between divergent and convergent thinking (p. 131). In children given more musical instruction "high creativity is combined with emotional sensitivity, elaboration, and inner control" especially in more disciplined areas of convergent thought (p. 131). These same researchers were adamant that the beneficial effect of music on creativity is "unambiguous" in terms of fluency, flexibility and originality (p. 129).

The General Capacity to be Musical

"I once drew like Raphael, but it has taken me a whole lifetime to learn to draw like children" (Picasso in de Meredieu, 1974, p. 13). Or as Gardner (1989a) observed, children before the age of nine seem to already have the "mind of an artist": they can be nonliteral, they are not bothered by the lack of realism in their art, they are comfortable with metaphor and breaking the rules of form to obtain a certain effect is not a problem for them (p. 72). Or, "Pure enthusiasm and naïve instinct...are to be found in every healthy child. With a few years technical preparation children can achieve results measurable by the most exacting of absolute artistic standards" (Kodály in Bónis, 1964, p. 122).The issue being addressed by all of the above is that every child is capable of some considerable degree of artistic thinking. This flies in the face

of what is generally accepted, that only the talented can be musicians, or artists or dancers.

Also contrary to the same myth, general musical education is "accessible to all children, gifted or not, from the age of four years onward" (Willems and Chapuis, 1971, p. 1). Moog (1976) calls this universal ability "musicality" and defines it as an inherited disposition to apply general abilities to the field of music" (p. 46). This is a crucial concept - musicality is not a special gift meted out to only a few persons per generation, but is quite dependent on general intellectual ability. Another way Moog defines musicality is as the "ability to experience music" (p. 45) and he goes on to say that it is "just as firmly woven into the total fabric of potential human abilities as the potential for understanding speech, for reading, for motor skills, and so on" (p. 46). He also considers musicality as an integral structural part of all human abilities (p. 46). Zuckerkandl (1973) soundly backs up these claims:

> ...Musicality is not the property of individuals but an essential attribute of the human species. The implication is not that some...are musical while others are not...musicality is not something one may or may not have, but something that...is constitutive of man...Music is the concern of all, not of a privileged elite, and if musicality represents an asset, it is not the prerogative of a chosen few, but an endowment of man as man [sic] (pp. 7-8).

Zoltán Kodály felt so strongly that every child could be musical that he included provisions in his overall teaching concept for underachieving children to succeed (Kokas, 1971, p. 28). Indeed, Hungarian studies show that more than half of six-year olds in a typical group of first grade children have fine musical abilities, and the other half has much potential for development. Only 4% seem to struggle (Adám, 1971, p. 17). This agrees with Kodály's (in Szabó, 1969) statement that a musical culture cannot be solely based on outstanding talents, which are always rare (p. 33). As he also said, much

attention must be paid to the musical education of those great numbers of people with solid, average abilities because from them will come the next generations of good musicians and music teachers (p. 33). Szönyi (1973) reports that this philosophy has paid off well in Hungarian music education for they regularly observe that children with even faulty musical hearing or singing improve dramatically and actually catch up to the general level of musicianship after only one or two months in a music primary school (p. 41) This phenomenon is a clear parallel to Frank Smith's (1992) concept of "joining the reading club" (pp. 432-441). In the previous century, Lowell Mason (1854, 1967), the so-called "father of American music education", also believed in the necessity of providing musical education for the general population in order to improve the musical culture of the nation and devoted his career to doing so (p. vii).

That there is more than native ability at play in the development of musicality is attested to by Willems (1956, 1987). He observed that children with remarkable musical ears often do mediocre work in music classes while those with less developed musical hearing make noticeable and rapid progress (p. 34). Willems reasoned that this is because the ear must be backed up with the individual student's "interest, affective sensitivity and intelligence" (p. 34). Another facet to this, according to Willems, is the role of the home and family, which he sees as the single most determining factor in the development of general musicality (p. 7). Like Kodály and others, he also observed that children are quite capable of accurately learning numerous songs before the age of two, often before acquiring speech (pp. 7-8). Fowler identified the "earliness, intensity, persistence, regularity, family concentration, tutorial approach...and family...value orientations" as the factors in home

environment which help children develop their musicality (Fowler in Peery et al, 1987, 10).

The first steps in musical training are another prime determining factor in the outcome of a child's musical ability. First must come the singing of songs and moving to them while singing (Willems, 1956, 1987, p. 9). [This becomes the application of what Bücher observed in the cultures he studied, as reported elsewhere in this review]. Thus, the naturally occurring sensorality at the core of each child's musical gift should be the focus of all first pedagogical activity (Willems, p. 9).

Besides aural sensorality, every child also has the rhythmic instinct, another component of the musical gift. Therefore, movement should be a part of musical education in order to establish natural bonds between musical rhythm and instinct..." (Willems, 1956, 1987, p. 9). Willems (1954) explains this latter principle beautifully, for, as he says, "Natural rhythm is given to every human being. It isn't taught, it is awakened. It is therefore instinctive" (p. 229). Not surprisingly, other researchers find that people seem to be able to naturally organize rhythmic information into groups marked off by boundaries signaled by changes in duration, something which they can also do in linguistic and other areas of cognition (Upitis, 1987, p. 56).

Historical Influences on the Thinking of Composer-Educators

Leaving modern cognitive and linguistic concerns momentarily aside, this review shifts its focus onto two historical streams which coincide to influence and unify the kind of musical education under scrutiny in this study. The more ancient of the two has uncertain origins but came into full play in the year 1000 AD. with the development of an easily learnable and communicable system of musical notation by Guido of Arezzo and his contemporaries. This invention had a powerful enabling effect on the literacy aspects of the acquisition of

musicality, the development of which aspects can be closely observed up to our present time, unlike the more distant origins of language literacy. The more recent of the two derives from Heinrich Pestalozzi, whose imprint on general education, let alone musical education, remains strong even today. Because the combined effects of both of these constructivist-like streams of musical development appear and reappear in the ongoing genesis of systematic musical education engaged in by the composer-pedagogues under study, each will be reviewed below.

The Legacy of Guido's Representational System

Leaving aside any specific philosophical or pedagogical differences, the musical literature and resulting pedagogies of composer-educators are already closely allied because their aural and literate components are firmly rooted in ancient common ground. This commonality is the dual phonetic and pictorial system of representing musical sound and structure invented - or possibly synthesized from preexisting attempts at innovation - in 1000 AD. by Guido of Arezzo, an Italian Benedictine monk. In order to understand exactly what Guido - and possibly his contemporaries - invented and its significance for this study, a brief recounting of the history of musical notation is here provided.

It is helpful to understand that our modern scale structures and notational systems are firmly rooted in two aspects of ancient Greek musical philosophies and practices. First, Western melody and harmony have retained the affective characteristics of the ancient Greeks through the tradition handed down by Aristoxenus. Second, the scientific aspects of tonal ratios and intervals theorized by Pythagoras still survive today in our tuning systems (Williams, 1903, 1968, p. 16). [Passing mention must also be made here of Plato's extensive writings about the moral aspects of music (Anderson, 1966,

pp. 64-110).] It is now also known that at least by the time of the Roman domination of ancient Greece, and perhaps even earlier, the Greeks had some sort of solmization and letter-name systems for singing exercises (p. 40). However, by the end of the fifth century AD, Greek notation had fallen out of use with the closure of the pagan schools by Theodosius. The Christian schools which replaced the pagan taught singing only by ear and rote memorization. At the beginning of the eighth century, a new system of notation, called "neumatic" notation, appeared as a complete system in Western music, though it had been in use in the Byzantine tradition since the year 555 (pp. 43-44).

Neumatic notation was a subtle but imprecise pictorial-only system developed to remind singers of the nuances, breathing places and rise and fall of specific hymn-tunes which they had already learned by ear (Williams, 1903, 1968, p. 60-61). The *neuma*, meaning *vocal emission* in Latin, was probably a musical sign which represented a grouping of sounds to be sung in one breath. They did at least indicate upward or downward pitch movement (David and Lussy, 1882, p. 43). "The neumes were signs indicating...delicate shades of accent and rhythm, and...flowing and spontaneous melodies" but could not serve for sight-singing heretofore unknown compositions in differing musical styles (p. 64). This was because the neumes, although prototypes of modern notational signs, worked in isolation from each other without conveying the precise relationships between pitches (p. 44). In addition to being melodically imprecise, the neumes were equally ambiguous when it came to designating rhythmic duration (Riemann, 1905, npn).

Neumatic notation was used for notating European sacred and secular music clear through the twelfth century (David and Lussy, 1882, p. 43). The various training centers for singers continued to make do with the limitations of

neumatic notation until about the year 1000, when there arose many new schools of composition, each promulgating different stylistic features of music, and each of which had the desire of teaching "at Paris what was composed at Rome" (Williams, 1903, 1968, p. 64). Of course, the limitations of neumatic notation had been bothering musicians for several centuries. For instance,

> "As early as the seventh century, Isidore of Seville lamented the lack of a notational system to record melodies and in the tenth- or eleventh century an unknown writer said that it usually took fifty years for a singer to learn to perfect the chant repertory using the rote learning model then available" (Leach, 1990, p. 83).

There is also ample evidence that composer-pedagogues had been experimenting with ways to get beyond neumatic notation. For example, in the tenth- or eleventh century manuscript entitled Dialogus de musica, a pre-Guido attempt is reported in which choirboys learned to write, over chant texts, pitch letters from a Pythagorean monochord [a single-string instrument for working out the ratios between notes]. Then, by plucking these same pitch notes on the monochord, they were able to sound out the melody in order to learn to sing it (p. 83). This is not very much different than the popular twentieth century notion of how to sight-read music!

At first, Guido used the monochord system of teaching melodies, because it was the system he inherited. But he soon went far beyond it by inventing a staff notation in which the C and F lines were color-coded and in addition, he invented a singing pedagogy which he claimed could turn out "a finished singer in the space of a year...or...two" (Leach, 1990, p. 84). In essence, Guido seemed driven by the situation of the times to clarify and simplify musical notation. One singular discovery by Guido will be shown later as still profoundly influencing our modern composer-educators: "deriving the sound of note signs from known melodies, from which practice we now have

solmization" (David and Lussy, 1882, pp. 85-88). Using the seventh century hymn "Ut queant laxis", Guido used the first syllable of each line of text to define "ut re mi fa sol la", a sequence of tones which perfectly matched the whole- and half-step pattern of the Western major hexachordal [six-note] scale so widely used in the tunes of his time (pp. 82-83). This discovery of a predictable arrangement of musical patterns and relationships within the actual singing repertory also suggested a natural pedagogical system for teaching it to others. The combination of both spread quickly throughout Europe. This is partly because Guido was apparently not working in isolation but seems to have been the first to make usable the diverse efforts of his immediate predecessors and contemporaries: Aurelain of Réomé, Reginon of Prum, Rémy of Auxerre, Hucbald of Saint-Amand, Odo of Cluny and some anonymous scholars (pp. 73-78).

Guido's threefold contribution to music forever enabled and especially accelerated the composition of Western music. These three enabling aspects are: 1) the use of solmization to reveal the constant tonal relationships between notes at any pitch; 2) the reconciliation of the use of solfège as a relative system to the use of absolute note names as a fixed system; and, 3) the standardization of pictorial notation and its relationship to the phonetic notation of solfège (Williams, 1903, 1968, pp. 72-86). Thus, Guido's synthesis of sound and sight filled an urgent need for accelerating the learning of chant in his own time and became the beginning of modern sight-singing (Leach, 1990, pp. 82-83). His new way of using neumes had "unhoped for results" because the signs "distinctly indicated the intervals", making for a great reduction in error when it came to copying, reading or singing notation (David and Lussy, 1882, p. 55).

Guido wrote in a letter to his bishop, Theobald, that "a child could read an unknown chant at first sight after one month [of training]" using his notational and pedagogical approaches (David and Lussy, 1882, p. 55). One of the most important woman composers in musical history, Hildegard of Bingen, referred to her own use of Guido's music reading and writing system around the year 1148 in faraway Rupertsberg, Germany (Flanagan, 1990, pp. 187-188). By the fourteenth century, the semiology of music had been completely transformed by Guido's innovations, and has continued passing through several metamorphoses up to and including our day. However, plainchant notation stayed the same as the fourteenth century version and is still notated that way today (p. 58).

Through the centuries, literate musicianship has been based on the key-centered relative solmization system of Guido of Arezzo. Even the fluent sight-singing of Elizabethan England can be attributed to his influence (Curwen, 1875, 1986, p. 2). Thomas Morley, the Elizabethan-era composer of airs, motets and madrigals, turned his attention to helping language-literate people become musically literate. His first specification was for them to master the use of solmization (Morley, 1597, 1953, p. 6). It is well-known that the educated English household of that time was expected to possess several collections of part-singing books featuring the vocal works of the best continental composers (p. 9). Through the widespread use of Guido's systems, all dinner guests were expected to sight-read and hold their part in this high music of the time (p. 9). The key concept was to be able to read and sing one's part without seeing the other parts, which is known from the fact that only one voice part was printed per book. Thus, it is known from eyewitness accounts that the use of Guido's ideas had resulted in a high degree of independent notational reading among the educated classes of Europe (p. 9).

England's old tradition of using solmization continues to this day in the English boychoir school which was the partial heritage of Sarah Glover and John Curwen and which so impressed Kodály. But the Hungarians also had a direct inheritance from Guido, not to mention further reinforcement from a lesser-known Swiss music pedagogue, Rudolf J. Weber, of Bern, who was instrumental in working out the basis for modern relative solmization in 1849 (Szönyi, 1973, p. 22). In 1875, Sándor Domonkos and Gyula Hórvath adapted Weber's modernized version for use in their country which paved the way for the Kodály pedagogues to carry their own work forward. It is also known that John Curwen drew upon Weber's modernized version of solfège, but insisted on discarding the pictorial half of it (Adám, 1944, 1971, p. 10).

A summary here of what Guido and his contemporaries actually accomplished will be helpful later in understanding the course modern musical education is taking under the innovation of our subject composer-educators. The first principle of Guido's new system was to establish the relationships between pitches. To achieve this, he hit upon using the tonal context of a known song to illustrate how the various tones were different yet interdependent (Leach, 1990, p. 85). A second key principle of Guido's sight-singing instruction was to teach the students to sing, from notation, any ascending or descending interval starting from any pitch. Guido either composed or borrowed extant melodies which illustrated all of the possible intervals in context, not just theoretically. Students memorized these model melodies in order to master the intervals (p. 85).

Even after Guido's time, the problem of how to simultaneously combine rhythmic duration and pitch relationships in the same symbol persisted for centuries. This situation grew more and more confused because the notation of sacred and secular music developed independently. Around the sixteenth

century, the sacred music tradition standardized a way to capture rhythmic duration in pitch symbols (Riemann, 1905, npn). As will also be shown later, this means there are some complex issues involved in becoming notationally literate which transcend the mere ability to name notes or reproduce them mechanically. Again, our composer-educators have been quite articulate on these crucial points.

The Legacy of Heinrich Pestalozzi in Constructivist Musical Education

Among others, Lowell Mason, John Curwen, Jaques-Dalcroze, Zoltán Kodály, Carl Orff and Edgar Willems all acknowledge the direct or indirect influence of Pestalozzi's thinking on the formation of their pedagogical views about musical education. Their common point of departure seems to be the interaction between the teacher and learner in the ongoing development of instructional behaviors (Pestalozzi in Jedan, 1981, p. 18). One of the outcomes of this influence is that the composer-educators also developed well-articulated and child-centered philosophies which stay remarkably close to Pestalozzi's.

Pestalozzi's own approach to education was philosophical rather than methodical. As he said himself, "...It is life which educates. This is the principle which has guided me in all of my efforts in elementary education" (Cornaz-Besson, 1977, Frontispiece). In this Pestalozzian way of education, "...The knowledge of a person must be based on intuition...Each branch of instruction must be taken from a point of departure within the reach of the developing powers of the child. In each branch, the basic elements must be practiced until mastered by the student" (p. 40). Pestalozzi often used the German term "Anschauung" to describe this concept of learning by intuition. Though not directly translatable into English, the term implies the intuitive learning of

concepts often before they are named through the natural progress of understanding them in a concrete to abstract way (Jedan, 1981, p. 48).

Pestalozzi was also concerned with linking a learner's natural intuition with the concept of sequence. Paralleling this, he saw one of the teacher's prime roles as providing opportunities for perception which would be within the reach of all the students in a given classroom (Jedan, 1981, p. 49). He saw these sequenced learning opportunities as having a subtle gradation from simple to complex in such a way as to constantly engage children's faculties by insuring "continuous, easy and attractive progress" (p. 49). Pestalozzi also discovered that even within the scope of a single knowledge group there existed easy sequences and more difficult ones, but he always cautioned against losing sight of the whole body of knowledge regardless of the task at hand (p. 50). It is interesting to note how this foreshadows today's concept of the spiral curriculum as well as that of holistic learning.

Contemporaries of Pestalozzi were quick to see the potential application of his philosophy to music. The Swiss composer Hans Georg Nägeli and his colleague, Michael T. Pfeiffer, together worked out the musical application of Pestalozzian educational principles (Jedan, 1981, p. 61). Their curriculum included developmental learning in "melody, harmony, tempo and the rudiments of reading and composing music" (p. 61). Nägeli and Pfeiffer jointly published their results in 1810 under the title of Teaching of Music on Pestalozzian Principles (p. 61).

In Nägeli's and Pfeiffer's musical synthesis of Pestalozzi's principles, the first focus is on rhythmicity as the inseparable partner of movement and dance - "the highest expression of dimensional existence" - with music acting as the regulator of this existence (Preussner in Thomas et al, 1963, p. 9). Upon this rhythmic foundation, their adaptation proceeded to build children's

melodic sensitivity through ear-training, sight-singing, choral development, and score-reading, including large-form polyphonic works of Bach (p. 9).

Reflecting their complete understanding of Pestalozzi's intentions, Nägeli's and Pfeiffer's teaching philosophy was not just oriented to the technical side of music. For them, the culmination of musical education was the vital two-way connection between music and life, since to their minds, art was the intensification of life. "The age of music will first take root in the children's world, and from there the betterment of mankind must start" (Nägeli in Thomas et al, p. 9). That this ideal was at least in part achieved in Pestalozzi's own school in Yverdon, Switzerland, is attested to in eyewitness accounts by participants who saw that not only was singing the basis of all musical instruction, but that spontaneous singing was joyfully woven into walks, field trips and school assemblies (Holman and Krüsi in Jedan, 1981, p. 61). This singing approach was credited as being a major source of "the harmony and good feeling which prevailed among us" (p. 61).

Modern perspectives seem bent on forcing educational philosophies such as those of Jaques-Dalcroze, Kodály, Orff and Willems into "methods", but perhaps these composers' own rare usage of the term "method" was closer to Pestalozzi's. He considered method as "...a philosophical concept of developing a child's personality and capacities to the full and preparing him to live a full and happy life as an adult" (Pestalozzi in Jedan, 1981, p. 47). This is a much more global interpretation than our obviously narrower modern connotation of method, "the specific techniques of teaching various subjects" (p. 48).

There can be no question of Pestalozzi's powerful formative influence on modern systematic musical education exemplified by the work of the educators and composer-educators whose contributions are the focus of this

study. It is not difficult to discern that they have each carried forward the following basic Pestalozzian principles into their own philosophies on musical instruction: 1) intuition is the basis of instruction; 2) first learn through experience, then analyze and critique; 3) progress from what is simple toward that which is more complex according to the children's psychological sequence, not that of the content; 4) take time for mastery; 5) the individuality of students is to be respected; 6) the principal aim of elementary instruction is not acquisition of content but development of mental processes; 7) know-how, knowing and knowledge must be connected to practical talent; and, 8) good teaching reflects good relationships between the teacher and the students (Piaton, 1982, p. 62).

Summary

Combining these ancient and more recent ways of thinking about music discussed above allows the synthesis of a firm foundation for a literature-driven model of musical education. As a result of this foundation, the picture emerging from the writings, compositions and pedagogical traditions of the main composer-educators of the nineteenth and twentieth centuries has typically constructivist attributes because these pedagogicial traditions are intended to be self-generating and self-renewing in terms of method and learner-sensitive in application. However, it is understood that though the developmental behaviors behind these pedagogical traditions are constructivist, they actually predated constructivism as a conscious conceptual framework. Even so, the following chapter details how the linguistic, developmental and historical streams reviewed above coalesce into the various musical education systems which will ultimately provide the data for a model which could very well be termed a meta-method for the acquisition of musicality.

CHAPTER III

RESEARCH OVERVIEW

Methodology

Three kinds of data-gathering activities will inform this project. First, the historical construction of music as a literature and a literacy by certain composers who concerned themselves with artistic education will be surveyed. Next, information about how these composer-educators view the acquisition of musicality will be gleaned from their own writings and consequent interpretive literature, and in some cases, from qualitative interviews of those who carried their work forward. Lastly, composed and compiled school literature developed either by these composer-educators, their successors or interpreters will be analyzed for its relationship to the other two bodies of findings.

Partly for insight and partly for triangulation control, the combined findings described above will be cross-compared to selected parallel issues in language literacy and arts education research. The resulting conclusions will constitute the basis for a comprehensive model of how musicality is developed in individuals through education and the rationale for doing so. Subsequently, issues of curriculum reform and questions for future specific research will be derived from the model.

Musical Education Models Developed by Composer-Educators

As a prelude to fulfilling the first research task mentioned above, this section seeks to review how certain composer-educators synthesized unique and important musical education ideas and applications from the converging streams of the Guidonian and Pestalozzian traditions and the more modern linguistic and cognitive disciplines. This review is intended to reveal the close

connections and unified constructivist foundations shared by the pedagogical traditions surrounding each of the pedagogues reviewed below. As a result, it is hoped that certain fundamental principles concerning the acquisition of musicality will be uncovered for further discussion as research data.

Nineteenth-Century American Music Education

One of the very earliest and certainly most successful efforts to inculcate holistic musical development into public music education originated in New England in the last century. This effort was the result of the vision and insight of a trio of American colleagues who greatly admired Pestalozzi's results in Switzerland. These three Americans were Lowell Mason, William Channing Woodbridge and Elam Ives, Jr.

By around 1800, American musical practice hit a low point of critical proportions which Mason felt even surpassed the crisis of Guido's time. As Mason explained it, up until Guido's invention of notation, musicians had no real notation and learned musical literature by accurately memorizing volumes of sacred tunes and texts. Americans, however, had Guido's notational system but didn't know how to use it and moreover, the few songs being used in the churches and schools had been faultily memorized (Mason, 1854, 1967, 10).

The state of American music being ripe for reform, an explosion of activity filled this vacuum in the secular as well as sacred sectors: the formation of music societies, the widespread existence of public support for music instruction in the schools, and the publishing of a surpassing number of tunebooks (Ibid, 9). These tunebooks - significantly not the same as textbooks - amounted to more than two hundred editions in print between 1800 and 1838 and even included European masterworks by Beethoven, Boyce, Handel, Haydn, Mozart, Pleyel and Purcell (Ibid, 32). Even so, Mason, who had traveled to Europe, acknowledged that America still lagged behind

European developments in pedagogy and musical literature for the masses (Ibid).

Concurrently with Mason's efforts, the Reverend William Channing Woodbridge was working on applying Pestalozzi's concepts to musical education. However, Woodbridge's efforts at implementation were continually thwarted by the erroneous thinking of others about arts education: 1) music is impractical and a waste of time; 2) a lifetime is required to become a real musician; 3) only those with a musical gift can really learn music; and, 4) teaching music would open the door to other "frivolous" arts (Ibid, 63-64). Meanwhile, Elam Ives, Jr., of Hartford, published his American Elementary Singing Book in 1830. This tunebook and its suggested pedagogy was clearly designed along the principles of direct experience and sequencing as set forth by Pestalozzi. Positive results were evident in a short period of time and young children taught by Ives soon surpassed adult choirs in proficiency (Ibid, 64).

Through Mason's discussions with and observations of classes taught by Woodbridge and Ives, it began to gradually dawn upon him that Pestalozzi's conceptualization of the teaching-learning process was correct and natural. He saw that gradual skill and knowledge acquisition which progressed from the known to the unknown stood in stark contrast to the traditional memorization and recitation. From this growing realization, Mason deduced that child-centered principles applied to music insured that a child's musicianship was "built up rather than patched up" (Ibid, 65).

Inspired by this information, Mason was able to persuade the Boston school board to include music in the general school curriculum and work of teacher-training and actual instruction began. The resulting success of this literature-driven, child-centered musical instruction in Massachusetts became so consistent and well-known that annual music teacher training academies

were provided in Boston for teachers from all over the country. From 1822 to 1871 Mason managed to have published a steady succession of highly popular tunebooks, two of which were specifically designed to explain Mason's adaptations of Pestalozzi's principles to American musical education (Mason, 1834 and 1871). Mason's influence became so widespread that he came to be known as "the father of American music education". Of course, Guido's solmization concepts overarched all of the pedagogical aspects of the work under discussion. Unfortunately, the Civil War sharply curtailed the momentum of the growing movement.

Sarah Glover and John Curwen of England

At the same time in England, the enlightened Sarah Glover was experimenting with singing classes for children in the general population. Her considerable successes were noticed by John Curwen, a clergyman, who credited Glover with being the first to employ existing songs, rather than contrived exercises, for ear-training and sight-singing purposes (Curwen, 1875, 1986, 6). Curwen saw the moral implications of good music education and fully immersed himself in improving, standardizing and disseminating Sarah Glover's procedures. Curwen's standardized version came to be known as the "Tonic Sol-Fa Method" (Ibid, 15), being a modernization of the phonetic component of Guido's notational system. This latter point is significant, because though the Glover-Curwen pedagogical systems worked quite well, they never got the children into pictorial notation.

Curwen was quite articulate about his own pedagogical thinking, giving due credit to Pestalozzi's notions of 'the thing before the name', 'the simple before the complex', and the 'gradual development of faculty', with emphasis on the melodic component of music from real songs, not artificial exercises (Ibid, 87). Further, Curwen had earned from Nägeli that three principal

concepts should govern the teaching of music: "Time, Tune and Force" [Nägeli's terminology was "rhythmics, melodics and dynamics"] (Ibid, 2). From this, Curwen deduced that since time may exist without tune, and tune without time, and since music cannot exist without tune, melody must be the principal topic of musical development (Ibid, 2).

Curwen's views and practices on music education had a long-lasting effect on musical education in England, and as will be shown later, on America via Hungary. Curwen established a publishing house in England which still produces high-quality choral octavos under the name of J. Curwen & Sons, Limited. Most importantly, his "Tonic Sol-Fa" method clearly established for British public education the principles of key-relationships, the graphic representation of musical time and the mental association of tonal patterns even without staff notation (Ibid, v).

Émile Jaques-Dalcroze of Switzerland

It took the lifework of another Swiss - Émile Jaques-Dalcroze - to bring Pestalozzi's ideas into the mainstream of twentieth-century music education. He concluded that his observations of how learners became musical "revealed a weak relationship between the human faculties that conceive a musical idea and those that carry it out" (Becknell, 1970, 19-22). In order to strengthen the "poor communication between mind and body...thought and execution", Jaques-Dalcroze developed the concept of Eurhythmics. He described this as a double path to musicality: in essence, as the muscular system perceives rhythms, a muscular memory develops. Likewise, as the ear simultaneously perceives rhythms through movement, rhythmic memory is developed (Ibid, 22). Eurhythmics stands as a powerful elaboration of Pestalozzi's and his follower, Nägeli's, original concept about rhythmicity.

A look into the developmental background of Jaques-Dalcroze reveals that his mother was an ardent subscriber to Pestalozzi's concept that music was a means of holistic and productive education for life because of its power to evoke feeling (Brown in Peery and Peery, 1987, 189). As his mother's music student, Jaques-Dalcroze translated this background into his concept of Eurhythmics as a way of promoting the harmonious development of "moral, physical and mental capability" (Ibid). He envisioned that by guiding learners to "examine and interpret their feelings" in the musical environment through Eurhythmics, they would develop a harmony within themselves which would help them to integrate their personalities (Ibid).

Stated at a less esoteric level, Jaques-Dalcroze synthesized from that the development of musicality in all children hinges on summoning their ability to hear musically through feeling musically (Becknell, 1970, 14). In actual practice, he emphasized three areas of musical development in children: solmization for developing a musical ear, improvisation for musical spontaneity, and eurhythmics for connecting motoric and musical feeling (Ibid, 13-14). Yet, in true constructivist style, Jaques-Dalcroze carefully explained on many occasions that there can be no one set method for teaching music because "Children's responses are unpredictable and, therefore, stimulating; and the teacher must be prepared to make the necessary adjustments to meet the responses of the students" (Grentzer, January 1994, 22).

As a composer and active conductor and as a student of Gabriel Fauré, Jaques-Dalcroze was prolific in providing songs and musical exercises for his students. The fame of his effective results as a teacher quickly spread to neighboring countries and beyond. His development of Eurhythmics was a crucial step in musical education, for it provided a formal learning channel wherein movement could exist as a musical experience closely allied to

rhythm and melody. Eurhythmics enabled Kodály and Orff to carry forward their important work in musical literature and pedagogy, for all three were united in their understanding of the unity of music and movement embodied in folksong.

Zoltán Kodály of Hungary

The work of Kodály, his student-colleagues and successors is a key component of this study because it bridges so many disciplines and countries. His own doctoral work was simultaneously in linguistics and musicology, which brought to light the relationships between language and music, which led to his discovery of the role of authentic folksong in the historical development of national musical culture. This discovery completely altered the course of his career as a composer and eventually brought him to focus on literature-based musical education as a national priority for Hungary.

Kodály especially admired the work of other "esteemed music educationalists" - Pestalozzi, Jaques-Dalcroze, John Curwen and Germany's Leo Kestenberg [founder of the International Society of Music Education] (Szönyi, 1973, 26). Kodály's and Kestenberg's synthesis of the ideas of their predecessors include these principles: 1) Music must be accessible to all; 2) Music is to be regarded as a major component of general education; 3) The most effective general music instruction should be centrally-organized and delivered through public education; 4) Well-trained teachers are crucial; and, 5) There must be continuous international cooperation and idea exchange (Ibid, 24-26).

As a world-class composer, Kodály began addressing the issues of music education at the highest professional level. Gradually working his way from his position as theory and composition teacher at the Liszt Academy, he finally arrived at the kindergarten when he was in his sixties (Ittzés, 1993,

interview). The power of the Hungarian example lies in the fact that many educators collaborated in the co-construction of the national music curriculum. Kodály, as an influential philosopher-figurehead, fought the ideological battles so that his protégés were free to do the practical work. Many curious and admiring music educators from outside of Hungary consistently miss grasping the scope of what Hungarian music educators accomplished through this collegial approach. This happens because Kodály [like Pestalozzi] only devised a concept of music education, not a method; he left it to his contemporary and succeeding colleagues to continually invent and reinvent what should be properly known as a Hungarian method, but not "the" method (Kokas, ca 1976, 1-2).

Hungarians routinely make the distinction between the "Kodály Concept" and their own personal methods derived from it. His concept is at once old and new because Kodály organized and modernized principles and techniques used for centuries in European music education into the whole process of music and human education (Nemes, ca 1980, 4). Though Kodály himself never wrote a method book as such, it is clear from the prefaces to his school compositions and from other writings that he did have certain pedagogical procedures in mind (Herboly-Kocsar, 1993, 1). But as László Dobszay, one of Kodály's more famous students, observed: "Anyone who is hopeful that Kodály evolved a pedagogical system or "manufacturing process" by which the ideal music education infallibly comes about, has no idea of Kodály's way of thinking and is in for a big disappointment" (Dobszay, 1972, 16).

Like Pestalozzi, Mason, Curwen and Jaques-Dalcroze before him, Kodály was attuned to the power of collegiality. Hungarian music educators, under his guidance, achieved "...an entirely fresh departure, a completely new

beginning in the history of music..." because their combined effort "...contains the promise of a truly democratic musical culture in which quantity and quality may at last be reconciled" (Kozma in Young, 1964, 134). This fortunate combination occurred because Kodály's vision encompassed the creative and social aspects of musical education in a way which is not dependent on gifted students (Ibid). The Hungarians proved a key principle of Pestalozzi by observing in a great many schools at once how children achieved or didn't achieve musicality, thus they were quick to learn that musical theory could not be taught as a thing apart from the children's musical experiences (Kodály, 1966, 78). Coming around to Pestalozzi in a different way, Hungarian architects of musical education knowingly incorporated key elements of Jaques-Dalcroze's Eurhythmics and melodic training procedures into their national syllabus and teacher-training curricula (Szönyi, 1973, 24). Certain basic concepts of Curwen's modernized form of solmization are incorporated into Hungarian pedagogical practices (Ibid, 20-24). But as a composer and theorist, Kodály also brought the both the phonetic and pictorial aspects of Guido's invention much farther into the twentieth-century than was imagined possible, making the widespread acquisition of musical literacy through relative solmization a modern reality.

Kodály, like Pestalozzi, viewed the overarching purpose of musical education as being part of the larger issue of human and humanitarian education leading toward a more harmonious culture (Dobszay, 1972, 31). Likewise, he had enormous faith in the inherent ability of all children: "...we must consider it a basic tenet that every child's musical ability is capable of development..." (Forrai, 1974, 1988, 45). And again, he said that "The clear enthusiasm and naïve instinct which is a rare gift of adult artists may be found in every healthy child...It would be a pity to miss out on this talented age"

(Vikár, 1969, 14). Kodály also understood, in the same way as Pestalozzi, the need to teach children holistically, for he acknowledged that "Acquaintance with the other arts and with literature are vital to a musician" (Szönyi, 1973, 17).

A fitting synopsis by Dobszay of the pillar principles of the Kodály philosophy reveals solid constructivist connections to the thinking of the other composer-educators: "1) aural culture; 2) musical sensitivity; 3) musical imagination expressed in singing; 4) broad musical culture without relaxation of standard; 5) national tradition; 6) simple yet high-standard musical material; 7) fitting music into the unity of culture and human education" (Dobszay, 1972, 32).

Carl Orff of Germany

Though he himself has not written much, important interpreters of the educational tradition of Carl Orff report the location of his fundamental principles in the philosophy of Pestalozzi. They cite the development of the independence of the learner as the most crucial tenet of Pestalozzi absorbed into the Orff process (Preussner in Thomas et al, 1963, 7). Additionally, Orff's "Schulwerk" concept reveals an intentional metaphor of Pestalozzi's views of perception and learning. Schulwerk is a process which seeks to "elementarize" music into its primeval forms which spring directly from the inner senses (Ibid, 13). Orff pedagogical architects describe three additional ways in which Pestalozzi's philosophy can be found in the Orff process: 1) by beginning musical instruction at least as early as elementary school; 2) by emphasizing the development of musical perception; and, 3) by progressing methodically from simple through moderate through difficult concepts and skills. All three are overarched by a "complete interchange of practice and play, play and practice" (Ibid, 7).

One of Orff's principal biographers terms the Orff Schulwerk concept as "a great educational principle of immediacy" (Liess, 1955, 1966, 58). Orff highly valued the presentational aspect of music, for as he revealed to an interviewer, "for me, music is inseparable from theater" (Orff in Rothstein, 1982). But again, the spiritual and moral aspect of music is found in the Orff philosophy: "In all my work, my final concern is not with musical but with spiritual exposition" (Orff in Liess, op cit, 31). As if underscoring this concept, Orff called his concern with music as "spiritual discussion" shortly before his death (Orff in Rothstein, 1982).

As a composer-pedagogue, Carl Orff sought to unify speech, music and movement in his compositions and teaching (Rothstein, 1982). This resulted in the musical primitivism and presentational drama which characterize his creative work (Liess, op cit, Foreword). These characteristics led naturally to a collaboration with Dorothee Gunther who was looking for a way to reconcile music and dance in the classroom, which resulted in the Schulwerk concept. Her own words give ample insight into how their collaboration served as a catalyst for the Schulwerk concept: "...I wanted to discover a method of reviving the natural unity of music and movement...a method which would...solve the educational problem of awakening in everyone the sense of rhythmic movement, and of stimulating a love of dancing and music making - a general freedom of expression and receptivity" (Ibid, 17).

Besides the common shaping of their pedagogical philosophies by Guido's system and Pestalozzi's principles, one of the strongest agreements between Kodály and Orff occurs when Kodály makes the statement that "...we know that a child goes through the development of the entire race...", in referring to the primitive, presentational nature of children's songs (Kodály,

1966, 45). Also like Kodály and Bartók, Orff categorically rejected serial music by calling it the "opposite" of "musica humana" (Orff in Rothstein, 1982). But unlike Kodály, Orff's successors insisted that singing is not the "primal form of musical expression" and that the axiom that all music education should begin with singing is "untenable" and a "half-truth", while favoring the use of idiophones and body rhythms as co-equal with singing (Keller in Thomas et al, 1963a, 32). But then they make a more conciliatory statement - "no child will keep still while it is singing" (Ibid) - which aligns better with the other composer-educator's position that singing and movement should not be separated in the development of a child's musicality. Paradoxically, Keller reveals that "from the start we use the musical instrument for its original purpose: to provide the rhythmic component of music, combined with the singing voice (the original source of melody)..." (Keller, 1963b, 6).

Edgar Willems of Switzerland

Though born in Belgium, Edgar Willems became the Director of the Geneva Conservatory of Music and was able to follow up on the tradition of musical education established by Émile Jaques-Dalcroze. Willems' professional background as a psychologist, composer and music theorist allowed him to develop a perspective that was especially complementary to those of Jaques-Dalcroze, Kodály, Orff and Pestalozzi, all of whom he cites in his prolific writings. The educational concept of Edgar Willems stands on four philosophical and psychological principles: 1) The rapport between music, humanity and the cosmos; 2) A natural and hierarchical order of musical concepts; 3) A working procedure founded on the prime interior elements of music as opposed to its exterior formalistic features; and, 4) A developmental sequence paralleling that of the acquisition of the mother tongue (WIllems and Chapuis, 1).

In his especially analytic style, Willems felt that musical education must follow a scheme which has as its base the purpose of "humane education". Then, "musical education" can be provided to develop certain human faculties. Within musical education, "pedagogy" can provide guidelines for practical work. Lastly, "specific teaching techniques" can be developed within the pedagogical framework (Willems, 1956, 1987, 2). This analysis is driven by Willems' desire to establish "profound psychological bonds between music and humans" (Chapuis, 1980, 2). He viewed rhythm, melody and harmony as corresponding to the respective physiological, affective and mental aspects of human nature. In his thinking, these three sets of aspects function between two poles, the material [sonic vibration] and the spiritual [art] (Ibid) (Willems, 1975, 57). As Willems himself explained, this is because neither all sound nor even all music qualifies as art. Art "presupposes a love of beauty, an opening up to the suprarational world" (Ibid, 18).

Willems was also quite specific about how musical education should be made universally available to every learner, for, like the others, he saw all people as naturally endowed with all the required elements of musicality: physical, affective and mental (Ibid, 17). Thus, his educational philosophy squarely faced the problems of educating these natural faculties according to the requirements of music as a body of artistic literature (Willems, 1979, 5). This resulted in an approach to musical education which "awakens and develops musicality [harmonious life] from the youngest age, which exists, in potentiality, in every human being" (Chapuis, op cit, 2). In complete agreement with Jaques-Dalcroze and Kodály, not to mention Nägeli, Ives, Woodbridge and Mason, Willlems insisted that musical education should be "a true auditory and rhythmic culture which makes the study of ear-training and instrumental playing easier and more lively without depending on any extra-

musical means" (Ibid). As a consequence, the Willems way of musical education focuses on sound, the movement of sound, "intratonal space", rhythm, intervals, chords, melodies, scales and songs (Willems and Chapuis, 1). And again, like the others, there is complete agreement about the purity of folksong as the core of the literature, for Willems advocated that the most beautiful ones be chosen for teaching purposes (Willems, 1956, 1987, 12). This is because certain ones, he said, are particularly well-suited for the distillation of rhythmic content, others for melodic intervals. Through them, learners can acquire musical knowledge from practice rather than theory (Ibid).

A Composers' Rationale for General Musical Education

With Willems' musico-psychological analyses, the conjunction of historical and modern streams of thought is made complete: music is a symbolized system of knowing and meaning, pedagogy is centered on the construction of meaning, music is a body of literature with innumerable layers of meaning. Thus, a summative section seems appropriate here in order to distill and bring into focus the most essential issues and concerns of the composers and pedagogues who devoted so much of their lifework to bringing music and people together. This seems especially important since so many methodological camps have taken up positions and by so doing, have tended to miss the point of their common constructivist heritage and the larger, supramusical picture described by it.

László Vikár, renown Hungarian folksong collector and analyst, puts his finger on a key issue which ought to unify the music education community. He says:

> "It is well known that the two most apparent manifestations of the human soul are speech and music. But while all concede the importance of language, the significance of

> music is underrated even in the most cultured circles. They regard it only for entertainment and do not recognize the values hidden in it..." (Vikár, 1969, 2).

Supporting this, research into musical and child development underscores three recurring themes: 1) the potentially powerful role music can play in all aspects of a child's development; 2) the tandem effect of general and musical development on the maturation of children's thought processes; and, 3) the superior value of experience in developing musical abilities over innate talent (Peery and Peery in Peery and Peery, 1987, 24). Vikár echoes that "...music has an extraordinary effect on the development of the personality, and ensures in a many-sided way the development of the body and the intellect as well" (Ibid). Erzsebét Szönyi, herself a composer of some international standing, concurs that "Musical education contributes to the many-sided capabilities of a child, affecting not only specifically musical aptitudes but his general hearing, his ability to concentrate, his conditional reflexes, his emotional horizon, and his physical culture" (Szönyi, 1973, 16).

It has become clear that the constructivist composer-educators have a unified answer to one certain rhetorical question: Is the purpose of artistically worthwhile musical education to win contests or to develop famous students? Lowell Mason answered clearly by insisting on teaching music for the highest possible reasons, to "exalt, ennoble, purify thoughts, feelings and associations of the young" (Mason, 1854, 1967, 69). Kodály, too, provided a specific response: "...every person's worth is measured by how much he can help his fellow men and serve his country. Real art is one of the most powerful forces in the rise of mankind and he who renders it accessible to as many people as possible is a benefactor of humanity" (Kodály in Bónis, 1964, 199).

There is also a certain visionary call, in the writings being studied, for a widespread reform of education through music and the other arts. For

instance, Kodály acknowledged that there might even be people who are happy without art. They are not to be envied and educators must spare succeeding generations from such atrophy. This is because he felt that "powerful sources of spiritual enrichment spring from music. We must spare no effort to have them opened for as many as possible" (Ibid, 120). England's Keith Swanwick realized, too, that "...In a real sense we can claim that music is 'education of feeling'" (Swanwick, 1968, 5). Ildiko Herboly-Kocsár of Hungary follows up on this concept by stating that "...The goal of our music education is none other than to shape in the children this sensitivity, this ability to feel music's living vibrations, all of which makes them better able to open themselves to artistic beauty, good and truth" (Herboly-Kocsár, 1984, 94). Thus, the task of musical education must be to awaken and cultivate these forces in learners (Ibid, 129).

Support for the foregoing comes from the positivist views of scholars such as Abraham Maslow, who felt that all of society's efforts should be to prepare the "Good Person" to co-participate in developing the "Good Society" (Maslow, 1971, 18-19). He evidently understood that the positive interpersonal relationships result from learners who have been molded by self-actualization and personal creativity opportunities (Ibid). Maslow suspected that education through art may be more vital for turning out better people than for any artistic products which could result. He cited the fact that only education in the arts seems to have as goals the development of self-actualizing, whole human beings (Maslow in Avila et al, 1971, 226). Continuing along this line of thinking, he also saw that in order to meet society's rapidly changing requirements for survival of the individual, education must prepare people who can improvise and invent - or in other words, be capable of creative work and not necessarily focused on the finished product (Ibid, 228). As Jenö

Adám, who was the first to work out a comprehensive pedagogy based on Kodály's philosophy, put it "...We are speaking of the greatest work which has as its content and aim: the more humane man" (Adám, 1979, 1). In the same tradition, Willems felt that "Art for the sake of mankind" should replace "art for art's sake" as an axiom (Willems, 1956, 1987, 129). An American conductor, A. Harold Goodman, recognized that "The spirit of man needs to be fed, and music can assist in this spiritual realization" (A.H. Goodman, 1990, 39).

The composers and pedagogues under study have been quite clear on how reform must be used to accomplish the lofty goals of music as more-than-entertainment. "Music is an indispensable means of human education. It must be restored to the prominent role it played in schools in ancient times and in the Middle Ages, a role it thrived in and which it amply repaid" (Dobszay, 1992, 52). Elaborating on ancient curriculum structures, Kodály reminded the Hungarian educational establishment that "It was not for nothing that Mousiké was the central subject in the Greek school" and pointed out that it was Greek education which "best achieved harmony in physical and spiritual civilization" (Dobszay, 1972, 30). Why deny "one whole side of our culture" by failing to enrich human experience "...by a specifically musical view of it..."?, is the question posed by England's Derek Cooke (Cooke, 1959, x). And it is no secret that Carl Orff and his associates envisioned aims which reach higher than music alone, through the development of general culture by "education through music" (Liess, 1955, 1966, 61).

For the more practically-minded within our educational establishments, there have been some interesting discoveries. Some educators report that higher scores in science, math and reading tests derive from the integration of the arts into these subjects (H.M. Williams, March 31, 1992, 5). Experience with daily singing lessons in one hundred and twenty [now one hundred and

fifty] Hungarian schools has shown positive effects on academic achievement, socialization skills and overall interest in general culture (Kokas, September 1971, 53). Indeed, children do not automatically bring their musical or other artistic culture with them, which means that educators must introduce children to these aspects of their heritage. In other words, part of the duty of musical education is to also transmit a culture and its system of values at least as much as technical skills (Dobszay, 1992, 95), but it is also understood that doing so affects learning in other subjects.

But Willems nicely brings the issue to conclusion when he says that intelligence is not the creator of art, but the elaborator of it (Willems, 1956, 1987, 128). According to him, one of the overarching and formative principles of art is emotional, such as " the love of music and the intense desire to realize it" (Ibid). He called for "...The awakening of musical faculties in the child...particularly in the littlest ones..." and charged all pedagogues with finding the best means for providing this for all children, regardless of native ability (Willems, 1956, 1987, 7). He observes that formerly, an organized pedagogy for achieving this was felt to be unnecessary when musical education was only available for the obviously gifted. He perceives, however, that there has been a change: "...musical education has taken on great importance. One has comprehended the value of music from the human point of view and is trying to make musical education accessible to every child" (Willems, 1954, 235). Lastly, he cautions that musical education and instrumental instruction are not the same and should not be confused. The former is superior and is concerned with the basic musical elements, which he elaborates as "rhythmic sense, musical ear, melodic sense, note names, scale degree, improvisation and harmonic knowledge" (Willems, 1956, 1987, 104-105). This should begin early and assure the "sensory, physical and affective

bases of musical education" which especially focus on the artistic rather than the scientific aspect of music. This, he says, is "education as opposed to instruction" (Ibid).

Summary

This chapter has outlined the genesis of ideas which frame this study. As has been shown, each of the past and present composer-educators discussed in this study have historically scaffolded onto each other's discoveries and creations, constantly renewing and carrying forward their common basic principles in new ways. Further, it has been shown that they have not only valued musical education for its musical content, but also for its higher purposes of elevating mankind through the holistic development of the individual. In the following chapter, specific data about how the individual becomes musical are gleaned from the philosophies and teaching tradtions of these musical minds and presented and discussed in pursuit of a conceptual, rather than a methodological, model of musical education.

CHAPTER IV

A CONCEPTUAL MODEL FOR LITERATURE-BASED MUSICAL EDUCATION

Overview

This chapter reports on the results of a triangulation of research findings derived from the literature described in chapters 2 and 3, qualitative interviews, analyses of music as literature and the pedagogy of music, which data is further augmented by data gathered in three exploratory studies. This combined information is organized and interpreted through the lenses of related and non-related disciplines, especially those of cognitive psychology and language literacy education.

The resulting conclusions are presented as a conceptual model which is intended to inform actual classroom applications of the principles of musical acquisition. Though pedagogical literature concerning music usually defines the learner as a child, and while it is true that beginning early makes for more natural learning, this unfolding model is intended to apply universally to all ages.

Any such procedural framework for musical education must account for the content, the learner and the teacher. Further, the end result of such an education must be ultimately qualitative (artistic) rather than quantitative (technical). Above all, it must be principle-driven so that its possible applications are numerous and vital. Being principle-driven allows teachers the freedom to draw on observations of how musical learners learn in order for the teacher to continuously create and refine an endless vocabulary of approaches and teaching techniques derived from content. Thus the focus of the model is on how the teacher and learner co-construct musical meaning through interacting with music as literature. Therefore, a definition of musical

literature, which functions as content, is the first aspect of the model to be defined here.

Defining a Literature Base for Musical Education

An enduring "musical culture is built on two pillars: living folksong and composed music" (Herboly-Kocsár, 1984, p. 75). Folksong plays a dual role in musical literature. It not only helps to develop an understanding of the great masters, it also inspires them to create new forms, styles and works of artistic merit (Vikár, 1969, p. 5). This happens because "...music history and folkmusic are such twins that they really belong together and not only presuppose, but complete each other. All research into music history sources end up in folkmusic, and all the peculiar national styles can be traced back to folkmusic" (p. 5). These realities moved the English composer, Ralph Vaughan Williams (1987), to admit that in the folksong we have the assurance of true vitality for all new art (p. 39).

Each national body of folksong sustains a great number of relationships within and without its own culture. Separate elements of a country's folksong can be found in the music of other nations. But only one particular combination of them constitutes a single nation's oral tradition, which combination combines a unique "interplay of native traditions and foreign influences" (Eösze, 1962, p. 57). These features necessitate a systematic study of near- and far-Eastern, African and other non-Western folksong and art music systems. The mutual influence of all of these upon each other cannot be denied. For instance, extensive pentatony exists in Chinese, Japanese, English and American folksong. Nor can the striking connections between Arabic, Spanish, and south-central European scale systems be overlooked. Advanced study can explore microtonal scale systems after the mastery of the flexible intonation required by authentic a cappella choral practice.

Within a culture, a certain stratification of folksong occurs, with the oldest, most ancient forms in the deepest layers. These in turn nurture many newer melodic styles. Once a melody finds entry into the tradition of a community, oral transmission not only guarantees its survival, but gradually and subtly refines it (Karpeles in Sharp, 1965, pp. xiv-xv). Transmission is not all that happens to a good melody. In time, many variants evolve which greatly enrich the body of literature yet still remain within uniform style groups.

In addition to the body of adult folksong existing within a culture, there is a coexistent yet autonomous children's song tradition within each culture (Kodály in H. Szabó, 1969, p. 5). Composer-educators have come to hold children's folksong in the highest regard. Kodály especially valued its fluid dismantling and recombining of poetry with only the most worthwhile musical elements as each new variant comes into existence (Erdely, 1965, p. 56). He equally treasured the imagination and invention of children which continually develop and elaborate the four basic children's song forms into "a thousand and one patterns" (Kodály in Young, 1964, p. 145). For these and many other reasons, Kodály (in Bónis, 1964) was adamant that teachers cannot ignore nor be ignorant of this vast children's resource. He felt that it should be the teacher's "most urgent task" to learn them in order to "get close to the soul of the children" (p. 48). Forrai (1994) explains that especially in singing games, the combination of movement with singing is rooted in ancient practice and constitutes something much more complex than the simple singing of a song (npn).

Looking at the same matter from the standpoint of creativity, Moog's (1976) research substantiated that children's oral-tradition constitutes one of their most important natural forms of music-making because "they belong to that borderland where...fantasy and reality meet" (p. 121). Further, he could

find no instances of a child singing an original song of the child's own creation who could not already sing a familiar children's song (p. 120). This implies that children who master their musical mother-tongue will in turn actively contribute to the expansion of it as a body of literature.

Alfred North Whitehead (1929, 1957) identified a general educational principle which is easily fulfilled by folksong in the development of musicality: "...The best education is to be found in gaining the utmost information from the simplest apparatus..." (p. 11). Dobszay (1992) similarly makes the point that most genuine folksong contains a degree of feeling and inner complexity equal to Bach's music which can be represented by simpler surface structures (p. 96). Folksongs are superior among musical forms, so "you may trust the songs" (Vikár, 1993, p. 3). In them "is the inexhaustible storehouse of simple forms, rhythms and melodies...which is most suitable to serve as a means of approaching the classics" (Vikár, 1969, p. 5). Dobszay likens folksong to a "treasure-trove of melodic systems" which encompasses all possible pentatonic and diatonic scales and modes, especially those ancient ones which connect with early composed music (p. 35).

Educationally, Kodály "rated the best folk music alongside the works of the classical composers" for the development of children's musical faculties (Kokas in Barkóczi and Pleh, 1982, p. 6). Orff likewise recognized the critical importance of folksong in musical development and his personal way - which he termed "Schulwerk" - of connecting it to composed literature (Preussner in Thomas et all, 1963, p. 12). Like Kodály and Orff, Vaughan Williams (1987) saw that a fine folksong is "a supreme work of art" in miniature form, but limited in scope for specific reasons: 1) It is intuitive, not "calculated"; 2) It is strictly oral and neither benefits nor suffers from the combination of ear and eye; 3) It is applied rather than theoretical music; 4) It is melodic rather than harmonic in

concept; 5) It is not bound by conventions of musical theory which gives it a certain rhythmic freedom in fitting unequal syllable lines to melody; and, 6) Folksongs are very economical in scope though they may "pack all one has to say into a tune of some sixteen bars instead of spreading oneself out into a symphony" (p. 23). For all of these reasons and more, a chief concern of composers and educators should be the collecting and transcribing of folksong (Zuckerkandl, 1973, p. 13).

Archaic layers of folk music fully connect with later composed music, an important connection which suggests how musical education should flow from the standpoint of literature and content. This is because Western European folk music merged with art music very early on through "...a healthy reciprocity of folk and art music..." (Dobszay, 1992, p. 26). Dobszay further reckons that the newer English-language folksong traditions are rooted in this prolific period of reciprocity (p. 100). The matter is made emphatic by Vikár's (1977) statement, forged from decades of analytical work, that the melodic analyses of folksong often reveal "unique form variants" which can lead to the discovery of "important historical relationships" with composed music (p. 16).

One of the prominent features of the early folk- and corresponding composed music is their universal use of pentatonic (five-note gapped scales) and hexachordal (six-note ungapped) scale types. The structural possibilities for Western pentatony alone add up to 66 five-tone scales having five possible modes, or arrangements, which means that there are potentially 330 such scale types only using five notes (Bardos, 1984, p. 291). Many of these naturally exist in Western folksong. This is highly significant because this phenomenon allows the construction of a literature base which results in the simplification of pedagogy while delaying the introduction of diatonic harmony. Pentatonic and hexachordal song literature is neither major nor minor, which

allows children to avoid focusing on the Viennese Classical period both too early and to the exclusion of so many other meaningful stylistic considerations in musical literature (Erdely, 1965, 77).

Pentatonic and hexachordal musical structures are not less valid or less complex in comparison to those of diatonic music. They are simply different - but equal - in value. Since most of the separate body of children's songs are built on these scale systems, it is clear that in this ancient but still-thriving body of children's songs and singing games is found the logical and natural starting point for children's musical education. Not only that, but it is also directly connected to the same origins of Western music as the adult folksongs.

Since this model requires the gradual and continual overlapping of folksong and composed music, attention must be paid to the central principle of style in the development of an effective musical curriculum. This principle gives sufficient time for learners to explore one particular historical period of art music in connection with its corresponding folksong (Dobszay, 1992, p. 93). Defining what and how to teach stylistically requires careful judgment on the part of teachers, partly because of the complex trends, melodic groups and multiple layers of interpretation possible within each period. The teacher must gauge the flow of this information according to the growing musicality of the learners (p. 93).

This mention of style also emphasizes two other key issues - giving teachers control over their own curriculum and keeping the focus of the curriculum centered on children. The literature selected should be developmentally-appropriate and categorized into style groups transcending several historical periods. Within these groupings, the teacher needs to discover, through analysis, the common elemental features, such as rhythmic and melodic content and issues of formal and harmonic structure. Lastly, the

literature should be organized according to musical similarities and matched to age and ability levels within the school (Szabó, 1979, p. 25) and (Sharp, 1965, pp. 171-172). Even then, only half of the curriculum organization is complete. Though the focus here seems to be on the literature, it is only really for the benefit of the learner through providing successful learning experiences.

The work of several top scholars involved in musical literature research for the sort of educational purposes described in this model is combined here in a list of stylistic types which reflect the folksong-composed music reciprocity. This list is especially important to the setting up of the curriculum recommended here which is designed to provide a parallel learning track between folksong as microcosm and corresponding art music as macrocosm. The European liturgical chant traditions spring directly from ancient Hebrew and Greek sources and also connect forward into European folksong. From these combined sources spring the French and German composed song repertory of the fifteenth- and sixteenth centuries (Erdely, 1965, p. 129). These genres include the German Rundkanzone, Laude and Geisslerlieder, the French trouvère-troubadour songs, the rondeau and the ballad (Dobszay, 1992, p. 37). All of these abound with a wealth of important formal structures, modal scale systems and complex meters which appear in current folk- and composed music (H. Szabó, 1969, p. 32).

Similarly, appropriate folksong forms should be matched to the music of Mozart, Haydn and Beethoven for an in-depth study of the Viennese Classical Period. Schütz, Monteverdi and Bach should be the basis for Baroque study (Jaques-Dalcroze in Reichel, 1965, p. 151), to which Purcell, the "English Bach", should also be added (Herboly-Kocsár, 1993, pp. 1-2). Renaissance sources include Palestrina and Lassus 2- and 3-part motets, canons and short

dance-form melodies, then John Dowland's Book of Ayres. The Medieval core for English-speaking children should be Dufay 2-part hymns and the simpler forms from the Musica Brittania, Volume Four (p. 8). Lastly, the new tonal systems of twentieth-century music can be derived from certain specific parallels in medieval music (Dobszay, 1992, p. 11).

Centering this literature on natural learner development requires abandoning the historical sequence of music in favor of how learners grow musically. During the mastery of their culture's children's and adult folksong base, learners are gradually introduced to pivotal art music singing and listening experiences which provide an overview of music history. As they develop notational fluency, folksong study continues alongside systematic, in-depth studies of historical stylistic periods and of composer's idiosyncratic styles within those periods, always undergirded by parallel folksong studies (Herboly-Kocsár, 1993, pp. 1-2) and (Dobszay, 1993, npn).

How all of these considerations are kept centered on the learner is part of the meticulous teacher-training required by this model which is overarched by three of Pestalozzi's organizational principles: 1) Familiar material should lead to new songs; 2) The progression should be from simpler to more difficult works; and, 3) Sensitivity to the circumstances of the class should guide the final selection (Forrai, 1974, 1988, p. 88). Faithful observation of the principles of literature research being discussed here is credited by Hungarian teacher-trainers for their national success in musical education (Herboly-Kocsár, 1993, p. 1). Contrived exercises and technical drills are scrupulously avoided in favor of authentic oral-tradition and serious composed music. Though commercial music may have an admittedly minute place in the curriculum, it must not overshadow the profound musical and spiritual value of enduring music (Dobszay, 1992, p. 20).

The power of a well-researched literature base becomes apparent when one realizes that through fifty carefully-selected songs delivered to kindergarten children in the most intelligent and sensitive child-centered ways, the "chief basic phenomena" of the history of music and of their culture can be "implanted in their psyche" (Kodály in Bónis, 1964, p. 140). Year after year, learners acquire correspondingly more complex songs, all of which are revisited later as a veritable storehouse of intervals, rhythmic patterns, modes and harmonies which gradually become part of the learner's literacy.

As inheritors of the centuries-long mutual interchange between oral-tradition and art music, the composer-educators naturally saw deeply into its pedagogical implications. Though the educational opus of each major composer-educator is certainly worth a dissertation of its own, some general conclusions can be reported which are supportive of this model. Above all, there was a gradual dawning of the realization that the key to high quality and enduring musical education resided in an authentic folksong literature base. The musical pedagogues contemporary with or immediately after Pestalozzi relied on songs specifically composed for pedagogical outcomes, but by the end of the same century, Jaques-Dalcroze was writing frequently and powerfully about the musical and general artistic value of folksong. Shortly thereafter, Kodály and Bartók actually began making tangible practical connections between living folksong, newly-composed art music and public school instruction in musicality.

Béla Bartók once told László Vikár how he treated folksong in his synthesis of high art music. One way was to directly quote a folk melody without any changes, perhaps with an accompaniment composed out of its scale material. A second way was to compose a folk-like melody which is not actually from the oral-tradition, again paying strict attention to the basic tonal,

rhythmic and formal materials of a given folksong genre. Bartók's third approach was to freely compose in folksong style, using his own original rhythmic and tonal formulae in a metaphorical way (Vikár, 1993, pp. 5-6).

Though certainly not the most voluminous, Kodály's school opus seems to be the most elaborated and purposeful, seeking to draw learners nearer to art music in matters of tonal language and compositional techniques (Ittzés, 1972, p. 20). His school compositions are finely crafted miniature works which focus primarily on Renaissance and Baroque polyphony and Romantic harmonies. Kodály's main intention in composing them was to develop fluency in reading notation in the context of great folksong and art music (Herboly-Kocsár, 1993, p. 1). In summation, the Kodály compositional model for schools can be characterized as a collective "guide...to the great figures of music history" (Ittzés, p. 36).

Carl Orff's pedagogical compositions are less numerous than either Kodály's or Jaques-Dalcroze's and even less direct in their intentions. Entitled Music for Children, Orff's compositions were not necessarily composed to be interpreted by children through performance. Rather, they were intended as models which children should respond to with music of their own. It is "music to be discovered, not composed....an indicator, a signpost" (Keller in Thomas et al, 1963a, p. 35). Music for Children is part of Orff's larger concept of Schulwerk, both of which are not intended as "a 'full course' of musical education", nor as a method or systematic plan. Rather, their principles are to foster an awakening of musicality within the learner. Orff tried to write music for children "from the child's own viewpoint", which he called "elemental experience" (Liess, 1955, 1966, pp. 59-60).

Compared to the output of Kodály and Orff, Jaques-Dalcroze's school compositions are prodigious in number. The comprehensive catalog of his

oeuvre amounts to 108 pages and includes pedagogical as well as concert works. Though Jaques-Dalcroze strongly advocated the use of folksong in musical education, his compositions reveal that his study of his country's folksong was superficial at best. In fairness to him, some of the pivotal research in folksong ethnomusicology had not been published before he began the development of his pedagogical interests. But there is no question that he was well along in defining the principles of musicality through his concept of Eurhythmics. I believe that if he had lived long enough to see the results of the comprehensive folksong classification of Bartók and Kodály, he would have followed suit with similar research in Switzerland and his school compositions would have taken on a much different form.

Edgar Willems seems to have been more of a compiler of exercise books, though his successor, Jacques Chapuis, has followed up with literature research in some important historical genres. Willems commented that the approach taken in his compilations for school use is to provide experience in sounds to engage the auditory sense, note-naming to engage the intellect, and notation to engage visual perception. He theorized that this triple combination of hearing-reading skills was necessary to unify in the learner's mental processes the seven sounds of solmization with the seven absolute pitch names. This unity was necessary to "...create...a rapid automatic association, indispensable to reading and writing, to musical dictation and improvisation" (Willems, 1956, 1987, p. 103).

The Imperative for the Cultivation of Taste in Musical Education

Composer-educators have continually referred to their concern about the quality of music which should be used in education. Dobszay explains that this is because to really seriously carry out musical education, there must be a fundamental commitment to differentiating between good music and bad

music. This is not a division between art music and folksong, or classical music and popular music, but a clear distinction between "noble and ignoble" (Dobszay, 1992, p. 16). This means that becoming musical is not a passive absorption of knowledge, but a purposeful passing from one plane to another, perfected by a high level of personal involvement. Once children acquire existing values through diligent imitation, then they possess a personalized foundation for "properly shaping their own world" (pp. 21-22).

First impressions in listening to music are crucial, for they will often determine a child's musical taste for a lifetime. "Good taste developed early is difficult to ruin" (Kodály in Forrai, 1974, 1988, p. 30). The most important determinant of high musical taste in children is the quality of the musical literature used in their instruction, beginning with the songs they sing. Children "should be led to masterpieces by means of masterpieces" (Szönyi, 1973, p. 13). The end result of this kind of musical education is the musician who "...knows what good music is...guided by...familiarity with literature...theoretical and practical knowledge and...educated taste...acquired over the course of many years" (Kodály in Bónis, 1964, p. 199).

Other researchers concur that sheer early exposure to certain kinds of music greatly influences musical taste. This exposure also determines the development of cognitive listening skills bearing on style recognition (Peery et al, 1987, p. 21). This challenges a prevailing myth among educators that learners just beginning to develop their musicality cannot get into good music right away, but have to pass through all kinds of inferior music in a difficult upward climb to real music. Kodály (in Vikár, 1969) also challenged this adage. To them, "...If someone's taste is unspoiled yet, he will surely appreciate the good..." (p. 3). Therefore, teachers must overcome the false notion that only watered-down art can be learned by children, who are actually

the most appreciative of all pure art. This natural affinity of children for the beautiful requires that their musical curriculum be comprised of only the very best "undeniable masterpieces" (Kodály in Dobszay, 1992, p. 19).

The qualities of "undeniable masterpieces" can be found in children's games and folksongs just as frequently as in the acclaimed classical large-form works. The essential characteristics are not the program or mood of the music, but its qualities of "...being music in the real sense of the word" which makes the learner more respectfully aware of its artistic realities (Dobszay, 1992, p. 22-23). Kodály saw the profound simplicity and inner-cohesiveness of masterworks as a metaphor for nourishing food. He points out that parents wouldn't dare think of raising children on a steady diet of sweets (Kodály in Bónis, 1964, p. 188).

Cecil Sharp (1965) noted that "...good music purifies, just as bad music vulgarizes..." and warns that "...the effect of music upon the minds of children is so subtle and far-reaching that it is impossible to exaggerate..." (p. 172). Kodály (in Bónis, 1964) asked why music educators are so surprised that children who are taught either no music skills or are taught via inferior musical literature "cannot get further than the music of the trashiest hit" (p. 142). Because children seldom forget what is internalized in childhood, their first songs must be chosen with great care, because they will soon become part of the general public consciousness (p. 130).

Langer's concept of "significant form", discussed previously on page 6 of Chapter 2, stands as a prime determiner of meaningful music. Mursell (1956) perfectly reinforces Langer's view by observing that "...[bad] music is not expressive, not significant artistically". He further defines bad music as that which is "...manufactured for a specific purpose instead of being created to express a poetic feeling..." (p. 62). Thus, there is a double content involved in

good singing literature, the musical and the poetic. The renowned Orff collaborator, Gunild Keetman (1970, 1974), says that the poetic content of children's musical literature is something which must be scrutinized and protected from the "supermarket" influences which defeat the educational productivity of good literature (p. 11).

Just as Matthew Arnold advocated memorizing examples of poetry of "undoubted...excellence" to serve as "touchstones" of the highest taste in literature, we may likewise rely on the pillars of artistic music (Sharp, 1965, p. 173). There is no denying that in the recognized, incontrovertible classics can be found everything beautiful and good which can be expressed in the language of music. There are certain musical equivalents to the dramas of Dante, Shakespeare and Goethe and to the paintings of da Vinci, Rubens and Rembrandt. Musical education must reach toward them and they must also include the masterworks of past and present women composers, such as Hildegard of Bingen, Mary Paradis, Amy Beach and many more. It must be remembered that the musical masters were not only continually connected with all that was happening in the musical world of their time, but also with all that had preceded them, not to mention that in our time, we are still connected to them (Vikár, 1964, p. 4).

This connection has always existed in the folksong of civilizations (Sharp, 1965, p. 173). Folksong, by its very nature of unconscious production, is essentially good music, "constructed on well-defined, intelligible principles" which came before "the sciences of harmony and counterpoint were thought of" (p. 45). Sharp also held that the mind which has been nurtured on authentic folk melody will intuitively refuse the shallow attractiveness of manufactured music because folksong is the training ground of good taste. Kodály and Sharp were in close agreement on this as evidenced by Kodály's

oft quoted statement that "Folk music is a storehouse of masterpieces, the school of good taste..." (Kodály in Vikár, 1969, p. 6).

Willems (1956, 1987) concurred that all children must begin with the folksong of their own cultures, "which have issued forth from the genius of their race", wherein "beauty and musical taste" prevail above all other considerations (p. 12). In like fashion, Sharp championed the folk artists from whom he learned thousands of profoundly-structured melodies. He says that the true folksinger soon tires of any artificial melody in favor of the centuries-old tunes passing around in the inherited culture. "The town songs", he says, "have never taken root in the country; they have been ousted in the struggle for existence by the superior and more permanent attributes of the peasant song" (Sharp, 1965, p. 139).

General Principles of Musicality

Robert Schumann said that "developing the ear is the most important thing of all" in the development of musicianship (Bónis, 1964, p. 186). Erzsebét Szönyi (1973), a contemporary Hungarian composer-educator, explains that "Developing the inner ear to the highest degree is indispensable" and that "one should be able to transfer notation immediately into sound and vice-versa in the mind, without recourse to an instrument" (p. 17). In brief, a musician is able to see what he or she hears and to hear what he or she sees (Kodály in Eösze, 1962, p. 80).

Kodály (in Bónis, 1964) also frequently taught that a true musician possesses a well-trained ear, intelligence, heart and hand and that all of these must develop "together, in constant equilibrium" (p. 197). As a teacher-trainer interprets this, the ensemble of general musical skills which should be taught to children are rhythm, musical memory, musical hearing, intonation, notational reading and writing, harmonic hearing and its 'inseparable'

counterparts, polyphonic recognition and the ability to feel musical form (Herboly-Kocsár, 1984, p. 7). To this list Jaques-Dalcroze (in Becknell, 1970, p. 24) adds the learner's ability to listen to and hear music, to read music, to phrase and shade without merely imitating, to transpose, to improvise, to learn melodic and harmonic laws, to understand a general history of music and to be able to quote the works of great composers, and to understand, feel and love music.

The Orff scholars add that children should also learn to conduct as early as possible so that they can function as directors within their classes. They emphasize that the kind of conducting intended is natural, born of movement connected to an inner response to music (Keller, 1963b, pp. 6-7). Kodály also felt that conducting should be taught early, even saying that children should watch great conductors and learn to conduct with them in their minds (Kodály in Bónis, 1964, p. 191).

The role of memory in musical development cannot be overstated. It is clear that even the most gifted and recognized composers have consistently "achieved their results by reshaping the musical elements in their memory and not by a creativity drawn on nothing" (Dobszay, 1992, p. 67; see also Zuckerkandl, 1973, pp. 270-72 for an elaboration of this concept). Dictation - the ability to write down the music one hears - is wholly dependent on musical memory, which includes inner hearing and fluency with sound-names and rhythmic values (Willems and Chapuis, 1971, p. 2). Musical memory is developed simply through meaningful use (Czövek, 1979, p. 43) which includes the development of relative hearing, which should be given "first place" in the development of the musical ear (Willems, 1956, 1987, p. 61). Willems includes this aural and memory development in a category which he calls "sensorality". He cautions that learners who are too reliant on perfect

pitch often sing falsely, lacking pure intonation, when they are denied the development of relative hearing as part of their musical memory (p. 62).

The perception of musical structure, the prerequisite to meaningful musical appreciation, is also dependent on a combination of musical memory and an awareness of the structural elements of music. Musicians make sense out of music by using their knowledge of form to enable their hearing to group notes into logical structures (Forrai, 1974, 1988, p. 61). Willems says this is because the three fundamental elements of music - rhythm, melody and harmony - interact in musical organization according to certain laws which are manifest in form (Willems, 1975, pp. 52-54). Composers also have to have this sense of form, "since their work will be to fill it with content" (Kodály in Eösze, 1962, pp. 13-14).

As to the nature of this content, A. Harold Goodman, orchestral conductor, iterates that there is also an emotional-spiritual side to the perception of musical form. Thus, teachers and students must also become very sensitive to the expectation, suspense and unexpected within music. Musical interpretation is not genuine without this capacity to sense the building of tension and its consequent release and especially the emotional impact of this inner content of music (A.H. Goodman, 1967, p. 39).

This raising of the issue of sensitivity suggests the consideration of an often forgotten principle of musicality - the humane one. Forrai (1974, 1988) cautions that even though the specialist may focus on the musical development of children, the development of the whole child must be kept in harmonious balance (p. 42). "More important even than musical considerations are the joy of singing, the pleasure of the game, and the group experience. This true spirit of play will eventually also have a positive influence on the achievement of musical goals" (p. 27).

"All great musical minds and visionary educators have understood that music is *inside* the person and not an external thing" (Willems, 1975, p. 11). Therefore, two kinds of consciousness must be attended to in musical training: active and passive. Willems (1979) felt the latter is what has been sadly lacking in Western education, which he explained as receptivity and listening (pp. 8-9). Willems also faulted some schools of twentieth-century composition which have sought to do away with traditional musical values and even the very elements of music. He cautioned that these cannot escape one fact: the material and spiritual nature of music "is not discovered only in music itself, but also, and especially, in the musician as a human being" (1956, 1987, p. x).

Paralleling Willems' thinking, Kodály taught that educational practice had to ensure the dual apprehension of musical knowledge through emotional and intellectual channels. He saw this duality being developed through the ability to read and write music and to recognize and analyze the formal structure of compositions (Szönyi, 1973, pp. 53, 69). This is because a good musician should guess what is coming next in a work which is not known, and can definitely know in a familiar piece what is coming next. That is, the music lives in the musician's mind and feelings (Kodály in Bónis, 1964, p. 190). This explains Jaques-Dalcroze's (1930) insight that "...the musicality of a person is always dependent on the possibility of analysing musical acts. It is not enough to vibrate in order to be a good musician..." (p. vii).

Musicality can be developed intellectually as long as there is an innate richness of spirit and emotion. But developing emotional depth is not as easy for even the most naturally musical learner (Czövek, 1979, p. 41). Not only does music require the complementary development of rhythmic, melodic and harmonic consciousness, it must also be remembered that music is "the art of sounds". This means that the acquisition of musicality must be guided by an

"artistic supra-mental consciousness", or intuition (Willems, 1979, p. 9). "Intuition presides over the harmonious unity of a work, which escapes the wisdom of the listener, and even often, that of the composer. The intellect seizes its effects, but the real nature of intuition transcends reasoning" (1956, 1987, p. 127).

It is clear that technical proficiency alone does not constitute the development of true musicality. Musical interpretation is the art of finding out the composer's intentions and meshing them with what the individual also feels and knows about that music (Gardner, 1983, p. 114). Kodály confirmed this principle to his composition students: "...do everything in your mind first before either writing it or playing it. In this way, if the composer has truly felt the work, it will likewise affect the hearers of it" (Kodály in Bónis, 1964, p. 191). "Performers *are* the interpreters and composers; they constantly make small changes in the works that they perform..." (Gardner, p. 115). In this kind of musical world making performers actually "decompose" known music by taking it apart and transforming it into something more personal and substantially different (p. 114).

Parental attitude toward music is an essential factor in how children become musical (Moog, 1976, pp. 105-120). Children must sense that their parents love music and know musically and then that it is acceptable for them to participate in the music-making of adults (Dobszay, 1992, p. 88). "I could not name a greater educative force than to let children make music alongside adults. That is particularly so when it is not the adults who condescend to the children, but the children who are elevated to the musical activity of the adults" (p. 88).

It is agreed that the earlier one starts, the better, and that the optimum age for musical receptivity in children is between the ages of 6 and 16

(Szönyi, 1973, p. 13), but as is shown in a separate study appended to this chapter, adult learners are also quite capable of making substantial progress. In either case the attainment of perfection is paradoxically unattainable for the musician, for as Robert Schumann said: "There is no end to learning" (Bónis, 1964, p. 199). Or, put differently, "to be an artist, one must be a constant student - there is no ultimate end to art, only progress or deterioration" (Campbell-McInnes, 1939, p. 61). There will always be new music, interpretations, performances, and listening and appreciating opportunities because there will be no end to manifestations of mankind's musicality.

Cognitive Operations in the Acquisition of Musicality

Whitehead (1929,1957) taught that education should be an endless cycle of three stages of intellectual progress: romance [thesis], precision [antithesis] and generalization [synthesis]. The first is the experience of first contact, the second is the acquisition of relationships and grammar and the third is the ability to use classified ideas (pp. 17-27). Similarly, Bruner (1966) outlines three modes of learning: enactive, iconic and symbolic (p. 11). For him, enactive is experiential, iconic is perceptual organization, and symbolic concerns literature and literacy. Variations of these same three themes have recurred repeatedly in the writings of composer-educators and suggest the following operations for the acquisition of musicality: Expressive and Experiential, Aural, and Literate.

Willems (1956,1987) gives a general overview of these operations by reporting that the major difficulty of music education is to get learners to progress from preconscious musical life to the acquisition of consciousness of musical elements to conscious musical life (p. 9). Kenneth S. Goodman (1986) essentially outlines three parallel operations for the development of language literacy: Learners begin with whole speech, then become aware of the parts,

and finally see the relationship of the parts to each other within the whole (p. 19).

The three musical operations interrelate and interdepend and are therefore only somewhat hierarchical. For instance, although musical hearing must be developed from the songs first expressed and experienced by the students, they cannot learn to sing those increasingly complex songs without developing proportionately more powerful hearing faculties. Additionally, truly autonomous literacy in music cannot be achieved without the ability to hear tonal and structural connections which have been previously expressed and experienced, then aurally sorted out into relationships. After fluent literacy is achieved, many more new and more complex songs and other musical works can be expressed and experienced. In this way, it can be seen that there are subtle and differing degrees of interdependence among these operations.

Literate operations are more dependent on aural and expressive-experiential operations than conversely. The aural operations are, in their turn, more likely to be dependent on the expressive/experiential in which the tonal pool is formed and felt. The deeper into the literate operations the learner goes, the more he or she employs the other two. This is also a language literacy principle because children "learn language as they use language to learn, and meanwhile they learn about language...all three kinds of language learning are simultaneous in the context of whole speech events" (K.S. Goodman, 1986, p. 16). Musical skills are just as tightly interrelated and interdependent. "For example, reading may not be separated from the development of inner hearing, nor writing from the practice of reading" (Herboly-Kocsár, 1984, p. 7).

To summarize, the Expressive/Experiential musical operations involve the learner in singing and moving to accessible songs. The Aural involve

contextually hearing, identifying and establishing the symbol system of the relationships heard and felt through the songs and movement experienced. Finally, Literate operations entail developing fluency by delving deeper and deeper into the symbolized relational meanings of significant musical events.

Expressive/Experiential Schema: General Principles Applied to Musicality

The twin principles of experience and expression in music are self-evident in that musical sound must somehow be produced in order to be perceived. It is this perception that the teacher must help the learner access. John Dewey (1938, 1963) said it best: "...there is one permanent frame of reference...the organic connection between education and personal experience..." (p. 25). Pestalozzi (in Jedan, 1981) likewise stressed "...the maintenance of a continuity of experience" (p. 50). As for expression, even at the adult learner level, "personal participation is worth more than anything else" (Kodály in Bónis, 1964, p. 198). This is particularly so for music because the arts are inherently expressive which makes them essentially communicative which invites participation (Dewey, 1934, p. 244). Or, "...in apprehending musical tones we become aware of a unique, incomparable blend of reality, activity, and meaning" (Zuckerkandl, 1973, 139).

Musical experience has two aspects, the internal and the external. Music is usually perceived through the external "experienced" event, but the internal has priority "since it is our feeling which gives sense to a musical structure" (Ansermet, 1971, p. 211). This is evidenced by the finding that children respond powerfully to music and demonstrate the enjoyment of it before they acquire the ability to verbally describe it (Zimny and Weidenfell in Peery et al, 1987, p. 11). One reason this happens is that children are naturally quite sensitive to the "emotional charge" in music and therefore quite

open to its influence. They first discover music through personal positive experiences with it (Kokas in Barkóczi and Pleh, 1982, p. 6).

Deliège (1975) speculates that there is an "expressive plane" underlying a "content plane" in musical meaning (p. 151). Jaques-Dalcroze (1930) understood this when he said that "...children should not be taught rules until they have had experience of the facts which have given rise to them...the first thing to be taught a child is the use of all his faculties..." (p. vi). Thus, inner feeling must first be expressed and experienced to bring imagination into play before it can be expressed as formal knowledge (Soldan, 1965, p. 37).

Like Jaques-Dalcroze before him, Kodály clearly intended for children to "express their musical ideas intelligently" without having to struggle with the technical terminology of what they are experiencing (Szönyi, 1973, p. 48). Using these expressive and experiential faculties is often referred to in the profession as "music-making". This is not idle jargon, but a very standard way of operating in the specialized classroom: "Music must be made actively. One may speak a little about music, one can listen to music, but especially one must make it! Making music is not the moving of fingers, but the act of using the ears, heart, brain and soul" (Nemes, ca 1980, p. 4).

In the Orff tradition, children should become aware of music as "an expression of being" through expressive experiences which are antecedents to formalized music because children thereby actually experience "the great variety of possible modes of organisation" (Liess, 1955, 1966, p. 60). These are called "elemental music" experiences, which help the "learners locate themselves in music", which is a function of the development of their general musical abilities (Keller in Thomas et al, 1963a, p. 35). Conductors often observe the lack of these elemental music experiences in professional

musicians who, though having superb technical command over their voice or instrument, perform unmusically, lacking the expressive quality so vital to music-making (p. 35).

It is interesting to note how accurately Pestalozzi (in Jedan, 1981) described the cognitive power of expressing and experiencing. His term for it - "Anschauung", or sense-perception - implies the interaction within the pupil of activity, experience, intelligence and knowledge, or "...the nearly imperceptible border line between experiencing and abstracting..." (p. 48). Moog's (1976) research likewise defined musical experience as a totality formed from the mental mediation of hearing, thinking and feeling musically in combination with other kinds of experience (pp. 28-31). Through this combination of mental activity and kinds of experiences, four different kinds of musical consciousness develop: Sensory, or material; Rhythmic, one-dimensional but definitely dynamic and motoric; Melodic, two-dimensional and emotionally affective; and, Harmonic, three-dimensional, deliberate and human (Willems, 1979, p. 11). Willems adds that all of these are overarched by a four-dimensional intuitive and supramental consciousness. Though very few individuals innately possess the skills needed for musical cognition, research shows that they develop those skills in relationship to musical experience (Peery in Peery et al, 1987, 8).

It is crucial to consider that since music is so totally dependent on the auditory sense, musical perception differs from other kinds of perception. For instance, music is sequential in time as its sounds flow in linear relationship to each other. Sight and touch do not have this temporal structure. The mind must therefore learn to grasp musical form as a "succession of events" over a passage of time. This ability to mentally transcend the "immediate now" is called the "mental present", which is greatly influenced by and bears great

influence on, "the action of experience" (Moog, 1976, p. 32; see also Zuckerkandl, 1956, pp. 117-141 for a detailed perspective on this point).

This mental present allows a child to relate the sounds of a melody to those preceding and succeeding as if the mind were recording the melody in order to discern its form. Though relying primarily on sensory perception, this process requires mental agility derived from abstract thinking. Because of this, young children are "still scarcely capable of truly original creation" in music and therefore rarely explore all musical possibilities in their imaginative singing (Moog, 1976, p. 120). This begins to explain why authentic children's singing games are so rich in variants but confined to a small tonal and structural vocabulary. It also favors giving children concrete musical experiences with existing literature rather than forcing the issue of their creating new songs. Willems says that for children to be spontaneous and expressive does not necessarily constitute creativity but is the use of musical imagination which is "...first reproductive and then constructive" (Willems, 1979, p. 27).

This conclusion parallels a similar psycholinguistic principle. That is that the rules of grammar are learned by experiencing language. From this experiencing, children infer the rules of structure (K.S. Goodman, 1986, p. 13). In like manner, musical elements and their relationships are to be drawn from living experience, not explanatory methods (Forrai, 1974, 1988, p. 33). The mention of inference reiterates the governing role of intuition in either language or musical cognition. Langer would say that "To understand the 'idea' in a work of art is...more like *having a new experience* than like entertaining a new proposition" (Langer, 1942, p. 263).

Apparently, the great value of acquiring musical knowledge through experience is that each rhythmic pattern, melodic turn or harmonic structure

which is later carefully mastered in solfa will be "committed indelibly to a child's memory" and available for recall when unknown musical literature is explored (Szönyi, 1973, p. 47). What is crucial is that these experiences be sequential in complexity but global in content, meaning that "all elements of music" - i.e. rhythm, melody, harmony, form etc. - "should be present from the beginning", so that learners may "be exposed to the rich wholeness of it", then later helped to sort through it. The first such experiences are with children's singing games "which naturally transmit a certain musical intuition to children" (Dobszay, 1993, npn). In this rather simple learning process, children create new melodies from the song material already in their memories. The capacity for abstract thought thereby develops simultaneously with the abstraction of structure from experience (Forrai, 1974, 1988, pp. 15-16).

Concerning the Expressive/Experiential aspect of the acquisition of musicality, one question remains: What, specifically, is to be expressed and experienced? The answer is found in the following exploration of the acquisition of melody through singing, rhythmicity through movement, harmonic hearing through a synthesis of both and the integrating influence of intuition as manifest by improvisation. Each of these elements coexists in music, and depending on the style group, each may play a dominant or recessive role in musical works being experienced. Through this coexistence, each strongly influences the other. This interplay is what must be continually expressed and experienced by the learner during the course of musical development.

The Acquisition of Singing as the Expression and Experience of Melody. When asked to sum up his concept of music education in one sentence, Kodály said: "Sing! Sing! Sing!" And on this point, the experts are

unified and clear. For them, singing is the easiest way for anyone to acquire musicality. It is the surest means for the development of the all-critical musical ear (Kokas in Barkóczi and Pleh, 1982, p. 7) and the specific physical and intellectual processes associated with perception. Through developing the ear, singing also simultaneously prepares the learner for the literate use of notation (Kokas, 1971, p. 28). Klara Kokas found through her research that:

> ...the most direct path to an insightful understanding of music is through singing. Singing is a full experience in itself. It involves the whole body and exerts a specific psychological effect through breathing and internal resonances...every sound human body is capable of doing it (Kokas in Barkóczi and Pleh, 1982, pp. 6-7).

Kokas also provides insight into how singing actually develops musicality. For instance, through imitation, children learn songs, rhymes and musical movements. This first stage develops a musical memory in children from which motifs can later be isolated and solmization attached to identify the enormous variety of possible sound relationships (p. 8). This rapid and facile development of such powerful skills happens because "...the personal and relatively 'non-technical' nature of the human voice makes early expression more likely..." (Swanwick, 1988, p. 66) for the greatest number of people (Eösze, 1962, p. 84).

Through singing, children are fully able to enjoy the aesthetic depths of music. It is natural to them partly because they can employ it without any previous acquisition of technique. Above all, "children are extraordinarily susceptible to music" and have "an eager desire to sing" (Sharp, 1965, p. 171). But the ease with which singing musicianship is acquired also pushes the importance of aptitude into the background. This is because even children with average abilities can be led to sing high choral masterpieces with relative

ease, while "only exceptional instrumentalists can perform repertoire of comparable greatness" (Kokas, 1971, p. 28).

Working independently, three important and unassociated researchers in children's musical development arrived at the conclusion that singing expression actually develops sooner than speech in infants (Moog, 1976, p. 61; Kokas in Barkóczi and Pleh, 1982, p. 7; and Forrai, 1974, 1988, p. 14). An infant cannot speak at first, but begins to express musical sounds before being able to say words "because it is easier and more natural to sing" (Vikár, 1969, p. 2). But there is a complementarity between these two faculties: "Speech cannot substitute for song; song is not suitable for everyday conversation, but enters into such regions where nothing else can penetrate" (p. 2). The important conclusion is that since speech and song coexist, care must be taken to cultivate them and their possibilities simultaneously.

The Acquisition of Singing - Basic Procedures. Singing must be taken seriously even though young learners may be acquiring it through singing games. Singing games are key to the kind of expressive singing which communicates emotion (Kokas in Barkóczi and Pleh, 1982, p. 7). Even adult rural folksingers communicate emotion with great artistry through slight alterations of tempo or vocal quality, nuances of rhythm and ornamentation (Lloyd, 1967, npn). The mandate to teach expressive singing is underscored by an extraordinary experience of Cecil Sharp (1965) when he was collecting songs in rural England: "One old woman once sang to me out in the open fields, where she was working, and between the verses of her song she seized the lapel of my coat, and looked up into my face with glistening eyes to say, 'Isn't it beautiful?'" (p. 134).

Turner says that we are naturally inclined to participate in these oral performances primarily "to be delighted" (Turner in Turner, 1985, p. 13).

Therefore, songs should be sung for their own beauty in order to evoke the aesthetic response of children to that beauty (Adám, 1944, 1971, p. 92). This is first accomplished by rote teaching of songs in a way which reveals their artistic content to encourage an aesthetic response from the children (p. iv). Likewise, genuine acoustical experience must pervade every singing session so that children are hearing what they are singing and using this hearing to adjust and control their own singing so that they realize that they are the source of the beauty (Herboly-Kocsár, 1984, p. 9).

Many educators expect too little of children when they sing. In reality, good singing should occur frequently with good intonation, at a developmentally appropriate pitch with self-correction. Additionally, beautiful singing is also characterized by careful phrasing and pronunciation (Forrai, 1974, 1988, p. 32). Furthermore, children are perfectly capable of singing clearly with a balance between flow and articulation which favors the wholeness of a melody over its parts (Dobszay, 1992, p. 66). Appropriate teacher modeling of good singing is also often overlooked or underestimated by teachers. Research confirms that a knowledgeable teacher using sound principles is highly effective in getting children to sing throughout their possible voice range (Goetze, 1981, p. 3).

Bennett's (1986) research reveals that there are five stages of "vocal awareness" in children: 1) voice exploration; 2) description of where the voice locates and how it feels in those different locations; 3) range- and timbre-approximation with teacher and others; 4) awareness of vocal range and quality in self and others; 5) production of specific vocal sounds on demand; and, 6) pitch-matching with voice. Unfortunately, she further observes, most singing classes usually start at stage six (Bennett, 1986, p. 53).

The physical side of singing involves the breathing mechanism and vocal cords, which are simply voluntary muscles. The mental side of singing involves those thinking processes dependent on various aspects of aural memory, which are often called "the musical ear". Quite simply, learning to sing is a matter of cultivating the vocal cords while simultaneously bringing them under the control of the musical ear. While considering these skills, it is important to realize that almost all individuals can sing in their chest register, which is the speaking voice. Most people who are told or think they cannot sing have simply never located and gained control over other registers of their voice.

The problem becomes clear when one knows that there are at least two registers - the chest and the head - in the human voice. Children, and even adults, need to be taught to locate their head register (Bennett, 1986, p. 53), then taught to coordinate, or control, both registers with the developing musical ear (Forrai, 1974, 1988, p. 43). Once location and control are occurring, children easily progress to extending their voice range preparatory to developing the vocal independence necessary for part-singing (p. 4). Since all individuals are different and develop at different rates, the wise and adept teacher must therefore convey that all learner's voices are good and "in different stages of learning, growing, and improving" (Langness in Bennett, 1986, p. 53).

For several years, I have routinely recorded the singing progress of individual children in my public school singing classes in order to find ways to implement and assess the effectiveness of my teaching application of the vocal- and aural development principles being discussed. To provide enrichment for this dissertation, I have done an analysis of the singing of kindergarten children from one particular school year. These forty-eight

children were distributed among three half-day kindergarten sections which met with me separately for twice-weekly half-hour singing and ear-training lessons. The last 5 to 7 minutes of each session were reserved for children to record their singing in individual rotation. By the end of the school year, children had taped as few as three or as many as five samples, depending on when their turn came up in relation to the school calendar and individual absences. Each child's samples were rated according to the criteria listed in Appendix A. These criteria were devised from the principles of singing acquisition described above.

The curriculum consisted of child-centered singing, movement and ear-training activities structured around authentic folksong and children's singing games. Each class session usually began with a special seasonal activity designed to playfully involve the children in locating and controlling their voices in the context of known small-range songs. This is the type of teaching recommended by Goetze (Goetze, 1981, pp. 4-5).

The most significant finding of this analysis is that 92% of the subject children were singing in tune with facility throughout the age-appropriate range of a major sixth by the end of the school year, whereas at the beginning of the year, 50% were not singing successfully at all. The two children shown as being unable to sing by year's end were twins who were chronologically very young in comparison to the other children. Though not captured in the data collected, it was observed that these two children did have successful, though inconsistent, singing experiences.

The Acquisition of Singing - Issues of Intonation. One of the demands on the musician made by Western musical literature and performance practice is correct intonation. At first glance, it may seem that this means to sing reasonably in tune, but the requirement actually goes much deeper. There are

actually several tuning systems currently in use in Western music, which fact has a great bearing on this issue. Originally, there was "Pythagorean intonation", which depends on the ability of the trained musical ear to hear very fine deviations from the half-step, which is the smallest notated increment in the Western scale systems, which are all built from arrangements of whole- and half-steps. Scientifically, the normal half- step is measured in cents, one hundred of which constitute a normal half-step (Sadie et al, 1980, 15: pp. 485-487).

During the so-called Golden Age of a cappella singing - the Renaissance Era - the highest artistic choral music was carefully composed to subtly accentuate and play upon the very audible acoustic phenomena created when purely intoned intervals were sounded together in harmony (Sadie et al, 1980, 15: 485-487). The harmonic overtones thus generated cause a definite brilliance and ring to be heard and felt by the singers and the audience. This kind of literature and consequent performance requires a very high level of training and rehearsal techniques which see deeply into musical structure. The singers must learn to discriminate variations in intonation of just a few cents and continually adjust "on the fly" to the other parts being sung.

There is yet more artistry involved - the required acoustical adjustments differ between compositions in the major mood or minor mood scales. In practical terms, using one example in solmization to illustrate, this means that the sol-related re [a pivotal interval in the major mood], is sung a few cents higher - or "wider' - in order to produce acoustical brilliance by keeping the neighboring mi perfectly in tune. However, in the minor mood, the pivotal interval of the la-related re is sung a few cents lower to meet certain acoustic conditions by allowing the mi to be sound slightly lower (Thész, 1983, npn).

With the rapid rise of instrumental technology and virtuosity simultaneously occurring in the Renaissance, certain mechanical limitations began to arise. Instruments with fixed frets or keys could only make intonation adjustments within certain physical parameters, no matter what the performer heard interiorally. Adding to these limitations was the continent-wide European effort to standardize pitch. These problems necessitated the creation of a "tempered" tuning system which would compromise certain intervals within a scale to make them consistent and mechanically reproducible from instrument to instrument within every absolute pitch key (Sadie et al, 1980, 18: pp. 660-674). J.S. Bach's innovative and monumental cycle of compositions entitled "The Well-Tempered Clavier" is a careful artistic working out and exploration of the structural and formal possibilities of keyboard music in all possible keys according to several tempered systems (20: pp. 337-378).

To fully appreciate not only this achievement of Bach's but also the difference between Pythagorean and tempered systems, it may be helpful to know that in the Pythagorean system, A-sharp and B-flat, for instance, do not sound the same. The B-flat is actually lower in pitch because the number of cents for each are different. However, on all instruments but the unfretted strings and the trombone, only one key or combination of keys is assigned to A-sharp and B-flat, which always produces the same tempered pitch (Bardos, 1984, p. 312). Only the most adept of musicians can "favor" such notes into a pure relationship on wind and string instruments, often with diminished tone quality and by creating a plethora of other problems throughout the rest of the instrument's scale. However, the keyboard instruments cannot at all be favored simultaneously being played.

The above discussion about tuning systems has a great bearing on the acquisition of singing. First, if musical education is going to take the artistic training of the ear seriously, it must account for the highest possible art form likely to occur within the literature. This is clearly a cappella singing, which is always dependent on pure intonation. Even twentieth-century composers value this high choral art and still write a cappella choral works. Bartók and Kodály and their students, among others, specifically wrote demanding a cappella miniatures for children's choirs which in turn, thrust Hungarian children's choirs onto the international scene as exemplars of fine hearing and singing. In general, all European choral performance traditions have carried the a cappella tradition forward from ancient times into the present.

There is yet another issue associated with intonation and the acquisition of singing. In order for learners to really control the pitch of their voice, they must learn to critically hear what they are singing. For this reason alone, any sort of instrumental accompaniment at this developmental stage interferes with the learner's coordination of hearing and singing (Goetze, 1981, p. 3), and therefore, also with any future possibility of their being able to correctly interpret a cappella literature. Even over a hundred years ago, John Curwen (1875) decried the over-emphasis on the piano for singing instruction, citing not only intonation problems but also the "faulty adaptation of absolute pitch" required by the tempered tuning of the piano which also defeats the development of all-important relative hearing (pp. 2-3). Add to this the wide individual variance in piano timbre and inattention to regular tuning in the public schools, not to mention that schools are rarely able to afford the finest pianos. There are even worse instruments used in classroom music which totally defeat any chance of fine tuning the child's ear just when he or she is most susceptible to it developmentally.

Adding empirical support to the position that developmental singing should be unaccompanied is the research of Atterbury and Silcox (1993), who found that piano accompaniment had no positive influence on the acquisition of singing by kindergarten children. This held true even though the songs used were perfectly within the known average singing range for the five- and six-year-old child (p. 40). The Hungarian scholars are fond of pointing out that just as infants don't learn to walk with crutches, then neither should children learn to sing by depending on instrumental accompaniment. Rather, instrumental accompaniment should be just that, and sparingly applied as required by literature and stylistics only after children are singing securely (Forrai, 1974, 1988, p. 85). Well-trained singers who are first taught to hear acoustically pure can easily adjust to the tempered sound of any piano accompaniment but trying to accomplish this the other way around presents enormous difficulties. Furthermore, the acoustic flexibility developed through pure intonation is often required by modern atonal music which may fall outside of any pitch system (Bardos, 1984, p. 313). The principle is to teach down from the perspective of the highest art, not up to it from the bottom.

The foregoing fairly mandates that the culture of singing within a school must include a uniform, well-blended sound, with pure intonation. Ildiko Herboly (1984) affirms that there can be no lasting musical experience without achieving a true acoustical experience simultaneously. She says that true intonation is consciously felt by the child as the "height and depth" of sound (p. 9). Cecil Sharp (1965) found that folksingers, even those eighty or more years of age, sing "with very pure intonation" (p. 135). He attributes this to "constantly singing without accompaniment" and observes that those with faulty voices got that way by "singing habitually with instrumental accompaniment" (p. 136). Pedagogically, this means that children should be taught to sing each song by

rote in pure intonation modeled after the teacher's singing, not by following the piano. In like manner, choirs should be rehearsed through sight-singing instead of parroting the piano or fishing for their notes through the accompaniment. Teachers and conductors themselves must be able to sing, hear and read independently of any instrument (Szönyi, 1973, p. 14).

The unaccompanied singing of melody is not the end of singing acquisition, only the beginning. The next step is to spontaneously tune to another voice singing a related melody, as in part-singing (Eösze, 1962, p. 76). This developmental aspect of intonation requires great spontaneity and voice-ear control, because the singer must actively and continually listen and adjust spontaneously. At first, this is easiest in simple two-part homophonic texture, later in linear polyphony (Ittzés, 1972, p. 4). Surprisingly, perfect unison singing can only be ultimately achieved through two-part polyphony of the sort taught in the Renaissance. This is because the experience of adjusting the two parts forces the ear to produce pure intervals (Kodály, 1966, p. 78).

Forrai gives a practical checklist for the development of fine, well-tuned singing: 1) Keep a careful balance between the range of the song and the developmental capabilities of the children; 2) The teacher should keep the pitch of the songs reasonable; 3) The teacher's model of singing is crucial! It must be an example of clear intonation, pronunciation and especially of the joy of singing; and, 4) Besides modeling excellent singing, the teacher must be able to redirect and shape the children's singing in a positive and encouraging way (Forrai, 1974, 1988, p. 44).

Secure singing is something developmental, achievable by all learners if competently taught. In this process, there is an interesting co-dependency between the singer and the literature. If the initial song literature is too

complex in range, internal intervals or rhythm, the child will not have sufficient vocal and aural dexterity to sing it. If the children do not learn to sing accurately, they will never be able to approach all of the possible literature. Therefore, what is sung is also a critical factor to consider for at least four reasons: 1) Above all, the individual learner's self-confidence about singing; 2) Vocal flexibility; 3) Aural control over the voice; and, 4) The development of high musical taste as previously discussed.

A natural and playful approach to voice exploration and the singing of songs with the "simplest melodic content" in the beginning stages gives children the knowledge and confidence to develop a positive attitude about singing (Goetze, 1981, 3). In support of this, Bennett (1986) advocates the use of songs which complement the natural vocal development of the child. The parameters outlined for song selection are the variety of rhythmic patterns, simple tonal progressions, the close resemblance to natural speech and "a vitality not diminished by extended repetition" (p. 53).

Simple pentatonic and hexachordal children's singing games with a narrow range are especially helpful to the successful acquisition of singing (Goetze, 1981, p. 3). Even older children who have missed participating in the songs and singing games of the 'children's society' still can and should be introduced to them through the singing curriculum of the schools (Kodály in H. Szabó, 1969, p.5). Playground observations by this author and colleagues confirm that many old songs are still in vigorous circulation as well as newer jumprope and handclapping chants and songs, and old and new counting-out rhymes. Including this vital oral tradition of children in the curriculum should be a prime concern of the music specialist.

Singing as a Prerequisite to Instrumental Musicianship. Singing is also the focal point of the relationship between musicality and the playing of

instruments. Robert Schumann quoted Lavignac, whose solfège course is one of the pillars of European musical training: "The pianist who is only a pianist, is not a good pianist" (Bónis, 1964, p. 188). Willems (1956,1987) explained this by warning against superficial results, "particularly those obtained by instrumental practice". In other words, "Progress in the order of instrumental technique, separated from musicality, gives more flowers than the roots can nourish" (p. 9). He points out that children sense this and realize they constantly need the help of their teacher, proving that this kind of teaching/learning is really training rather than true education (p. 9).

In truly musical instrumental playing, the fingers do not really play the instrument. It is the musical ear, "that complex network of brain functions and levels of thought", which plays through the fingers (Willems and Chapuis, 1971, p. 2). Or, "the fingers should follow the will of the head and not the other way round" (Kodály in Bónis, 1964, p. 191). "He for whom *music* is not the principal subject will never become a good musician...music, which the player wants to express on his instrument, will not come to him unless he studies *music*...with continuous ardent attention" (p. 195). Clearly, children should already read and analyze simple musical forms before beginning instrumental study (Szönyi, 1973, 16). Robert Schumann is known to have consistently encouraged students to learn to read through and hear a new musical piece in the mind before actually playing it on an instrument (Kodály in Bónis, p. 192).

But how is all this to be accomplished? "...Everyone who studies an instrument ought to sing first. Singing, independent of an instrument, is the real and profound school of musical abilities. Before rearing instrumentalists we must first rear musicians and then everything will change for the better..." (Kodály in Ittzés, 1972, p. 1). Willems (1956, 1987) explains that the continual development of auditory sensitivity through singing is a prime governing factor

in instrumental playing, because ultimately, the intonation of the instrument is quite dependent on the "musical quality of the performer" (p. 55). And one of the shortest paths to this kind of finely-tuned hearing is through the reading, singing and hearing of inner parts, as in choral singing (Szönyi, 1973, pp. 16-17).

Singing doesn't help kinesthetically, but the "vigorous aural activity which takes place in singing" guides the playing of an instrument. This is because "music is the principal subject, the instrument merely the first secondary subject" (Dobszay, 1992, p. 26). But this is also because good instrumental playing requires the constant synchronization of aural and motoric memories, which is easier and quicker to establish vocally than instrumentally. For instance, correct breathing and singing inwardly are prime factors in fluent instrumental playing, and they are best learned through singing (Willems and Chapuis, 1971, p. 2). However, it must not be taken that one learns to sing, then leaves singing in order to go on to an instrument. To the contrary, singing is not only the point of departure, but must be kept apace with the student's development through the stages of instrumental virtuosity right up through professional composition" (Willems, 1956, 1987, p. 16).

Two global insights into instrumental playing are simultaneously inclusive of all musical learners at any stage of development, and liberating because they place instrumental musicianship within a larger whole. First, Willems defines four domains of instrumental playing, all derived skills easily developed in singing musicianship: 1) By ear, in the reproduction of known or newly heard melodies; 2) By reading, including first sounding out an unknown melody in solfa; 3) By interpretive playing of artistic literature in which memory assists the reading; and, 4) By improvisation, which includes the simplest inventions by children (Willems and Chapuis, 1971, p. 2). Second, Kodály

(1966) says that one can be a fine musician without playing an instrument, and indeed, admits that not all people should play one, especially if they don't want to, and those that want to, shouldn't be started prematurely (p. 79).

Rhythmicity - The Expression and Experience of Rhythm. Children's singing games contain one more ingredient which has a profound effect on the outcome of singing instruction. This is the potential movement naturally implied and inherent in children's songs. These song-forms are "...built from pairs of bars according to the need of children during play. The song is always accompanied by some sort of movement" (Vikár, 1969, p. 9). This occurs because singing and movement strongly influence each other (Forrai, 1974, 1988, p. 18). Because of this principle "...rhythm and movement act as a musical entity on the child...the song interwoven with movement is a much more ancient and complex phenomenon than the song in isolation: music and movement should never be separated" (p. 22).

Forrai (1974, 1988) sees that the melodic and rhythmic experience of song and its movement greatly affects learners by allowing them to simultaneously perceive in auditory and temporal ways (p. 13) Thus, it is apparent that all of the modes of nervous, muscular, emotional and intellectual expression and experience are found in "ideal combinations" in the poetic and musical rhythms of folksong (Jaques-Dalcroze, 1930, p. 224). This led Orff to develop his concept of elemental musical experiences around the expression of pantomime and scenic play through their "media of work, gesture, mask and picture" (Keller in Thomas et al, 1963a, p. 33). Turner (1985) calls this kind of expression and experience "enactment" (p. xvii).

Some scholars believe that the distinction between musical rhythm and melody has been interpreted into them but is not natural. This is because "there is no melody which is not rhythmical as well, and there is no rhythmic

succession of notes which does not constitute a melody". However, there is no question that certain kinds of music have a more rhythmic cast and that certain other kinds have a melodic one (Schindler in Thomas et al, 1963a, p. 97). Nevertheless, movement, music and speech, united through rhythm, are embodied in the ancient Greek concept of 'Orchesis' (Pratsika, 1965, pp. 43-44). Drawing on this ancient concept, Jaques-Dalcroze (1930) rightfully concluded that rhythm must be something larger than music alone. He came to view it as a "natural force" permeating physical, mental, nervous and muscular operations (p. v).

Because it is known that our modern word for rhythm anciently meant movement - from the Greek *rhuthmos*, from *rheô*, to run (Willems, 1954, p. 7) - rhythmic education must include experience in musical and plastic (movement-based) rhythm, each of which obey different rules (1979, p. 12). As mentioned in connection with the experiencing of melody, children's singing games are where singing and movement are one and the same. They are both explicitly forms of expression and can only exist as musical experiences (Dobszay, 1992, pp. 55-65). Vikár (1969) attributes this phenomenon to musical intuition, observing that even aged folksingers would stand and move while singing for the researcher, simply because they could not dissociate one from the other (p. 14). Sharp likewise discovered many English folksongs which were danced or dramatized by the singers or said to have been danced or dramatized when they were younger. He regarded this as a remnant of ancient times before these "sister arts" went their separate ways (Sharp, 1965, p. 134).

Frank Martin (1965), yet another Swiss composer who was concerned with musical education, further saw rhythm as a creation of our mind through the union of two faculties. These faculties are thought as expressed through

language, and the rhythmic application of number consciousness founded on physical movement. But Martin was also fascinated by an "indescribable something else, a tinge of mystery, for when the two are combined, the whole is greater than the sum of its parts" (p. 21). Zuckerkandl (1956) observed that this may be so because musical rhythm and meter obey the "field concept", whereby an "ordered action of forces" govern their part-to-whole relationships. Jaques-Dalcroze directly addressed this totality through rhythmic education designed to be a preparatory musical experience for creating equilibrium and harmony between a well-developed ear, imagination, intelligence and temperament (Hatt-Arnold and Croptier, 1965, p. 50).

From a pedagogical standpoint, giving children much experience singing and playing singing games will simultaneously develop their melodic and rhythmic faculties. Through such seemingly simple means, several aspects of memory are accessed. Because rhythm itself is so pervasive and complex, the nature of rhythmic memory is correspondingly so. But the overarching principle of rhythmic memory is that it depends on motoric imagination, or movement (Willems, 1954, p. 236). However, motoric memory is greatly aided by the expressive and affective properties of melody. Eventually, the mental memory becomes capable of reading and writing rhythm through its knowledge accumulated by experience as long as the link with movement remains intact (p. 236).

Children are exceptionally susceptible to rhythmic training because movement is so natural to them. Teachers must learn to key into the natural movement language of children, who have an inner drive to express their feelings without necessarily "making a pronouncement", knowing "what" is being said, or what is influencing the expression. "If the adults were to heed this 'language', the effect of this statement...would be much more powerful

than its words could ever be" (Günther in Thomas et al, 1963, p. 37). It is important for the teacher to understand that these primitive and elemental dance forms which follow "the childhood stages of humanity" are not likely to be found in formal dance training (p. 38). Jaques-Dalcroze also realized this which led him to understand that what the teacher actually needed was training in musical sensitivity through movement. For instance, well-prepared teachers provide a constant succession of recorded masterworks to which children creatively move. This movement is purposeful, for these teachers select sections from large-scale works which have specific rhythmic, melodic or formal features obvious enough to invite children to respond.

Moving from plastic to conscious rhythm occurs when teachers help learners in 1) Locating the *tempo beat* of a song as the rhythmic point of reference; 2) Feeling the *prime beat*, or *strong beat system* which organizes the measures and which is superior to the tempo beat; and, 3) Finding the *subdivision* of the tempo beat, which may be binary or ternary, and is inferior to the tempo (Willems, 1954, p. 234). Approaching the development of rhythmic consciousness this way allows the mind to determine all rhythmic patterns in relation to current measures and to hear and feel any change of meter which may occur. This approach to rhythmicity is based on drawing conclusions from listening and moving. These conclusions are intuitively formed by the learner's comparison of the proportions of sound through the several different beat layers which are felt, not mentally arbitrated. This task becomes impossible for those teachers whose own conception of musical rhythm is some sort of mathematical order (p. 235).

Kodály (in Bónis, 1964), always the advocate of what children can really accomplish, called rhythm the real domain of kindergarten. Like Orff and Willems, he saw rhythmicity developing from early experience in song and

language rhythm through singing games, rhymes and poems. He was insistent that paralleling their vocal and aural development, children could and should even achieve virtuosity in polyrhythm as it existed in their song literature (p. 143). In conclusion, the composer-educators all agree that rhythmicity is acquired contextually, as a natural part of children's life. From this perspective, says Willems, teaching will be less theoretical but more natural, accessible and spontaneous.

Harmonic Hearing - The Expression and Experience of Harmony. A multi-layered interdependency also exists in the case of harmony, which is dependent on the acquisition of melody and rhythmicity. Singers must be secure in vocal and aural control as well as in rhythmic feeling in order to sing in harmony. Harmonic hearing and activity require the mental ability to think of several things at once (tracking the spatial proportions of rhythm and the temporal sequence of melody) while simultaneously distilling vertical sound relationships (harmony) from the two.

It seems logical that two-voice literature should be the first harmonic experience. How surprising, then, that traditional musical education has insisted on jumping abruptly from monody to four-voice harmony. Common sense requires the gradual transition from unison singing and hearing to two-, three- and then four-voice harmony (Willems, 1956, 1987, p. 51). Of course, harmonic writing may also go way beyond four voices in certain kinds of choral and instrumental ensemble writing.

Within harmonized literature, there are two possible textures, homophonic and polyphonic. The former is rhythmically simple while the latter requires great rhythmic independence. Polyphony is more than simple harmonization, but a very elaborated form of multi-part music. An "epochal discovery" of European music (Zuckerkandl, 1956, pp. 104-105), polyphony is

the natural consequence of melody and reached its artistic pinnacles in the Renaissance and Baroque eras (Ittzés, 1972, p. 2). Yet, polyphony is still used in twentieth-century music, and all composition students today learn counterpoint, the study of polyphonic writing.

Because harmony is multi-dimensional, as was earlier pointed out by Willems, the developmental curve for harmonic acquisition is much longer than for melody and rhythm. Harmony requires high-level mental syntheses of melody and rhythm, so there are certain developmental stages leading to them. Herboly (1984) says that these steps toward harmonic hearing are primarily a matter of quality rather than quantity (p. 9). Beginning in Kindergarten, children can gradually be helped to develop harmonic hearing first through developing their polyphonic sense in these ways: 1) Singing while moving to the beat and rhythm of songs; 2) Call-response singing; 3) Singing and clapping the rhythm of the same song; 4) Singing and moving or playing a rhythm instrument on the accent beat; 5) Indicating the same accented notes with a sung note instead; 6) Performing a rhythm ostinato while singing; 7) Performing simple rhythm canons; 8) The same, using the rhythm of a song as a canon; 9) Singing in two parts from teacher signals using literature such as the Kodály Let Us Sing Correctly; 10) Singing simple folksongs in canon; 11) Singing pentatonic melodies over a repeated major chord which is also sung; 12) Performing constantly changing rhythm patterns while singing a song; 13) Performing a written line of rhythm while singing a different melody; 14) Clapping written measures of rhythm as indicated while singing; 15) Switching between singing and tapping the rhythm of a song on cue; and, 16) Actual two-part singing (p. 9). Thus, harmonic hearing can actually be expressed and experienced before actual knowledge of it takes place.

One of the guiding principles of harmonic experience is that whichever part children clap or sing, they must also have experience with the other part so that they know to what they are adjusting and interweaving (Herboly, 1982, p. 32). Most importantly, Herboly cautions against the over-theorizing of harmony. Rather, the teacher must see opportunities in the singing literature for the children to be awed and amazed by the sheer beauty of the harmonies which they themselves produce in their own singing (p. 71). In this way, the children will always desire to hear and produce more harmony without having to always analyze it (p. 2).

Improvisation - Spontaneous Musical Expression and Experience. Rhythmic and melodic improvisation should be continuously encouraged throughout the musical development of children (Willems and Chapuis, 1971, p. 2). This should be done "at every stage possible" from the beginning stages on through to the achievement of virtuosity (Willems, 1979, p. 14). Improvisation is very natural to children, who, from the age of two, begin to sing short speech phrases or even one word. An overriding principle, however, is to not push children to perform their improvisations or compositions in public. To do so would be to impose the wrong motive on the true musicality of children (Willems, 1956, 1987, p. 14).

Children's improvisation is intuitive, instinctive and above all, playful. Their improvisations are expressions of childhood emotions and moods (Forrai, 1974, 1988, p. 74). Sensitive teachers pick up on the natural inclination of children to improvise and gently bring it to completion so that the children can retain and possess their song (Willems, 1956, 1987, p. 53). This again obviates the need for a high degree of teacher training. The intuitive nature of true improvisation defines it not as "instantaneous composition" which would be primarily mental, but as something much more spontaneous

and less perfect in formal structure (1979, p. 14). Nevertheless, a teacher can tell by their improvisation when children have absorbed the "essence" of a particular musical style (Szabó, 1979, p. 30).

The key to melodic improvisation is the melodic ear sustained by rhythmic sense. The combination of these two faculties is not easily called up "on demand" when a child is trying to generate a new melody. This is another powerful reason why the subconscious experience of music must precede formal training (Willems, 1956, 1987, p. 54). This prior experience allows children to recognize a compelling framework which evokes meaningful improvisation, "a condition to be fulfilled". But the chosen theme must be "emotionally true", an extension of the children's experience (Soldan, 1965, p. 37).

A Summary of Expressive/Experiential Operations. Through the component perceptual modes of expressive and experiential operations, learners acquire the "language" of music. This does not mean the terminology of music, but rather refers to the use of music as a way of feeling, doing and therefore, knowing. From this intuitive base the learner will be helped to discover the underlying and ever more complex relationships within music. In effect, the Expressive/Experiential operations are where musical deep structure begins to form. It is important to know that one never leaves those operations - they are what undergird, make possible and continuously sustain the Aural and Literate operations. That is why the literate musician constantly refers - even in the very act of performance - to what has been previously felt and heard.

Aural Schema: General Principles Applied to Musicality

Knowing musically consists of discerning, then understanding through hearing, the rich interrelationships inherent in musical structure. Sight-singing,

dictation, composition, even properly-taught theory are dependent on, and lag behind, experience and hearing. But what is so critical to musical development is that musical relationships be taught so that the learner "thinks through his eye while he feels through his ear" (Curwen, 1875, p. 25). It is especially curious that Curwen refers to it as "feeling" through the ear, rather than hearing. This insight correctly refers to the intuitive effect of music on the aural capacity as experienced through moving, singing and hearing. It is the development of this hearing-feeling which is one of the chief aims of aural operations.

Willems (1979) stated that ear training must be accomplished in the context of a fundamental law of musicality: "we have to live first, then become conscious of the phenomenon of life; only afterwards can we live consciously" (p. 8). This second point clearly states the nature of aural operations, which is for the ear-mind to become conscious of a particular musical relationship and how it works. In other words, it is the "...ability to organize musical sounds and derive structure and meaning from them..." (Hildebrandt in Peery et al, 1987, p. 92). Once each relationship is felt, heard and identified as to its place in the organization of musical sound, it is given a name. Since Guido's time, this has been most efficiently accomplished through relative solmization.

The subtle relationship between musical experience and musical hearing is illuminated by Helmut Moog (1976), who finds that two aspects of musical perception act upon each other: the sensory and the mental. For him the former registers the presence of the elements of music and the latter finds the relationships between the elements in the series of sounds (p. 37). Gardner (1991) refers to this as the process through which children discover the tonal organization of music as they try to make sense of it (p. 74). Zuckerkandl (1973) says this discovery process has four levels: hearing tones,

hearing dynamic qualities [tonal relationships], hearing motion, and hearing organic structure (p. 88).

These important pre-literacy ways of thinking are very important to composers. Debussy, for instance, is reported to have said: "...up until now, music rested on a false principle. They have looked too much to writing, they make music for paper when it is really for the ear" (Willems, 1956, 1987, p. 33). Kodály (in Bónis, 1964), who greatly admired Debussy's composition understood that "...no musical culture can be created with deaf-and-dumb musicians...The only practical course towards making an elementary knowledge of music into public property is through the development of hearing" (p. 204).

There are three aspects of musical hearing. Hearing as the act of *receiving* sounds; then, listening as the act of *taking interest* in the sounds; and finally, inner-hearing as the *becoming conscious* of that which was received and noticed (Willems, 1956, 1987, p. 33). Willems further says that the first of these might be called "auditive sensorality" which is concerned with timbre, pitch, intensity and the upward or downward movement of sound. He terms the second as "auditive affectivity", or the grasp of melodic elements and their relationships. The last is called "auditive intelligence", or knowledge of the names and operations of melodic functions (p. 34). He also identifies in these an order of development which progresses from the "most material and corporeal to the most intellectual and spiritual" (p. 35).

Willems' (1979) characteristically deep analysis of musical operations leads him to list the subskills of musical hearing. These include musical sensitivity, the cultivation of the inner ear, the development of relative and absolute pitch, memorization, intonation and harmonic sense (p. 8). He defines the central one of these, inner hearing, as "thought, sonorous musical

ideation" (1956, 1987, p. 59). This concept substantially validates the musical way of knowing discussed in the foundation literature.

What this means is that the teacher must help learners develop their inborn inner hearing, then to become aware of how to use it for reading, writing, improvisation and composition (Willems, 1956, 1987, p. 59). Singing is especially helpful in the development of innate, but often latent, inner hearing (Kokas in Barkóczi and Pleh, 1975, p. 7). The other key to this development is memory training, which must work "partly backwards comparing (what we are hearing) to what we have heard and partly forward to what we are going to hear" (Ittzés, 1993, p. 4). This advanced type of aural memory leads to the development of musical imagination, where the musical mental processes intentionally rehearse already experienced musical patterns by trying to convert them into "sound images" (Webster in Peery et al, 1987, p. 160). Thus, the learner is constantly re-hearing the music internally in order to take it apart, discover its structure, name, symbolize and re-create it. This strongly indicates the musical construction of meaning.

Melodic Aural Operations. Since rhythm is found elsewhere than in music alone, melody is considered the essential characteristic of music. This implies that the prime focus of aural development must be on developing the learner's ability to remember melody, then to imagine sound (Willems, 1956, 1987, p. 8). The melodic memory hears melody as a temporal sequence of notes. To cultivate this capacity there are three especially important aspects of aural activity which need to be cultivated through melodic experience. They are awareness of melodic motives, actual melodic memory and inner hearing which draws from melodic memory. Because these three highly mental activities are so internalized, the teacher must look for their outward manifestations in order to account for developmental progress. The

corresponding outward manifestations are the ability to sing increasingly more complex melodies in tune, to playfully vary melodic themes already known from songs and to recognize, then remember the relationships between the constituent tones of a melody. A fourth manifestation, inclusive of all three, synthesizes them into the ability to sight-sing unknown melodies. In the following paragraphs, the three constituent aspects and their manifestations are discussed in a fashion which reveals their interrelatedness.

Smaller auditory images are obviously easier for the memory to manage, especially in early developmental stages. These smaller images are foundation materials found in the great body of children's singing games. If given plenty of combined singing and movement experience using this natural song material, children become intuitively aware of the musical motives, or phrases, of songs. The naturally-occurring sung phrase, like the metered poetic line, is usually quite accessible by the memory (Turner, 1985, p. 73). An important aspect of musical memory, then, is the ability to retain a temporal sequence of sounds in their proper relationship to each other. Other researchers confirm this same intuitive dividing of long chains of patterns into "natural subparts" as a way of mastering melody through aural memory.

One of the most powerful and frequently occurring manifestations of aural musical activity is the creation of spontaneous variation in known melodic material. The absorption of melody through experience linked to inner hearing gives the learner an intuitive feel for structure. The memory of previous musical experiences feeds the formation of inner hearing and the creative imagination uses inner hearing to generate new musical structures from previously known tonal and structural relationships (Restle in Sundberg and Lindblom, 1975, p. 124). Through this intuitive knowledge of the rules of musical construction, the young singer plays with learned melodies and

creates many variations of them. The principle manifested by this is that variation occurs because of rules instead of despite them. Early musical creativity, therefore, does not imply "freedom *from* rules", but the "freedom *of* rules" (Turner, 1985, p. 79).

The musical hearing of structure and the free formation of variants inevitably leads to the intuitive knowledge of musical style as long as these are supported by musical thinking skills which reveal their underlying relationships (Kokas in Barkóczi and Pleh, 1982, p. 9). Though musical sounds succeed each other with the passage of time, they are bound together by tonal, rhythmic and structural relationships. To apply a whole language principle, the focus must be on context and construction of meaning, rather than on each single note. Kenneth S. Goodman (1986) quotes Lewis Carroll on this point: "Take care of sense, sounds will take care of themselves" (p. 27). Musically speaking, it is style which takes care of sense, which concept reinforces the need for stylistic consistency in musical literature especially during aural development.

An autobiographical insight by an American music researcher reveals the absolute dependence of true melodic reading and writing on aural development. She admits that like many college music-major graduates, she could not "really 'hear' music inside" her mind "in the same way that you can 'hear' the words you're reading in your head" even though she was fluent on two instruments. Further, she could not remember music previously heard and sing it later. Like most musicians, she depended entirely on instruments to demonstrate how notated music sounds. Subsequently, she thought the deficiency was hers, not the faulty way in which she was taught (Barron, 1977, p. 1). As a graduate student, she went through intensive and systematic Hungarian teacher training based on singing and aural development. Her

scholarly output reveals that she has clearly acquired the aural operations she knew she was missing.

Barron's successes suggested to me a study which would observe and document the acquisition of aural operations in other adults over a much shorter period of time than would be possible with children. From her experience reported above, and because of the dependency of literate operations on aural ones, it was inferred that progress in aural operations would be revealed by parallel progress in expressive singing and in sight-reading fluency. The following study reports, therefore, on the progress made in melodic aural operations by a group of adult learners.

An Exploratory Analysis of Adult Aural Acquisitions. The data reported below result from the routine gathering of information I do in order to evaluate adult students in my non music-major teacher-training courses. The fifty-two undergraduate students involved were distributed among three sections of a music pedagogy class required for state elementary teacher certification. Each section met twice weekly for a period of 75 minutes each session and each section was taught by the same instructor using the same curriculum and evaluation model normally used every semester.

The curriculum for this teacher training course is intended to develop the individual teacher's musicianship and to give the teacher proper training in pedagogy and materials so that each one will be able to carry out singing-based musical instruction in a classroom. The first seven class meetings focused entirely on teacher musicianship and each class period thereafter was divided into one-third teacher musicianship and two-thirds pedagogy and repertoire. The tripartite expressive/experiential, aural and literate model was used for the teacher's musicianship training, but their pedagogical training only prepared them to lead children through various aspects of the

expressive/experiential operations. The standard of musicianship aimed for in this course was for the trainees to sing lightly, clearly and well in-tune through the range of an octave and a third; to be able to feel, read and write rhythmic notation including compound meter; and, to be able to sight-sing melodies in any major key using relative solmization. The latter two cannot be achieved without successful use of aural operations.

A portfolio-based assessment system for this 3-credit course was custom-designed by the instructor. The students were required to keep their own portfolio consisting of 1) An entrance essay setting forth their beliefs about the "Role of Musicality in the Development of the Individual"; 2) A "Musical Autobiography"; 3) A metacognitive feedback log; 4) Class notes; 5) Finished projects, including an original and illustrated children's picture book about a song; 6) An audio cassette of their singing of assigned songs (words and solmization); 7) An audio cassette of their singing of oral tradition songs remembered from their own childhood; 8) Quizzes, dictations and a formal final exam; and, 9) A take-home exit essay documenting their musical and pedagogical progress and self-assignment of grades for attitude, effort and progress. The main purpose of this particular portfolio structure is to enable the student and instructor to cooperate in the evaluation of the progress of individual musical hearing, therefore their ability to employ musical operations.

This rich fund of portfolio information allows a triangulation of student-anecdotal, teacher-observed and audio-recorded data which results in the conclusions presented here. These data specific to the subject of aural development, presented in Appendix B, represent a numeric value assigned by the instructor to each audiotaped sample.

There are several strong trends suggested by these data. First, the item of musical progress most frequently commented on by the learners was the newly-acquired ability to sight-sing unknown melodies [56% of the sample]. Other comments, coupled with singing scores, reveal that many other students are in various stages of learning to hear (and recognizing that they CAN hear) musically, or using aural and literate operations. Most importantly, steady progress in singing and hearing can be documented for 81% of the students. Most of the students not shown as making progress were already able to sing well in-tune before taking this class, but noted delight in being able to sing at sight. There were also positive changes in voice usage and intonation quality among this group.

The results were achieved by first taking these adult learners experientially through familiar children's songs which they identified as known. The students also learned by rote several unknown songs of the same scale types as the known songs. Activities based on these two groups of songs included moving to the various beat layers, then deriving rhythmic and metric notation from the ratios inherent between these layers. Melodic notation was first derived from the actual songs as sets of similar and dissimilar aural relationships. Then, this knowledge distilled from a fund of known melodies was applied to sequentially-arranged unknown material to which the student's increasing aural powers were systematically applied as they learned to hear and sight-sing.

These students were also trained to become aware of their own metacognition so that they could report on their musical progress. Some examples of anecdotal material drawn from student portfolio essays serve to give added insight into the learning that took place during the course. One student, who is a member of a highly-auditioned campus choral group, wrote:

"...I had avoided learning key signatures and scales because I thought practice and memorization were the only way I would be able to learn them. Now I not only understand the relationships of notes in every key, I know how to tell what key any given song is in...". And again, "...I just went to the Messiah sing-along this week, and was amazed at the improvement in my ability to sight-sing many of the choir pieces I had **never** seen before".

Another student with some previous musical training revealed "...I also know my musical ear has matured for I can hear relationships better. (I'm even better at recognizing when I'm singing off key!)". Yet another student's comments reveal how acquiring aural musicianship has enabled her to operate in the Literate sphere:

> "...before this class, my musicality was extremely piano-dependent. I realize now that there is a significant difference between sightplaying and sightsinging... Personally, this new discovery has increased my desire to develop my musicality further by writing down the music I have composed. The task that once seemed to be just that - a task - and a formidable one at that now seems much more achievable and enjoyable. I felt that before, I lost the feeling and direction of my composition when I toiled over transcribing it. Now, however, solfa allows me to get the feeling and direction down quickly so that it is not lost as I work out the technical aspects of writing it down.'

Lastly, a student with little previous background gives insight into her new-found awareness of musical hearing:

> "...I quickly realized that if I didn't know how to at least sing in tune with myself and a group that I could never make music a part of my teaching curriculum. As I commented many times in my metacognitive log, my singing ability has improved 100% largely due to this course. My husband and even my friends have commented on my enriched singing".

The data show that significant aural progress was made through systematic experience-based ear-training using carefully selected musical

literature and rigorous aural memory cultivation. In essence, these are the same results reported by any one of the composer-educators whose pedagogical philosophies have been in combined use for over a hundred and fifty years. These results especially demonstrate how relatively simple, straightforward and effective these principles are and how readily learners respond to them at any age.

Rhythmic Aural Operations. The aural operations consigned to rhythm are much more akin to physical "feeling" than to acoustical "hearing". This subtle distinction makes rhythmic aural activity dependent on physical experience to which the musical inner ear refers when applying aural operations to rhythm.

The first principle of rhythm is that it must be lived, not theorized. Rhythmic life is simply a "synthesis which unites music to the human being" (Willems, 1954, p. 4). Willems affirms that the more the music educator loses sight of this natural process, the more insufficient are the theoretical rules which get in the way of "where great laws are in force" (p. 40; see also Zuckerkandl, 1956, p. 158). The only aspect of rhythm which is mentally conceived, also says Willems, is that of polyrhythm where the governing principle is simultaneity (p. 40). Even though dance is the fullest expression of rhythm, Willems terms music as "a dance of the heart" in which rhythm becomes less corporeal and more spiritual. In other words, the musical function of rhythm is to maintain "a link with the material world" (p. 39), a physical manifestation of intuition.

The strong "formative element" of rhythm in simpler musical structures results in short and repetitious patterns which, in turn, invite rhythmic movement. This doubled rhythmic activity makes musical structures easier for the mind to grasp (Moog, 1976, p. 39). Therefore, rhythm plays a crucial

organizational role in music. There are several layers of beat systems plus melodic and harmonic rhythm systems in a single simple song. Once the various rhythmic systems of a work are found out, the form of the work begins to emerge with increasingly greater clarity. Thus rhythm quite literally reveals an inner structure necessary to the construction of musical meaning (Soldan, 1965, p. 36).

Through premature theorization of musical learning, many learners miss the opportunity to intuitively discover the natural rhythmic ratios and proportions which underlie musical structures. As a result, many musicians confuse living rhythm with the notion of rhythm (Willems, 1954, p. 39). Ansermet (1971) observed that many modern musicians, including certain composers, have confused true rhythm with temporal time because they have disassociated rhythm and melody (p. 148). For them, music is always metered and regulated from without instead of from within (p. 140). For these reasons, Willems cautioned that learners should not be taught to approach rhythm through counting beats and measures (p. 9). Learners who rely on the numeric approach never fully develop the intuitive awareness of rhythm as a spatial distribution in time. In other words, learning rhythm by numeric means ignores the prime rhythmic characteristics of duration, intensity and plasticity (p. 9). Notice how the preferred natural approach automatically requires the use of at least three of the intelligences identified by Gardner - musical, spatial and kinesthetic.

Jaques-Dalcroze (1930) elaborated that the combined powers of mind, body, intelligence and intuition perceive the various rhythmic currents of music (p. vii), which concept supports a more holistic and less mental kind of rhythmic learning. Moog (1976) adds that through experiencing rhythm physically, the mind relies on the body to make time concrete through

objective physical movements (p. 39). This rhythmic experience best occurs when singing and moving through four characteristic states: 1) real, motoric rhythm; 2) the tempo of a song; 3) the first, or accented, beat of a measure; and, 4) the subdivision of the beat into either binary [simple meter] or ternary [compound meter] systems (Willems, 1956, 1987, p. 22). This physical establishment of relationships between beat systems develops rhythmic aural and literate operations in music.

A deeper kind of rhythmic intuition, called cadential rhythm, must be cultivated in the course of musical development. Although rhythm may exist by itself, melody and harmony need rhythm for structure. Therefore, melody and harmony are cadential because they are either in motion or at rest (Ansermet, 1971, p. 140). Musical works as small as simple folksongs and as large as symphonies rely on cadential rhythm to mark beginnings and ends of phrases, sections, movements and harmonic boundaries. This is another reason, says Ansermet, why the "interior sense of rhythm" should be developed through cadential feeling rather than by counting (p. 149). Ansermet actually equated cadential feeling with psychic duration, respiratory cadence and cardiac pulse which are either in motion or at rest and either binary or ternary (p. 139). This extraordinary extrapolation brings the arsis and thesis of musical relationships into direct correspondence with the human mind and body, a matter also discussed in some detail by Zuckerkandl (1956, p. 186).

Our natural interior pulse may be termed "our life cadence", which corresponds to tempo in music (Ansermet, 1971, p. 146). The Swiss scholars feel that properly taught musicians control musical tempo by referencing it to their interior pulse. Musicians without this sensitivity struggle to find and stay in tempo giusto because they cannot refer to this internal cadence (p. 149). Conversely, properly trained musicians can easily find the correct tempo of

any piece without a metronome by comparing it to the internal cadence (p. 147). The practical key to developing this inner sense of tempo is "in the displacement of the body's centre of gravity". This displacement, or exteriorizing of the psychic, cardiac and respiratory cadences is achieved through natural movements like skipping, jumping, swaying and turning (Willems, 1979, p. 13). For the teacher, this means that children feel the tempo beat through the movement required by singing games as they accept the internal discipline of the songs (Forrai, 1974, 1988, p. 14).

Several relational and proportional rhythmic systems coexist in music. Tempo, rhythmic patterns, cadential periodicity, melodic rhythm, harmonic rhythm and architectural rhythm are those for which aural sensitivity must be developed (Willems, 1954, p. 14). Fortunately for the teaching-learning process, this seeming complexity is beautifully explained as "...*a relativity between movement and order*". This relationship has three possible characters: proportion, periodicity and repetition (p. 66). How Willems explains these characteristics tells teachers what learners must experience, then hear:

> Smaller rhythmic groups in a musical work connect with others into larger and larger groups, ranging from measures to phrases, then from phrases to periods, and from there to "veritable sonorous constructions". This "musical architecture" causes the mind to relinquish rhythmic consciousness as an "estimation of the flow of time" which is replaced by a "consciousness of proportions" (p. 13).

Willems (1956, 1987) also accounts for how this kind of consciousness is to be achieved, taking into account his concept of musical intuition which always works on making sense out of musical experiences. Though children can easily achieve proficiency in the three aspects of musical rhythm - tempo, meter and division - it is harder for them to reflect upon what they are expressing and experiencing. Above all, they must not be prematurely pushed

into it. Rather, by continuously appealing to the plastic side of children's rhythmicity [movement], rhythmic hearing and literacy can be achieved without losing the experiential side of it (p. 22).

Harmonic Aural Operations. Developing the aural awareness of harmony takes much longer than melody and rhythm. Children usually cannot make any harmonic distinctions for a long time after the age of six. Until they can make those distinctions, they are much more focused on rhythm and melody (Moog, 1976, pp. 123-136). But eventually, music as a literature requires learners to become able to hear the dual aspects of intervals. First, as the relationship between two consecutive tones in a melody and secondly, as two simultaneous tones in one interval (Herboly-Kocsár, 1984, p. 41).

Aural operations in harmonic hearing not only depend on rhythmic and melodic sensitivity, but also on cognitive abilities to analyze and synthesize sound. In addition, since elements of rhythm, melody and harmony always occur at the same time, harmony is three dimensional, giving it its prime characteristic of simultaneity (Willems, 1979, p. 14). However, Willems also cautions that it must not be misconstrued that harmony is a mental theory, even though harmony is the most physically static of the three musical elements (1954, p. 33). Despite its more static nature, harmony is still a strongly aural phenomenon combining harmonic rhythm with melodic line (p. 33) and requiring the same amount of intuitive hearing for each. However, the primary requisite skill is the ability to hear "intratonal space" or the "auditory space...found between two sounds at the distance of one whole step". Through developing this "separating power of the ear", two or more harmonized notes seem increasingly more distant from each other, making them easier to distinguish, identify, and tune (Willems, 1956, 1987, p. 40).

All of what has been discussed up to now for the development of musicality comes together in harmony. For instance, awareness of musical form and harmonic hearing are closely linked. The same literature from which harmonic hearing is derived can be later revisited for the purpose of formal analysis, because the formal structure of a given work is determined by its actual or implied harmonic functions. Therefore, it follows that the teacher needs to learn how to steadily but subtly develop children's harmonic ability at the same time they are mastering rhythm and melody. As teachers themselves are trained to see more deeply into musical literature, they find the triple interdependence between the discernment of polyphonic texture, harmonic hearing and intuitive feeling for formal structure which cause the ear to predict and anticipate the flow of harmonic shifts within music (Herboly-Kocsár, 1984, p. 7).

There are two basic styles of harmony in Western musical literature, homophony and polyphony. Homophony is the most rhythmically static of the two, with vertical stacks of tones moving generally at the same time as the harmony progresses from one cadence to another. Homophony formally began as Medieval organum, characterized by slow moving melodies harmonized in parallel fashion. Early folk music also had its own version of homophony, perhaps best characterized by the droning of the bagpipe-type instruments found throughout Europe and imitated in the song tradition.

Polyphony, by contrast, is harmony produced by two or more independent but related melodies which produce harmonies at certain conjunctions. The in-tune singing of a well-written round provides an example of simple polyphony. Polyphony was on the rise in the Renaissance, when the subtly shifting motets and madrigals and their related song-forms were characterized by each voice part being a separate but related melody. But

polyphony reached its zenith in the Baroque era with Bach and Handel, whose fugal art explored the tonal possibilities of polyphony to its extremities. Thereafter, all master composers have delighted in creating further innovations in homophony and polyphony. The rich tonal and structural relationships possible in both textures allow composers to paint much musical meaning into their compositions.

Harmony is the most highly relational and therefore the most abstract of the three basic musical elements. It is revealed only through the relationships set in motion by melody, rhythm and form, in that order. All melody suggests or implies some kind of harmonization, but that does not mean that every melody should be harmonized. The cadential rhythms set up when melodies are in motion or at rest provide a sort of architectural framework, or outline, of the points between which the harmonies implied by the melody must flow. The organization of these harmonic cadences parallels the formal structure of a song or extended musical work as comprised of phrases, themes, periods, sections or even movements. Further, each scale system combined with its stylistic tradition implies an almost limitless number of possible harmonic relationships.

The teacher who understands the above also understands that harmonic aural operations must be developed in inverse order, from simple to complex. Therefore, very young children can easily be taught to discern the contrasting phrases of simple folksongs. Shortly after, they can learn to label each phrase in order to discover the form of the song, such as ABBA. As this ability is developed in complexity, children can also begin learning to simultaneously perform repeated rhythmic patterns while singing which develops the ability to hear polyphonically. Still later, while the development of these two skills continues, children can be taught to hear the harmonic rhythm

- the implied harmonic complements to the melody and the rhythm given them by the shifts in the melody. Simultaneously, the children become quite fluent at singing increasingly more complex rounds with pure intonation. Finally, children eventually become able to hear and sing in parts, to identify simultaneously-sounded intervals and to harmonize known melodies either by improvisation or composition. This eventually brings them to the brink of harmonic literacy.

Literacy Schema: General Principles Applied to Musicality

When the essential relationship between musical expression, experience and hearing has been established in the learner, literacy becomes possible. Reading notation is only the gateway to this kind of literacy, not an end in itself. This is because there are two kinds of musical literacy, the ability to read music, and the ability to "appreciate true musical values" (Kodály in Eösze, 1962, p. 40).

If we expect language users to hear and write what they think, speak or hear with completeness, why should we expect less of those who are employing musical ways of knowing? Not that reproducing the score of everything heard is necessary but because this ability unlocks the great secrets of master composers, who have "conveyed to mankind things unutterable in any other language", that is, to those who are musically literate (Kodály in Bónis, 1964, p. 205). Unlocking these secrets for the general population through systematic instruction in notational literacy has preoccupied such great thinkers as Comenius, Franke, Rousseau and Pestalozzi, among others (Adám, 1944, 1971, p. 1).

Literate operations are utterly dependent on the development of inner hearing (Dobszay, 1992, p. 53). A parallel principle of interiorization exists in language. Written language communicates meaning over time and space. It

doesn't have to be converted to speech to be understood. "Silent reading is much more rapid than speaking because readers are understanding meaning directly from the printed text" (K.S. Goodman et al, 1987, p. 203). Musically, it is expected that the educated musician be able to read notated musical works "...silently, but with a full mental comprehension of the sounds" (Eösze, 1962, p. 79).

The foundation for literate operations should be laid as early as possible because for one thing, children are natural symbol users from the ages of two to seven (Gardner, 1991, p.56). There are apparently three childhood "waves" of concept symbolization. First, the toddler uses "event -" or "role-structuring". The second wave, called "topological mapping" begins around the age of three, when children make symbols representing obvious characteristics, such as a contoured outline for a song with sharply rising and falling pitches. A third wave begins around the age of four which draws on the child's sense of number as it represents precise quantities through a sort of "digital mapping". Somewhere between the ages of five through seven, this coalesces into true "notational" or "second-order" symbolization (p. 75).

However, Gardner (1989a) strongly cautions that all instructional emphasis in music should be focused on the development of intuitive musical hearing without the premature imposition of notation (p. 231). He specifies, much in line with the thinking of the composer-educators, that notational use must gradually and ultimately coincide with a child's intuitive aural operations. In other words, the invented notation of children must be in direct proportion to interiorally-mediated musical deep structure, not the mechanical representation of surface contours. For these reasons, Gardner decries "patently gimmicky means many misguided teachers use to overemphasize the decoding of musical notation" (p. 230).

Literate Musicianship as the Construction of Meaning. Since children are driven by their "deep human inclination" to create second-order symbolic systems, they are quite influenced to do so as they see adults using them (Gardner, 1991, p.76). This very whole-language-like concept tells teachers that they must be frequently seen using notation by the learners they are nurturing musically. The teacher's role is not just one of setting an example of literacy use; above all, the teacher must create, oversee and continuously join with the learners in the co-construction of the musical meaning underlying notation. This is because note-by-note reading is not really reading unless there is real substance underlying it. In other words, "real performance is as creative an act as composition" (Langer, 1953, p. 138). This further implies that the composer, though not physically present, and possibly even hundreds of years distant, must be a partner in the co-construction process.

At one time in the musical development of Western civilization, composition and performance were probably simultaneous. Over the years, "specialization set in and those who invented music became separated from those who performed it..." (Vaughan Williams, 1987, p. 13). Because this distancing exists in language as well as in music, there is a principle with parallel applications in both: "Comprehension of meaning is always the goal of readers. Expression of meaning is always the goal of writers. Writers and readers are strongly limited by what they know, writers in composing, readers in comprehending" (K.S. Goodman, 1986, p. 38-39). Further, "...In most literacy events only the writer or the reader is present. The writer must have a sense of the audience, the reader a sense of the author" (p. 21) and (Dobszay, 1992, p. 77). Musically, then, the composer fully depends on the musician for the re-construction of feeling and meaning of the music (Campbell-McInnes, 1939, p. xi).

This injection of meaning into a musical work by the musician is called interpretation and draws on his or her "prior learning and experience" just as readers draw upon theirs to construct meaning during reading (K.S. Goodman, 1986, pp. 38-39) and (K.S. Goodman et al, 1987, p. 204). Suzanne Langer (1953) reports the following insightful conversation with a concert artist:

> When I first read a composition, I conceive it according to the range of my experience. But as I study it, there comes a point - sometimes after a long time...when I feel that my personality has changed under the influence of the piece. I have learned to feel it a new way, or to understand a new feeling. Then I have grasped the musical idea, and practice differently..." (p. 145, cf. 9).

This kind of meaning-making occurs when musical expression and experience, aural recognition and the ability to achieve literacy in music coincide. Music does not really exist on the page, it exists within the mind of the composer or musician. Dobszay (1992), himself a composer, conductor and pedagogue, reveals that composers don't compose "notes", but rather use notation to capture and preserve musical ideas (p. 77). As another composer, Vaughan Williams (1987), puts it, "the composer starts with a vision and ends up with a series of black dots" (p. 13). But, he continues, "the performer's process is exactly the reverse" - starting with the black dots he or she must work back to the composer's vision (p. 14). To illustrate this, Vaughan Williams likens printed music to a road map which has commonly known signs to show the roads, bridges, directions and so forth. But just as the map is not the country it represents, neither is notation the sound it indicates (p. 13).

Forrai (1974, 1988) says that because of this teachers and learners "should not try to force music into a strict adherence to the inadequacies of a simplified notational representation" (p. 25). The well-known transformational

grammar theory of Noam Chomsky provides insight into the problem. First of all, Chomsky (Chomsky and Chase, 1992) acknowledges the intuitive nature of language acquisition (p. 12) in the same way as that of musicality. Given this, he proposes that language consists of an "indefinitely large number of structures" which constitute a system of language rules or "generative grammar" (Chomsky, 1965, p. 15-17). (This language-music comparison will not delve into the phonological, syntactic and semantic aspects of transformational grammar since it has been established in the literature review that the language-music parallel doesn't go that far). These structures include deep structures which specify meaning and surface structures which specify symbols for meaning (p. 16). But the point of Chomsky's (1968) theory which is germane to musical notation is that deep structures provide completely different, but related, information than that which shows up in surface structures. Accordingly, a multitude of surface structures can be assigned by the mind to represent a single deep structure, or meaning (pp. 30-31). A pre-Chomsky precedent for applying these concepts to music was set by Heinrich Schenker whose transformational theory of layered musical structures is elaborated by Zuckerkandl (1973, pp. 169-195).

The musical analogy of this aspect of Chomsky's concept of deep and surface structure is that there are a variety of sonorous interpretations which can be realized from the surface structure of notated music. Music, therefore, is actually the deep structure the composer intends through, or the musician brings to, the surface notation. The composer cannot realistically detail in the score all of the aspects of the music of which he is thinking. The performer needs to seek the solution to the work through "...the artistic qualities which every educator must constantly awaken in the student, either through the example of the masters, or in calling upon (the student's) inner life" (Willems,

1954, pp. 44-49). This finds easy agreement with Chomsky's theory: "What you know can only come from two sources - inside and outside. If it doesn't come from what's outside us, from our experience, it's got to come from our inner nature..." (Chomsky and Chase, 1992, 12).

As suggested by Ralph Vaughan Williams, musical notation is only a picture of intended sound, a mere surface structure undergirded by complex and relational layers of tempo beat, subdivided beat, accent beat, rhythmic patterns, scale systems, stylistic features and implied intonation and key relationships. But because these complex layers cannot be notated - only implied - the reader must supply them from his or her own musicality, a product of expression, experience and aural acuity. There can therefore be no question that the key to notational literacy is not visual, it is experiential and aural! Everything depends on the musical memory (Ittzés, 1993, p. 5). And this aural dependence must first be on the relativity of notes, the relationship between them, which is of an artistic nature. Then this can be followed by using the absolute, or ABC system of note naming, to set the relativity within a key and therefore in the pictorial staff system. Current practices err on the side of the absolute system at the expense of the more critical relative system (Willems, 1956, 1987, p. 98).

Constructive Aspects of Relative Solmization. The relativity of musical sounds were initially notated by Guido as solmization syllables without the staff (Riemann, 1905, p. 15). Then as now, solfa syllables may represent the constant tonal relationships between any absolute pitches, in the same way a+b=c may replace absolute numbers by always representing the same relationship between them (Adám, 1944, 1971, p. 6). This process assumes that the users of notation will construct and produce, from their mental store of experientially-derived hearing, the actual sounds which are only represented

by the notes. Solfa notation in particular "forces" this constructive process without the visual aid of the score and thereby, greatly strengthens aural operations (Eösze, 1962, p. 77).

Conversely, this same process allows the reader of notation to automatically convert the visual staff system into sound (Eösze, 1962, p. 80). Therefore, reading or writing notation should "conjure up in the child's imagination a living sound and melodic line" so that interacting with notation is not learning sets of rules in order to decode notation. The preferred outcome is to "aurally visualize" notated music (Szönyi, 1973, p. 43). This immediate conversion of symbol into sound made possible by solmization works in any key in any style without changing the names of the notes or the sound of their relationships (Ittzés, 1993, npn).

To use relative solmization, notation readers locate the position of the home tone on the staff. The key name reveals this home tone. All other notes are then sounded in constant relationship to this home tone, no matter the actual pitch. The graphic contour of the notes on the staff pictorially illustrate these same relationships (Adám, 1944, 1971, p. 9). Thus, it follows that the tonal relationships discovered and proved in aural operations are used to sound out the constant relationships visually embodied in staff notation (p. 6). The great beauty and power of this set of relationships is that although constant, they are independent of pitch and can be sung at any pitch on any placement on the musical staff.

However, the twin relationships between relative pitch, qualitative in nature, and absolute pitch, quantitative in nature, should also be observed (Willems, 1979, pp. 29-30). After facility is achieved in sight-singing through relative solmization, it is an easy step to become able to hear relatively while simultaneously singing absolute note names (p. 17). This skill is enabled by

the dual naming system of notes; solmization for tonal orientation and absolute for definite pitch. It is not uncommon to see primary grade children with this training sing a song in solfa while touching the place of each note on their fingers as if placing notes on the staff then re-singing the same song in absolute note names.

Solmization also reveals the "realm concealed behind the notes" (Lendvai, 1983, p. 96). This inner realm is the formal structure of music, yet another set of relationships which depend on tonal as well as rhythmic relationships. The micro-relationships made clear by solmization then open up the musician's understanding to the macrocosm between sections of a musical work. For example, the whole structural emphasis of music from the Romantic Period is "relativity: the system of potential differences between the tonal elements...(such as) modal tensions" (Lendvai, 1983, p. 94). Only relative solmization can fully show this interplay without reducing the artistry of the inner relationships to mere mathematical formulae. Another example is early or modern polymodal music, for solmization alone provides the only way to analyze all of its nuances (p. 693, cf). In fact, the properly cultivated use of solmization creates associations between our hearing and tonal images which may operate in all tonal systems excepting twelve-tone serial music (Dobszay, 1992, p. 54).

Mihály Ittzés (1993) identifies definite stages of notational literacy through which learners pass. The lowest level of skill is the non-independent stage in which they can read and write notation in a single tonality but cannot recognize from the notation how to change keys without the instructor's help. At a second level, they can visually and aurally recognize the key changes from the "picture of the score" and make the adjustments as they sing. At the highest level, individuals are able to simultaneously think in the two systems of

relative solmization and absolute pitch names and actively use them for comparison between sound and sight as they sing music which changes between several keys (npn).

At least three modern composer-educators stated well-articulated reasons for advocating the use of solmization in their respective reform efforts. For Kodály (Lendvai, 1983) , it accomplished four tasks: 1) Ease of accessibility for the beginner and the experienced; 2) Derivation from actual musical experience instead of from theoretical laws; 3) Direct and comprehensive examination of tonal phenomena; and, 4) Revelation of inner structure and therefore, meaning in music (p. 95). For Willems (1979), solmization automatically accesses musical memory and inner melodic hearing (p. 17). In the vision of Jaques-Dalcroze (Croptier, 1965), solfège is described as intending much more than note-reading. It should include hearing, rhythm, theory, notation, scales, modes, chords, intervals, tension-resolution of intervals and chords, nuances, phrasing and form (p. 111).

Relative Hearing and Musical Writing. A discussion of literate operations in music must also account for the writing of notation, which presupposes the ability to read it. It is known that all serious writers of music hear it before they write it, a process called dictation. For the general public and for amateur musicians the ability to read notation is of course more useful than writing. But even these automatically develop minimal writing skills as they learn to read, just as language learners discover parallel alphabetic principles in language (K.S. Goodman, 1986, p. 37).

The acquisition of writing musicianship is greatly accelerated by learning solfa, a process backed by centuries of continual refinement. Through it, learners develop the ability to transform heard sounds into written notes and vice-versa, i.e. to take dictation and to read (Kodály in Bónis, 1964, p. 193).

The consistent use of solmization for writing improves the aural memory and enables the student to readily write down what has just been heard (Ittzés, 1993, npn; see also Kodály in Bónis, 1964, p. 197), which can then be easily transcribed as notation.

The ability to take musical dictation - and likewise, to compose - is actually founded on the faculties of musical memory and inner melodic hearing (Willems, 1979, p. 17). From his studies on the nature of composition, Ittzés (1993) concluded that the highest development of musical reading and writing is when a composer is able to mentally develop a score and write it down without going to the piano to sound it out. This, he says, is how Mozart is known to have written, but he was by no means the only one to do so. This "highest peak" of musical hearing is to "imagine the sound inside" (npn).

Some Practical Considerations for the Teacher. Fluent melodic reading and writing depends on a very secure foundation in rhythm. This is partly because melody is much more abstract than rhythm, which is so rooted in concrete physical movement. It is no surprise, then, that researchers are finding a strong direct relationship between aural, motor and rhythmic reading abilities (Upitis in Peery et al, 1987, p. 73). It follows that strong rhythmic training in the beginning years has "decisive weight with regard to reading music in the later years" (Adám, 1944, 1971, p. 28). Mastering rhythm earlier than melody allows for more fluent melodic reading because the learner doesn't have to deal with the newness of both at the same time (Adám, 1944, 1971, p. 98).

Literate operations actually begin during aural operations when learners begin to discover the tonal relationships in simple songs and learn their names as they also learn the notational symbol system. But these names and signs are not all learned at once. Rather, in the literature-based musical

classroom, the learners begin by learning the solfa names for songs using only one or two intervals at a time from already experienced literature which is constructed from these intervals. Then, similar songs, using only the same relationships, are explored carefully to help the learners develop confidence and autonomy in hearing and reading. During this time, the learners are aurally preparing to learn other relationships. The principle is that properly organized literature suggests the order and frequency with which new intervallic-symbolic relationships are mastered. Year after year, learners add to their vocabulary of tonal combinations, and their reading of them lags behind their hearing. After about four years for children and in less time for adult learners, the possible tonal combinations are well-enough ingrained in the aural memory, and the visual connections clearly established, for truly fluent reading at sight to commence. Even with daily singing lessons, Hungarian children begin to read fluently only from the fourth or fifth grade (Kodály, 1966, p. 73), and about two years later in schools with twice-weekly singing lessons (Szönyi, 1973, pp. 33-34). These observed phenomena align with Gardner's timeline for symbolic fluency and Piaget's cognitive operations at the same ages.

During this developmental process, learners should also be taught the mechanics of how to read an unknown song autonomously, without the teacher being present. And of the following steps, any one should be left out if it is not needed. The whole object is to teach children to read developmentally-appropriate notated music with curiosity and joy, not as a chore. These steps are a combination of Jenö Adám's (Adám, 1944, 1971, p. 167) and this writer's teaching experiences, but are only some of several possible strategies. First, the musical work should be scanned for an idea of its wholeness, looking for the relationships of the parts to the whole, same and

different measures, phrases and sections. The tonal context should then be established by determining the tonal center and the aural relationship of the last, then first tone, to it. Next, one should take note of the overall contour of the melody and especially notice and possibly work out large skips ahead of time. Singing the melody with solmization without rhythm comes next to establish melodic continuity, then the rhythm can be added. Lastly, the text can be added and the song rehearsed for maximum expressivity or even analyzed for structural meaning.

Concepts of Predictability Applied to Musical Literature. The existence of prolific numbers of folksong variants allows for the full application of the psycholinguistic principle of predictability to musical development. Because of the highly relational characteristics of the musical way of knowing, issues of predictability actually apply to all three musical acquisition operations. The following discussion and data show how this global view of musical predictability becomes the central enabling aspect of intuitive musical thinking.

As readers strive to make sense out of print, they use the confirming strategies of sampling, predicting and inferring (Adám, 1944, p. 206). Active readers develop their own "sampling strategies" as they scan text for clues, efficiently only choosing the ones useful for constructing meaning (p. 205). Musically, notation readers look for key and meter signatures, key-notes and cadential patterns as they engage in music reading activities ranging from prima vista sight reading to deep analysis.

Predicting and inferring are yet other aspects of reading process. Readers use them by combining conceptual and linguistic knowledge with schemas they have developed for reading. These "inference strategies" help them infer what is not present in the text (K.S. Goodman et al, 1987, p. 206). The musical implications of this are profound. When music readers convert

notation into musical sound they have to supply everything that is **not** on the page from their own musicality, or "deep structure": the beat in proper tempo, intonation, tension and release inherent in phrasing and stylistic conventions only implied by the "surface structure" of notated music. In short, the **reader** has to make it "make sense" musically. We acquire all of these things away from notation in the pre-literate operations. And that is exactly what we must teach learners. We must first teach learners to be **musical,** from which all else will flow. As for predicting, well-trained musicians are able to "roughly guess what will follow in a new piece and definitely know in the case of a familiar work" (Robert Schumann in Dobszay, 1992, p. 77).

For these reasons, musical pedagogy must be prepared to account for the double aspects of notation: 1) the musical symbols and what they actually represent; and, 2) reading music as a support to one's own musicality, or deep structure, much as with the first readers of neumatic notation. Dobszay goes on to recommend a more Medieval-like approach to the process of learning to read notation (Dobszay, 1992, p. 76). In those times, a student simultaneously heard and learned by rote many melodies while also looking at their notation. The teacher becomes the most important link in this aspect of learning to read notation. While the teacher models songs and leads the class singing, the notation must be an ever-present and integral part of this rote process. If this process is continuously coupled with what Dobszay calls the "deciphering method", student progress in connecting sound to symbol will be accelerated and increasingly more accurate (p. 76). This approach is very much like Kenneth Goodman's (1986) concept of a "literate environment" (pp. 32-33).

To summarize, Goodman et al (1987) affirm that there is only one reading process, so fluent reading is partly a matter of how efficiently each reader uses this process and partly to what degree the literature allows the

reader to be efficient (pp. 203-204). Musically speaking, teachers help reader's efficiency through developing their expressive/experiential and aural operations continuously and deeply. Similarly, the efficiency of the musical literature will be, in large part, a function of its predictability - its properties which enable the reader to efficiently sample, predict and infer. What follows, then, is a series of brief discussions setting forth the critical aspects of predictability in musical literature and literacy. Achieving predictability in music relies on the several factors of style, stylistic pedagogy, redundancy, variant song forms and reading strategies applied by readers. These are followed by a report of a study of the predictability of singing books for children.

Stylistic Predictability. The same notational symbol may - and usually does - have a different musical meaning in different stylistic periods (Dobszay, 1992, p. 75). This means that learning note names and their relationships is not the only skill needed for fluent and successful literate operations. Each different style of music has different elements and groupings, therefore relational aspects, from all other styles (Vitanyi in Stefani, 1975, p. 199). Therefore, the musician cannot simply say "I studied music reading". Rather, it is necessary to study all of the stylistic periods in order to truly read different musical structures (Ittzés, 1993, npn). The meaning of a musical work cannot be fathomed without understanding its cultural and therefore, stylistic underpinnings (Meyer, 1956, p. ix). Musical style itself embodies meaning through serving as sort of a cultural "icon", a closed system of themes and variations of themes (Osmond-Smith in Stefani, 1975, p. 45).

Students rely on teachers to guide them through the intrinsic musical relationships and performance practices of each stylistic period (A.H. Goodman, 1990, p. 39). This is why the consistent quality of the musical literature selected for instruction is so important. But this organization of the

literature must be carefully done because every school of composition within each style also has its own musical grammar which carries meaning specific to its culture (Meyer, 1956, p. 70). Additionally, "...Great creators...have always retained a distinct individual profile, their style was never without certain elements that made their style unmistakable from those of others..." (Kecskeméti, 1986, p. 137). Therefore, it can be concluded that there are two aspects of style which must be attended to: stylistics which are common to all of the works of a style period; and, idiosyncratic composer languages (Osmond-Smith, 1975, p. 46).

In terms specific to predictability, style directly affects the accessibility of music (N. Goodman, 1978, p. 40). This happens because certain identifying transformations of musical meaning occur within a style, such as rhythmic extension or contraction, simplification or ornamentation, syncopation or normalization, augmentation or diminution and other possibilities (Osmond-Smith, 1975, p. 47-49). These effects combine to allow a style to obey what Meyer calls the "Law of Good Continuation" which describes how a musical shape or pattern will continue to develop within the framework established by a given style (A.H. Goodman, 1990, p. 38). This implies that if musical literature is grouped by style, then learners can not only read it more fluently, but also gain more depth of understanding through perceiving all of the possible cross-relationships occurring between musical works from a single stylistic period.

Serious composition is constructed according to rules which are clear and concise but which were never purposely formulated. This provides for each stylistic period a sort of "global image" or "fundamental scheme" of several layers which have been built during centuries of musical development beginning with folksong (Deliège, 1975, p. 170). These fundamental schemes

are nothing more than characteristic means of expression peculiar to each stylistic period. In the Baroque, it is linear melody with rapidly shifting harmonic cadences. For the Viennese Classical, it is an easily perceived and very proportional formal structure. Music of the Romantic period tries to overcome the polarity of the strong Classical cadences by becoming highly relative. Impressionism stresses "pure sound" and Expressionism stresses "pure tension" (Jiranek, 1975, p. 34). Cooke (1959) adds that Medieval and modern composition are chiefly architectural in conceptualization (p. 2).

The Influence of Stylistic Predictability on Pedagogy. Style is one of the most musically integrating factors in the development of musicality. Staying for a longer timer within one stylistic system has been shown to be quite effective in developing fluency in the literate operations of music. Dobszay's (1992) definition of style as "the frequent repetition and variation of identical elements and combinations" is also a powerful insight into what constitutes predictability in music (pp. 55-65). Obviously, stylistic predictability is a prime enabling factor for successful pedagogy. The prolific recurrence of melodic, rhythmic and harmonic structures within a style suggests a pedagogy of its own, which, when fitted to the developmental patterns of children, tells the teacher how to proceed with instruction (pp. 55-65).

In his own teaching, Dobszay (1993) saw that taking time for the students to see deeply into a few masterpieces was better than sampling music from everywhere at once. He reasoned that pedagogically, the teacher should duplicate for students the historical and cultural context of each musical style as it unfolded naturally. Since musical elements have quite different meanings in different stylistic periods, children must be given time to absorb the different contexts in which these elements occur and interrelate with all of the other elements (npn).

> "It is better", he said, "at least in solfège and musical literature...to work mainly with one style, one way of expression over a longer period of one or two years...the pupils can manage the music as a language better if the same motifs, the same interval relationships, the same rhythms have the same meaning..." (npn).

Within a style, musical difficulties should be saved for "later years and later in the year". All examples leading up to them should be clear-cut and simple to foster immediate understanding. Short works, complete in form - not excerpts - should form the teaching literature (Herboly-Kocsár, 1993, pp. 12-13). Proceeding this way, learners can be taught to intuitively "feel" musical style (p. 13).

This intuitive feel for any style begins to develop in the learner's expressive-experiential operations, where the process is so astonishingly simple as to almost escape detection. A child's first introduction to formal style comes in preschool or kindergarten as the teacher models songs phrase-by-phrase which the children learn by echoing back. This is the child's natural imitative ability at work. As skill in singing develops, the children learn to breathe and interpret music around the ebb and flow of phrases within a song which leads them to an awareness of the tension-resolution forces at play within music (Herboly-Kocsár, 1984, p. 73). Children may then be easily taught to aurally scan musical phrases they sing to determine how their arsis-thesis properties are presented (p. 81), which is one of the prime determiners of style.

This same simple set of experiences can also produce the ability to discriminate harmonic rhythm, which is the manner in which harmonic elements are distributed throughout a work (Deliège, 1975, p. 154). This is crucial, because the entire Baroque, Viennese Classical and Romantic stylistic

periods hinge on functional harmony. So much so that the melody, rhythm or form from these periods cannot be understood without hearing the layers of harmonic progressions undergirding their formal structure (Dobszay, 1992, pp. 49-50).

Most important to the purposes of this model, Dobszay's approach to stylistic thinking by harmonic functions deliberately tries to avoid the theory of harmony. He achieves this by observing the following global principles: 1) Learning to perceive chord changes is more elemental and more meaningful than knowing the chord itself; 2) Learning to distinguish and identify the notes of a chord is more useful than knowing the degree and the position of the chord; and, 3) Perceiving key changes can and should be learned before knowing the chords and their functions (Dobszay, 1992, pp. 49-50).

Dobszay's (1992) approach also includes a specific order in which styles should be mastered by musical learners, and again, this sequence proves crucial to the concept of predictability. His sequence does not follow the chronology of musical history, rather, it observes the double developmental requirements of learners and musicality. Therefore, Viennese Classical style, with the most regular and slowest moving harmonic rhythm, is mastered first. Then, Baroque style with its rapidly changing harmonies and regular key changes can be mastered. This leads to the ability of learners to hear and understand the out of key tendencies of the Romantic period (p. 49).

The Mechanics of Musical Predictability. The reason why style matters so much in the development of profound musical literate operations is revealed by a linguistic parallel: "Readers use all their available knowledge and schemas to predict what is coming in the text and what the meaning will be" (K.S. Goodman et al, 1987, p. 206). As has been previously pointed out,

the ear automatically groups similar musical formulae into easily identifiable stylistic groups and culturally-bound humans naturally produce musical forms within those styles. Thus in music, as in language, contrived compositions are not needed for learning to read and write music. "It is simply a matter of predictability: the more predictable the literature, the easier it will be to read" (1986, p. 39).

The key to providing highly predictable music for learners lies in children's singing games, wherein musical forms constitute a brief history of music from the smallest two-note motive to the full-blown folksong with a eight-bar phrase (Kodály in Bónis, 1964, p. 46). Between the ages of 6 and 9, children naturally sing rhythmic and tonal patterns which are "predictable and closely related to music the children have heard as part of their culture" (Webster in Peery et al, 1987, p. 161).

This research shows that musical predictability is aurally dependent long before it is visually so. Melodic turns and motives constitute basic musical units which appear in naturally-occurring children's musical literature in astounding variety. These structures are what the musical ear grasps in the development of melodic memory, hearing solmization and the eventual development of musical reading and writing. Of course, the more the literature base of musical education can be arranged into similar style groups, the more predictable it will become, and the more fluently and more deeply the learners will be able to use literate operations. This, then, is another linguistic parallel, since texts also have recurring structural patterns which help readers anticipate what is coming next. As a result, readers develop prediction strategies "to predict the ending...the logic...structure...and the ending of a word" (K.S. Goodman et al, 1987, p. 206). With Meyer's statement that experience within a particular musical style creates an expectation of what is

coming next and therefore, the perception of musical meaning, this picture of musical predictability is made much more complete.

The prime determining factor of predictability in either language or music is redundancy, which occurs whenever the reader has more than one source for the same information (K.S. Goodman, 1987, pp. 17-18). Finding the musical parallel for redundancy is especially easy in the very tight and efficient realm of folksong form. Imberty (1975) identifies the existence of an "internal rhythmic redundance" based on pulsation [which is also tempo], patterns of durations and accents. He describes melodic redundancy based on the linking of same or different notes and intervals. He states that the more redundant a melody, the simpler it is to the perceiver (pp. 228-231).

Imberty (1975) also refers to the capacity of music to impart information through rhythmic and melodic redundancy as its "degree of structuration" (p. 227). He also observes that there are at least three visual aspects to the degree of structuration of musical literature. These are first, the number of distinguishable elements composing the form; second, the degree of unity perceived among the elements of a form; and, third, the degree of dissimilarity between the elements of this form (p. 231). These factors are found abundantly in the folksong-to-art music connections.

Whereas the degree of structuration refers to the inner relationships within a single composition or folksong, there are also important intrasong relationships. These structural connections between variants of the same song provide an extraordinarily tightly-knit stylistic body of music. When one considers the number of known variants of all known folk melodies, the possible number of separate melodies becomes enormous. This is because folksong actually invites variation - the entire corpus of it is really nothing more than "...an endless series of melodies developing from each other" (Kodály in

Bónis, 1964, p. 222). Through this tendency to generate variation, folksong therefore has a natural and built-in mechanism for rendering itself extremely redundant and predictable as a body of literature.

Melodic variants, says Celestine Deliège (1975), bring one to the successful reading of music because they literally imply their own musical grammar through their frequently recurring associations of melody and rhythm. These associations therefore "facilitate the global reading of melody and rhythm and permit a type of logical notation which adequately records even the least detectable variances". The associations she is speaking of derive from the interactions of rhythm, melody and harmony within a single musical work which combine to determine its particular "threshold of reading" (p. 154).

A Study of Predictability in Children's Musical Literature. Predictability concepts raise the question as to whether or not the teacher may be able to enhance certain aspects of musical literature in order to optimize hearing, reading and analytical fluency for learners. By combining other musical concepts and their linguistic parallels as just discussed, we may recognize several governing factors pertaining to the predictability of musical literature. For instance, if the expressive and aural material being experienced in the same lessons as the reading material have the same stylistic and tonal characteristics, then a certain general predictability, born of redundancy, should render the hearing-reading process much more efficient. This general predictability should be further enhanced if the dictation, improvisation and student composition material were likewise compatible with the experiential and reading literature. This is the global predictability suggested above by Deliège and is at the very core of the teaching traditions inspired by the composer-educators. This points to placing a burden on the literature itself to enable a reader's process of comprehension (Y.Goodman, 1974, p. 67).

From these key concepts, a set of musical predictability criteria have been derived, assigned numerical values, and are listed in Appendix C. The purpose for doing this is twofold: to give teachers a consistently applicable tool for assessing the predictability of musical literature; and, to empower teachers to collect, compile and provide predictable literature for their own teaching situations. Some of the criteria apply to interrelationships within a single song, others apply to intrasong relationships. Therefore, the actual percentage of predictability for either a single song or a bound collection of them can be determined. In the particular study reported here, predictability percentages refer to bound collections, with the highest possible score being 28 points, or 100%.

More specifically, this predictability measure is here applied to a sample of first grade children's singing textbooks from China, Hungary, Switzerland and the United States. The first grade was chosen because it is during this pivotal year that all basic aspects of notational meaning-making and reading-writing skills are connected. It is acknowledged that due to philosophical leanings, some of these books were specificially intended for the development of notational fluency while others include that as one among many purposes. Yet, one must ask why it should be found necessary to put notation in front of learners without some expectation of reading development.

With only one exception, all of the composer-educator's books rated in the top half of the 12 collections sampled. The one commercial text in the top half shows the heavy influence of a team of Kodály-trained editors, but its visual index is strongly skewed because almost all of the seventeen songs were kept in the same key. One particularly striking finding is the difference between Ives' 1832 edition based on Pestalozzian principles and Mason's 1844 publication which does not follow those principles.

As significant as the overall predictability percentages for each singing text is a comparison of the data for the constituent categories of the study. Those which show the most contrast between the lowest- and highest-ranking textbooks are the Tonal, Metrical, External Redundancy and Internal Redundancy categories. To illustrate, the lowest - Mason's and Webb's 1844 edition - showed .40 points out of 5.0 in Tonal, .20 out of 5.0 in Meter, .0 out of 5.0 in External Redundancy, and 1.44 out of 4.0 in Internal Redundancy. Ive's Pestalozzi-based edition of 1832 faired considerably better as can be seen in Table 1 below. Overall, the earlier American editions as well as current American trade texts show corresponding weaknesses, especially in terms of External Redundancy as also demonstrated in Table 1.

Table 1 Predictability Detail

Edition	Tonal (5)	Metrical (5)	External (5)	Internal (4)
Andrasné-Szmrecsányi	4.90	4.70	4.13	3.90
Kodály	4.87	4.17	4.30	3.83
Dobszay	3.96	4.52	4.40	3.22
Jaques-Dalcroze	2.77	1.12	4.00	3.00
Macmillan (1995)	1.50	2.50	1.39	3.11
Ives	1.26	1.74	1.09	2.12
Holt (1988)	0.93	1.03	0.50	2.63
Silver Burdett (1995)	0.00	1.40	0.20	1.20
Mason and Webb	0.40	0.20	0.00	1.44

Most helpful to teacher-researchers in terms of their own curriculum and materials development, however, are the same category comparisons for the higher-ranking singing books. The high scores of the Hungarian texts in these categories reflect the highly-elaborated folk- and art music research

underlying the curriculum. As mentioned previously, Jaques-Dalcroze predated the development of this kind of literature research, but still managed to newly compose a highly predictable collection. Its major weaknesses derive from changing meters and keys too often. What is particularly significant about these four editions is how far they exceed the others in predictability and how crucial the four categories of Tonal, Metrical, External Redundancy and Internal Redundancy are to the overall predictability of a collection. This firmly locates the focus of predictability on musical structure, not the physical appearance of a singing text, though there is no question that the construction of meaning is greatly enhanced through visual means. Getting the two factors into proper balance will produce highly predictable notated music.

I had an opportunity in 1980 to observe the teaching of Magda Szmrecsányi, a co-author of the most highly predictable (93%) singing textbook in the study. Using the very same edition reported on, her teaching in regular (twice-weekly singing lessons) Hungarian primary schools reflected the subtle shifting back and forth between expressive experience, accurate musical hearing, and notational literacy skills which characterize the intuitive model described in this dissertation. All of the students experienced success in notational literacy, but the sense of play so natural to children always prevailed and they seemed highly motivated to continue. Most revealing was the role of the literature: it was always present, but not always in notation. The notation, when used, was a natural extension of the rest of the lesson, but not the sole focus of the teaching-learning. Most strikingly, the global predictability resulting from the well-organized literature was very much in evidence.

It is important to note, at this juncture, that excerpts from the second most predictable collection, Kodály's 333 Elementary Reading Exercises, are found abundantly in the texts immediately above and below it, i.e. the

Szmrecsányi and the Dobszay, respectively. The 333 were intended to function as predictability-enhancers to be inserted into the gaps between folksong variants, but not intended to be used in strict as-printed sequence - a sequence which still shows 90% predictability. Additionally, the physical layout of the book provides a strong case for the importance of visual issues as predictability factors. The right-side pages are written in staff notation and stay in one key per scale type. But the left-side pages, written in solfa notation, are especially intended to develop skills in absolute note names in any key, for instrumental transposition practice and for playing the piano in counterpoint with one's own singing in order to develop polyphonic hearing (Herboly-Kocsár, 1993, p. 11).

The third most predictable singing book was that of László Dobszay. His entire K-6 series is based on Hungarian folksong variants matched to art forms. The lower grade levels are organized by the months of the year. Each month features a main melody followed by many of its variants, plus composed material (often from the 333) in the same scales, syllabic schemas and styles. This topical arrangement by month nicely fits the whole language model in which curriculum is organized around topics or themes (K.S. Goodman, 1986, p. 30).

In an interview with Professor Dobszay (1993), he gave his rationale for this award-winning series of singing books. He explained that in folksong variants, the melody, or the rhythm, or the cadences may change while other elements usually remain constant. This means that typical second graders, for example, might spend a month singing, hearing, reading and writing "only seven-syllable tempo-giusto melodies with a given pentatonic melodic outline". Then, in the next month, six-syllable per line rubato melodies with the same melodic content might be featured (npn).

Through his own teaching experiences using this literature, Dobszay (1992) finds that children are sensitive to differences of just a few notes and can make rapid progress in hearing, reading and analysis using variants because the "skeleton notes", rhythmic schemes and cadences stay the same (npn). He concludes that the most powerful result of using closely-related variants is that they enable the learner to focus on what is different so that "new elements appear in a well-known frame". Insightfully, he views the formation of variants as a phenomenon - not a genre - which occurs within separate styles, making them richer and self-referring (p. 60), while at the same time revealing to teachers how to organize singing material for all three musical operations.

The Co-Construction of Method

As for the role of the teacher in musical education, two of the larger issues plaguing modern music education from within are the ignorance of its proponents about the constructivist unity of these major philosophies being explored and the concept of "method". It is not at all uncommon to hear music education professionals say something like "Oh, I teach the 'Orff Process'" - or the "Kodály" or "Dalcroze Method". Herboly (1993) relates that what Kodály intended is "not a recipe, not a cookbook. You should know the kids, you should know the music - that's all you need to know!" (p. 12). All of the composer-educators cited in this study make it very clear that any rigid method would actually defeat the development of true musicality.

Jenö Adám (1944, 1971), the first Hungarian educator to work out an implementation of Kodály's philosophy had this to say about method: "A special educational strength lies hidden in the art of music...Most every teacher attuned to music is an excellent educator...This spirit must never

withdraw behind the screen of a stiff methodological visor...I have seen discouraging examples of...methodology rigidly applied as end in itself" (p. 1).

A parallel insight comes from Frank Smith (1992): "People who do not trust children to learn - or teachers to teach - will always expect a method to do the job" (p. 441). Smith calls specifically prescribed methods "the systematic deprivation of experience" (p. 441). As a counter to this concept of method, he puts the burden on teachers to help children overcome learning difficulties with "more patience and sensitivity" (p. 441). This is exactly what Adám was advocating, as well as the top-level Orff teacher-trainers. These latter echo that "...Written instructions can never replace the personal teaching and lesson supervision of a good teacher with knowledge and ability..." (Keller, 1963b, p. 3). Edgar Willems (1979) brings a much sharper focus to the role of the teacher:

> "It is very much more a matter of **following principles** than of adopting a particular 'method'. People will always be thinking up new 'methods'. They may need to be treated with caution; they may even be dangerous. The principles, on the other hand, are a permanent feature. They must be discovered: alone, or with someone else's help..." (p. 21).

Adám's view concurs with this, for he says that an able teacher can improvise within the large framework of a unified curriculum. This improvisation brings improvement based on a growing sense of judgment. Adám (1944, 1971) also confides that it was not his, nor Kodály's "purpose to build a road...paved with indestructible and immovable stones" (p. viii). Further, "It is desirable that every dedicated and professional music teacher find as many effective ways and means as possible to reach the goal of musical literacy in his students" (p. 124). These personal methods do not have to be mistaken for the totality of "the basic concept from which they sprang" (H. Szabó, 1969, p. 3).

The key concept underlying Hungarian success in musical education is their understanding that answers are not found in teaching methods, but in music itself which suggests many varieties of methods. In Hungary, "the cult of good music" produced the so-called "Kodály Method" but what Kodály actually contributed were the theoretical aspects of a practical framework which he hoped individual teachers would elaborate according to their own situations (Czövek, 1979, 78). Dobszay (1992), himself a student of Kodály's and Czövek's, strongly cautions against expecting to find a "method" in his or Kodály's writings. Though teachers well-versed in teaching techniques are necessary, they must continually self-renew, especially in these changing times. This is what Kodály really intended (pp. 11-12).

Over a century ago, John Curwen (1875) instructed teacher-trainees that "No written method can provide for all cases. Each particular class is a study in itself" (p. 27). Elaborating on this line of thinking, Erna Czövek (1979) said that "There is not a single work by an expert pedagogue that can absolve the practicing teacher from constant research, continuous experiment..." and the development of his own musicianship "in which his knowledge and musical character will be constantly renewed" (p. 50). Adám (1944, 1971) adds that practice and experience must play a great role in the refinement of pedagogy because every class presents situations - in the form of "opportunities and results" - which cause the teacher to continually construct and reconstruct his or her method (p. iii). Thus, he says, "The healthy spirit of practical purposefulness", independently pursued by the professional, should govern music teaching (1979, p. 1).

John Dewey (1938, 1963) added a more global dimension to this perspective. He reminded educators that movements which get caught up in their own "isms" fall into the trap of self-protection by reacting against other

"isms" instead of concentrating on "a comprehensive, constructive survey of actual needs, problems, and possibilities..." (p. 7). Frank Smith (1992) says this is exactly what happened when somewhere along its developmental continuum, the educational establishment "backed the wrong horse" by putting its emphasis only on the theory of learning as derived from experimental psychology (p. 435). From his perspective as a folksong ethnomusicologist, Cecil Sharp (1965) concurred that it was the "...inclination of the theorist to reduce everything to a system, hedged round with rules...[which are] fixed and unalterable...Consequently the freedom of the artists is often...confined" (p. 101). Confined, says Czövek (1979), by the "destruction of enthusiasm, curiosity and...inventiveness" not only in the students, but also in the teachers! This unconstructive type of teaching comes from those who believe that "bureaucratic" methods are "universally...valid...and enforceable" (p. 18).

How much method is then acceptable for the kind of musical education under discussion in this study? "'Method', says Coleridge, 'literally means a way or path of transit'. But 'mere arrangement', he shows us, 'is not method'". Or, a genuine method is "moulded by the object for which it is planned" (Curwen, 1875, p. 1). Thus, the construction of a method requires "not merely a knowledge of the things themselves, but, above all things, 'a knowledge of the relations which things bear to each other - to the observer - or to the state and apprehension of the hearers'" (p. 1). Various aspects of this definition now follow in preparation for the creation of a general operational framework for music educators.

The Principle of "Having Method"

Willems (1975) recognizes that, of course, a well-organized method makes progress sure and easy for the student as long as the teacher has the correct mentality about what method actually is. He says "It is not necessary to

have **a** method, but to **have** method" (p. 87). Through teaching according to sound musical and developmental principles, the teacher "rediscovers the essential principles...We will even say that if the teacher hasn't rediscovered these principles for himself, he has really not yet understood them...".

What is being uncovered here is the co-construction of method by the teacher and the learner guided by meaningful content. The first principle this suggests is that "'The learning process lies within...Learning is a drawing-out; not a pouring-in process...The word 'education' has its roots in the Latin word *educere* - to draw out" (Howard W. Hunter in Wadhams, 1986, p. 9). Gardner (1991) notes that between the years of two to seven, children are trying to make sense of the products of interaction between their sets of intelligences and the world and people around them. This integrative activity - from within the child - is crucial to their survival, mentally, not just physically (p. 83). Along these lines, Gardner describes three roles for musical learners: perception, production, reflection (pp. 238-241).

There are certain teacher behaviors which assist the learner in "making sense" of their learning opportunities. Drawing on Pestalozzi's principles, Curwen (1875) described true education as "aided self-teaching" (p. 35). Therefore, one of the teacher's interactions with process and content is to break them down until the steps are so small that "...the pupil can easily take them" (p. 38). Elaborating on this principle, Wadhams (1986) says that "...perception is a function of contrasts. When you increase the contrasts, (the opposites), you increase the perception of the learner and by so doing you expand his agency, enabling him to make more discriminate choices..." (p. 9). Therefore, as a teacher provides learners with clear contrasts, the learners respond by developing greater understanding through their own perception,

giving them a greater number of choices. In this way, they learn to have confidence in their own reasoning as they make sense of the world (p. 9).

Within the Teacher

The constructivist definition of method being presented here has many facets. For instance, a good music teacher accepts the task of guiding the student in the establishment of a direct connection between "outer musical life and his own soul" (Willems, 1956, 1987, p. 47). An example of this kind of teaching can be found in Albert Schweitzer's writings on J.S. Bach wherein he details the expressive power of intervals and how to connect them to human feeling (p. 47). Since the whole purpose of music is to enrich mankind, the relationship between instructor and student(s) must be built on mutual respect. All concerned must be elevated to a higher plane by this relationship through the encounter with music (A.H. Goodman, 1967, p. 39).

In an interview with László Vikár (1993), who is a pedagogue and conductor as well as an ethnomusicologist, this same principle was further elaborated. He sees that there is much more to learning choral literature than mastering the melody, the rhythm and the words. "Art and good performance only start after doing all of this and then you have to add something else" (npn). There must be several times when in a performance, the conductor and members feel wonderful moments of musical insight and uplift. In order for this to happen, the conductor at least must have some feeling to convey, something special to express, otherwise there is no conducting or music-making. "You have to want to say something through music". When this is communicated to the singers, then they reflect it back to the audience and the "magic circle" is completed... (npn).

Music teaching is therefore an art and a science. It is "really serious pedagogy...because you have to be very conscious of what you are doing and

how you are reaching the goal, and...it couldn't exist without [the art of pedagogy]..." (Vikár, 1993, npn). The underlying principle is that teaching and conducting should be done with "much personal feeling" (npn). One's teaching is good when one gives their person as well as their subject to the children. Children, in turn, reflect back what they are giving and all grow together in the beauty of teaching and learning.

The perfect summary to this inner aspect of co-constructed method comes from James Mursell (1956), eminent American musical pedagogue:

> The right approach in bringing music to your children is to aim at human values...vary your procedures in accordance with your situation...to be...sure that your procedures are directly and simply associated with your aims...to think and plan in terms of musical experiences rather than of music lessons, to be sensitive to the intrinsic musical quality of those experiences...(pp. 65-66).

The Bearing of Intuition on Method

The composer Zoltán Kodály (in Eösze, 1962, p. 71)was adamant that singing and music must be taught in a way natural to children, so that they would "acquire a lasting appetite for good music". He understood that pedagogy could not be abstract and purely rational, presenting music as some sort of algebraic system wholly unconnected to children (in Bónis, 1964, p. 120). Rather, "The way should be paved for direct intuition..." (p. 120) and "...spontaneity" (Eösze, p. 71).

Expanding on this insight of Kodály's, Willems (1954) wrote that intuition was something pre-cognitive. "With the artist, the creator, this intuition always precedes intelligence" (p. 227). He further pointed out that the biggest challenge of the music teacher is to help the child make the transition from intuition to conscious knowledge while still leaving the intuitive musicianship intact for further knowing (p. 227). Along these same lines, Gardner (1991)

notes a perplexing problem - that children who so adeptly master language and other intellectual skills often have a difficult time learning at school. He states that schools must learn to continue the naturally intuitive learning of children at home (p. 3). Adám (1944, 1971) found that the solution to this derives from the "fortunate coincidence of the teacher's imagination and ingenuity and the child's playful instincts" (p. 35).

Kodály (in Dobszay, 1992) said that the essential in art "...is not the technique but the soul...That much of technique, which is sufficient for the free manifestation of the child's soul, can be easily attained under the guidance of a good teacher" (p. 71). Willems (1956, 1987) likewise addressed the issue of imbalance between intuitive learning and technique:

> Since the beginning of the twentieth century, the rapid development of technique has surpassed the progress of culture. An imbalance has resulted from it which has had repercussions in more than one human activity and particularly in the arts. Thus, the new pedagogy seeks to react against the growing materialism of current times (p. 1).

Willems (1956, 1987) went on to specify that this "new pedagogy" must address the issues of unifying the artistic and scientific aspect of music as well as reconciling knowledge, feeling and action (p. 1). Thus, in his view, musical teaching must focus on certain "psychological facts": the joint development of the intellect, sensorality, motricity, feeling and creativity, "...in brief, to form a harmonious and expansive human personality" (p. 1).

Czövek (1979) explained how this is to be accomplished. Although some artistic education may have vocational goals in sight, it really is seeking to enrich life above all else. This means that it is not the student's talent which determines success, but how creatively we are able to act upon his independent activity through our instruction. This, she says, can only be done

by educating the child's ear to grasp musical thought "through his own perception" (p. 9). Even though all children are not equally musically adept, the teacher's pedagogy must have as an aim to lift the less naturally talented as close to the level of the talented as possible (p. 17). This occurs when the teacher is able to bring order to all of the child's existing joyful, egocentric activities without trying to make them occur (pp. 24-25).

Method as a Teacher-Learner-Music Relationship

Accessing the learner's intuition means that it is the teacher's responsibility to find the most direct and successful path to the children's musicality (Dobszay, 1992, p. 60). Kodály's concept for finding this intuitive path centers on the systematic organization of musical literature which in and of itself provides the continuous progress of education (Szabó, 1979, p. 27). Teachers will only succeed who can get to the essence of music and communicate it to their students (p. 27). Willems (1979) insists that this communication must be essentialist, not relying on extra-musical means to develop musicality in the learner (p. 5). As Dobszay further explains it, if external means are necessary to reveal the logic of a musical element, then it probably means that the point to be made will be burdensome to most of the students (Dobszay, 1992, p. 80).

Certain needful teacher behaviors are suggested by the above principle. Everything hinges on the musical personality and intuition of the teacher (Dobszay, 1992, p. 67). Lajos Bardos (1984), a renowned Hungarian composer, reported that his mentor, Kodály, once told him to "proceed with a profound understanding of the material, upon which all else may be built" (p. 288). By discerning the relationships within music, the teacher will hopefully find some key concept which will shed light on all the rest (Curwen, 1875, p. 2), or as Dobszay says, the inner logic of music itself must direct the teaching

of it (p. 10). Only the teacher who has experienced music deeply and richly can find this out and convey it to learners because it is this very discovery of the profound truths of the subject which empowers the teaching (p. 16). Thus, in order to teach well, "the teacher has to be familiar with the music literature, its repertoire, essence, and its relationships so that he may make a reasonable selection, realize a good interpretation, and moreover, establish his own method according to the logic of the music in question..." (p. 11).

In compiling their first collection of folksong for classroom use, György Kerényi and Zoltán Kodály discovered that the songs themselves produced a natural sequence which suggested a methodological approach of their own (Kodály, 1966, p. 82). This happened because good melodies and their rhythms give convincing evidence of form within one style. Within a style, notes and motives interrelate and form yet more complex sections which shape the final form of the work. "It is this indissoluble interdependence that determines how music should be taught" (Czövek, 1979, p. 20).

Therefore, Czövek (1979) continues, the essentials of music teaching must focus on the "meaningfulness" of the musical elements of a work. In other words, the teacher must lead the students to understand why a musical structure is beautiful. This beauty may be a function of its "logical and purposeful" structure composed of melodic line or harmonic sequence, among others, and the emotions evoked (p. 21). Czövek concludes that "...macrocosm and microcosm" lie hidden in all true art. The work's totality consists in the interplay of motives and their logical interconnection...It is the primary task of music teaching to get this across..." (p. 13).

Alfred North Whitehead (1929, 1957) contributes a helpful insight by saying that "...education is a patient process of the mastery of details...There is no royal road to learning through an airy path of brilliant generalisations...The

problem of education is to make the pupil see the wood by means of the trees" (pp. 6-7). And of course, this kind of teaching must allow for the creative nature of the teacher which is dependent "not only on...talent but also on...freedom of will" (Czövek, 1979, pp. 7-8). In this way, a teacher feels free to use her own creativity in developing a variety of techniques to achieve musical goals (Forrai, 1974, 1988, p. 18). And this creativity can only take full flight when the teacher knows music in the ways detailed above, which brings us to the statement of a fundamental principle: Music teaching itself should be an artistic experience for the teacher. This precludes any fixation on a single technique. "Through years of experience the teacher develops thousands of variations in her teaching techniques:..." (p. 18), since the teacher must constantly adjust because children are constantly developing and changing (p. 33).

This ability of the teacher to continually adjust the relationship between the content and the learner is dependent on the teacher's knowledge of several developmental principles as they apply to music. To begin with, "comprehensive music education should be primarily vocal..." (Dobszay, 1992, p. 52). Then the teacher must acknowledge that "...The mind is never passive; it is a perpetual activity, delicate, receptive, responsive to stimulus..."(Whitehead, 1929, 1957, p. 6). Upitis (1987) therefore views the child as one who "actively constructs musical coherence" (p. 58). Smith (1992) sees that the construction of meaning happens when learning is appropriately "social and developmental" (p. 434). Good teachers don't rush children because it takes time for children to mature and develop naturally. Conversely, good teachers don't hold their children back from natural development (K.S. Goodman, 1986, p. 36). Teachers who understand the developmental nature of the teaching-learning process understand that the goal is to uncover a

subject rather than to cover it (Duckworth, 1987). The art of teaching is learned by example, theory and practice - mostly through practice (Curwen, 1875, 27). As to effective, lasting teaching and learning, it "depends on helping students to develop their own images of themselves" (F. Smith, 1992, p. 434).

Above all else, in the process of co-construction of meaning and the methods of achieving it, the teacher must always consider the needs of the students. Ultimately, this involves finding ways to help students take responsibility for their own artistic growth (Czövek, 1979, pp. 8-9). The teacher's role as a gatherer of this information cannot be taken lightly. The truly professional teacher will use information about the musical development of children in their classes for the constant improvement of instruction (Adám, 1944, 1971, p. 17) and (Gardner, 1989a, p. 236).

Specific Aspects of the Teacher-Learner-Music Relationship. Up to this point, the teacher-learner-music relationship has been explored as pairs of relationships. But now it is critical to consider how the three work together because teaching techniques alone can easily entrap teachers who don't understand how to synthesize music as literature, sound principles of child development and the teacher's own musicality (Dobszay, 1992, p. 53). Or, as Frank Smith (1992) so firmly points out, techniques and methods cannot insure learning. Learners "learn from people...it is the *relationships* that exist within the classroom that matter" (p. 440).

I asked Professor Dobszay (1993) what advice he would give to American music educators on this point. He said that it would be important to provide a systematic musical education for teachers and children. In this type of education, each teacher must cultivate a continually deepening understanding of each musical period and how to approach it with children. Each teacher must then find a "simple, well thought-out way, without any tricky

ideas, of systematically introducing someone to music step by step" (npn). The other charge would be to provide a rich musical life for children and to get them involved in it (npn).

Jaques-Dalcroze (1930) felt that the role of the teacher was anticipatory; to "rightly direct" the child's will toward "generous and altruistic" motives. For him, the main thing was for the teacher to "utilize what 'is' in building up what may 'become' by bringing into harmony the child's powers" (p. v). This requires extraordinary sensitivity to what a child is able to do, not necessarily what he or she feels like doing. This is necessary because two extreme tendencies endanger child education: promoting too much freedom and suppressing or even changing natural learning for each individual. At risk is the very own, unique self of the child (Hatt-Arnold and Croptier, 1965, p. 56). One might also add that the very unique relationship between children and music is also at risk.

The real objective of properly shaping the three-way relationship among the subject, the learner and the teacher is to enable the learner to enjoy success, which provides its own motivation for further learning (Adám, 1944, 1971, p. 167). It is therefore clear that children must feel that they are being successful. "Every lesson must be built up in such a way that the pupil does not become tired, but senses the growth of his strength and looks forward to the next lesson with impatience" (Kodály in Nemes, ca 1980, p. 3).

As for the musical component of this three-way relationship, "Nothing will be explained which is not already in a song which the children master, which occurred naturally" (Kodály, 1966, p. 77). This suggests that "the pedagogical work must be constructed from those songs which the children master...one should...not pursue theory separately but only slowly draw the attention of the young people to that which always repeats in the particular

songs..." This in turn suggests that a concentrated theoretical training should be given later, in adolescence (p. 78). This approach is clearly in harmony with Pestalozzi's experience-based learning and Piaget's general concept of stages of cognitive development.

A Summary of Literature-Based Musical Education

The complete title of the ensemble of the accumulated principles revealed in this model might very well be Principle-driven, Learner-centered, Co-constructed, Literature-based Musical Education. Principle-driven because this teaching process trusts the specialist music teacher to act intelligently and follow correct principles in the ongoing renewal of his or her own method. The teaching must be learner-centered, because the pedagogy, or how to teach, is determined according to the operations which a given group of learners is ready to apply. Together, teachers and learners interact with musical literature as they cooperate in the construction of ever deepening musical meaning. Teachers must attend carefully to the quality and cohesion of the literature base used for this intuitive and holistic kind of musical education.

Learners acquire musicality most efficiently through experiencing, hearing and becoming literate in the historical elaboration of music as literature. Genuine musical learning of this literature is circumscribed and governed by a powerful, but generally indefinable musical intuition which is largely derived from musical experience and which causes learners to contribute to the growing body of their culture's music.

Music as a literature derives from the three streams of musical conceptualization arising in most civilizations, which are monophony, polyphony and homophony. Monophony is primarily melodic, though rhythm is always present and harmony may be implied in certain stylistic cases. Polyphony involves two or more rhythmically independent but tonally

connected melodies, which not only require the presence of rhythm and melody, but also actually create rapidly shifting harmonic structures. Lastly, homophony is so vertically oriented and so rhythmically static in relationship to the preceding, that it is the least dependent on melody and rhythm. All of these are bound by the cultural encoding of meaning, stylistic conventions peculiar to place and time, and each culture's, composer's or interpreter's viewpoint.

The historical development of musical literature then suggests that pedagogy should flow from monophony as embodied in the children's singing games, then the adult folksong occurring in a culture's musical mother tongue, then on to the monophony of neighboring or related cultures. Concurrently with the mastery of monophony, learners prepare to explore polyphony through combining monophony with rhythmic independence after which they are able to develop the sense of cadential rhythm which allows for the hearing of homophonic structure. After the more static homophonic constructions are understood, polyphony, with its rapidly shifting cadences and key changes can be revisited and more fully explored. Therefore it is demonstrated that in literate, as in expressive/experiential and aural operations, there is a constant interplay between the three musical elements of melody, rhythm and harmony and the three cognitive operations of musicality.

These concepts are vital to the widespread establishment of meaningful music education, since there has been a concerted effort in the last several decades to develop children's musicality mentally, that is, through exploratory studies in sounds and noises by which children invent their own study literature. These remarks are not to be construed as an attack on contemporary music. Rather, it is an appeal not to discard the whole of musical history in favor of the vocal few who purvey intellectual music. Swanwick (1979) observes that contemporary music should not be just currently

composed music, but all music that is "available today". In reality, "we might in one day encounter...music from four centuries and ten cultures" (p. 88). This model provides for a reasonable and typically relational way to achieve this balance, which has been shown to exist in the deeper connecting layers of folksong and art music.

CHAPTER V

STRATEGIC REFORM IN MUSICAL EDUCATION

Overview

The model of musical development presented in this dissertation is, in part, a composite of the discoveries of some composer-educators and music educators. None of them actually set out to construct such a model, rather, their efforts were more intended to effect pervasive artistic reform in their countries. Their efforts consistently progressed from advocating comprehensive musical training, to the compilation or composition of enabling musical literature, to eventually leading actual reform efforts. The earlier ones - Pestalozzi et al, Curwen and Mason - worked mostly in their national spheres, though Pestalozzi's principles did certainly have considerable influence outside of his own country. The later ones - especially Jaques-Dalcroze, Kodály, Orff (and Willems to some extent) - developed significant international followings in the form of professional associations which continue to join with other arts education movements to advocate artistic reform in public education.

Most importantly, the latter four recognized that pedagogues in each country or culture would have to work out their own unique realizations of the universal principles of musical education presented in this model. As a follow up to that expectation, this final section explores that possibility for American education by summarizing key principles and suggesting types of research projects. This exploration will be approached through the lenses of retrospection, introspection and prospection applied to the American educational situation.

A Retrospective

Perhaps our efforts to revitalize American musical education need to continue the widespread and unified reform begun in Hartford and Boston in the 1830's based on Pestalozzi's principles and which still underpin so much of modern education. The matter begs an answer as to what happened in our country to so derail our efforts that we are no longer unified, but broken into various camps representing various methods and non-methods, endlessly talking **about** music while school districts still find endless reasons to cut it from the permanent curriculum. Speaking to the League of American Composers in 1945, Kodály made an observation about the potential of American musical education. He said that "If the right balance can be restored in the United States between singing and instrumental music, and between activity and passivity, I think they can achieve the best possible results sooner than any other country" (Vikár, 1969, p. 15). To date, this mandate has yet to be realized, though significant attention has begun to be drawn to the problem, especially with the recent adoption of national standards and teaching objectives by the Music Educators National Conference.

It is reasonable to suggest that the American educational establishment learn as much as possible from the reform experiences of other countries. One principle particularly well-learned elsewhere is that "Culture is the result of slow growth" (Kodály in Bónis, 1964, p. 127), an especially difficult lesson for the pragmatic, results oriented American society. A companion principle is that the concept of forcing accelerated cultural growth from the top down is deficient thinking which never quite works out (p. 127). This is simply because "...culture is an ascent and the road leading to it is tiring and demands sacrifices" (Dobszay, 1972, p. 29).

One of the first sacrifices to be made must be in the area of teacher-training. Our capacity to build factories or apartment complexes in one short year must not be equated with building teacher expertise in the same amount of time. "It takes much more time, much more patience, and of course, you have to be very careful how you teach and what you teach...So the what and the how are the two large questions" (Vikár, 1993, p. 4). American college teacher training courses have to compete with other requirements which greatly dilute the depth and continuity of teacher development. An observation of Eisner (in Brandt, 1987-1988) provides a provocative perspective on these same issues:

> We are systematically training pedants who have lost a powerful view of themselves as creators, as significant makers of meaning, and as interpreters of personal experience. We can teach our children about the history of art and the rules of perspective - and we should. But how do we stimulate children to respond to the primal messages that seem unmediated by our culture? ...Now more than ever, our children need to see clearly, hear acutely, and feel sensitively through the exquisite language of the arts (p. 7).

These concepts lead to the notion that the artistic reform of education must avoid the pitfalls of superficiality motivated by an impatient desire for immediate results. "Artistic education is especially based on the awakening and culture of vital sensations and affective states..." (Willems, 1954, p. 228). One writer warns that the simple acquisition of information does not really constitute education. Rather, "true education is guidance to the experience of life as a whole" (Campbell-McInnes, 1939, pp. 20-21), something which has been demonstrated as a particular specialty of the arts. To help American music and arts educators avoid the entrapment of superficiality in the educational system, the Rockefeller Panel (1977, pp. 63-68) has defined five

"categories of involvement" to help educators understand the status of the arts in their curriculum and how they might want to change that status:

Category 5: The arts are regarded as the curriculum core
Category 4: The arts are regarded as equal in importance
Category 3: The arts are regarded as minor but important
Category 2: The arts are regarded as enrichment
Category 1: The arts are regarded as unessential frills

In order to effect the kinds of sweeping changes implied by categories Four and Five above, music educators will do well to emulate the four pillars of whole language implementation:1) A strong learning theory; 2) Language theory; 3) A comprehensive perspective on teachers and teaching; and, 4) A language-centered curriculum (K.S. Goodman, 1986, p. 26). It is suggested that the model of musical education described in this dissertation fulfills all four of these requirements in an analogous way.

Another requirement should be the assessment of individual growth and progress in music. Times are favorable for achieving progress in this area since long-ignored qualitative methods of assessment are now being widely reassessed and implemented by American educators in what is termed portfolio-based assessment. Much progress in this area has not only been made in language literacy, but also in the arts by such research collaborations as Project Zero and The Arts Propel, both under the guidance of Howard Gardner. Especially important is the fact that key educational thinkers are finally agreeing that empirical measurements alone don't adequately address the idiosyncratic musical issues of developing young musicians. Observations, rather than measurements of musical behavior, focus more accurately on music and human nature, for "an art like music cannot be satisfied by purely quantitative psychology for qualitative and irrational, affective and intuitive values..." (Willems, 1956, 1987, pp. 1-3). This perspective further supports the teacher as a researcher in the process of constructing method.

There is a triple validation necessary in the kind of reform being suggested: music as a subject and as a discipline, teachers of music as well-trained pedagogues and researchers, and the beneficial effects of both on the learner. Just getting the opportunity to begin is difficult in an educational culture where art and music "are uneasy guests in the house of education, no matter how many field trips the fourth grade takes to nearby museums" (Eddy, 1981, p. 4). This happens because artistic activities are usually seen by the establishment as "means of entertainment, escape or superficial pleasure" instead of "the expression of the deepest elements of Man's inner self" (Willems, 1979, p. 20).

This erroneous view is not unique to the American educational experience. All composer-educators and their associates, as well as general educational reformers, have had to struggle against the same mentality in the process of getting a foothold for their reforms. Jaques-Dalcroze started with one class in Geneva and gradually convinced the directors of the Geneva Conservatory to incorporate his kind of teaching into the official program. Once having accomplished this, he then appealed to the national educational establishment by delivering a series of brilliant conceptual papers at a 1905 congress of educational leaders. Change was slow and painful, and in the end, was greatly diluted by World War I.

Kodály likewise first used the pen as a means of overcoming the frustrating inertia of ignorance and tradition. Progress began to be made toward the permanent establishment of regular and frequent public school singing classes when he and his associates were able to convince the establishment that "Music is unconditionally necessary to the development of a human being...not some indispensable article of amusement" (Dobszay, 1972, p. 30). One of the Hungarian scholars later explained that "The practice of art cannot

be equated with recreation...Art is not restful like recreation, as we are not passive participants. We have to pay attention, and this demands a certain mental exertion..." (Czövek, 1979, p. 12).

Dobszay (1972) stated that the Hungarian experience showed them that superficiality had all along been partly the fault of a music education establishment that did not take its own subject seriously enough. As he observed, if musical education "...does not contribute recognizably to the enlargement of the pupil's true culture, then it does not deserve a more respected position" (p. 31). This concept suggests again the necessity of a serious and purposeful musical pedagogy as well as a valid and validating tradition of assessment which is particularly suited to the arts.

Twenty years ago, the Rockefeller Panel (1977) reported that American schools only focused on their perceived main purpose, "to prepare students to get jobs and to advance in the business and professional world". Curricula are "graded and segmented into priorities which do not include the arts" and provide no time for "something that hasn't always been there". As a result, "Johnny still can't read, and more recently we have discovered that he can't write either" because of our preoccupation with getting results instead of "developing the means which produce results" (pp. 53-56). A later study suggests that only 7 to 12 percent of the adult American population reads serious literature (Zill and Winglee, 1990, p. viii).

Alfred North Whitehead (1929, 1957) gave ample warning that these results should be expected if the then current course was pursued. He prophetically decreed that "you cannot, without loss, ignore in the life of the spirit so great a factor as art" (p. 40). He further cautioned that if the educational system claims to have freedom in education "it must pay the price of attending to the whole personality of the learner", something which could be

easily accomplished without an "undue outlay for material resources" (p. 40). For him, superficiality occurs when "small parts of a large number of subjects" result in the "passive reception of disconnected ideas" (pp. 1-2), a particularly timely insight for today's information explosion as well as a powerful validation of the balanced development of all the ways of knowing, including the musical.

An educational study completed by the Sandia National Laboratory (1992) considers the prevailing "preoccupation with the link to economic competitiveness" as an actual "impediment to educational improvement" (p. 3). The alternative is the "waste of opportunity and human resources" which could be lessened or even avoided by the sort of intelligent and consistent arts education envisioned by the Rockefeller Panel (Gary in Rockefeller, 1977, p. 102). Junius Eddy (1981) adds his observation that "Ironically, we may discover not long after 1980 that...we had an upsidedown curriculum, with what was considered then to be of most worth proving to be of little value to masses of the people..." (p. 3). He further expresses concern that though reform in the sciences and mathematics have demanded little change in institutional structure, the arts cannot expect to succeed without a "reconceptualization of how schooling proceeds" (p. 15).

Glasser (1990) points out that our superficiality partly derives from a constantly deteriorating societal base which does not consistently value "book learning" as do many other cultures, such as those in "...Korea, Japan, France, and Germany" (p. 429). What does seem to be valued is "...not worth knowing...and little will be remembered. The banality and triviality of the curriculum in most schools has to be experienced to be believed" (Silberman in Rockefeller, p. 116). This set of observations points to the potential for improvement offered by the literature-driven model of musical education described in this study. The other option will be to continue to ignore the

holistic needs of teachers and students which will in turn enable the "...increased use of drugs and high rates of delinquency and teen pregnancy" we are now experiencing (Glasser, p. 430).

Inroads are being made in several states which have mandated up to 100 minutes a week for elementary school art and music instruction (Eddy, 1981, p. 3). The content of, and teacher-training for, this increased instructional commitment is crucial, as has also been demonstrated in this dissertation. Without revolutionary improvements in content and teacher training, these mandates are not innovative in and of themselves, and are only a restatement of past practices which were often shelved because arts educators themselves erroneously thought that "the teaching of art should focus almost exclusively on developing a student's creative ability" which led many of them to resist specifying any structure or content which might "stifle creativity", resulting in "...arts programs which lack substance" (H.M. Williams, 1992, pp. 2, 5). Again, specific solutions for erroneous attitudes and practices have been offered in the present model.

Havel (1990) places the entire superficiality issue into a more universal perspective:

> ...somewhere here there is a basic tension out of which the present global crisis has grown...I'm persuaded that this conflict...is directly related to the spiritual condition of modern civilization. This condition is characterized by loss: the loss of metaphysical certainties, of an experience of the transcendental, of any superpersonal moral authority, and of any kind of higher horizon...(pp. 10-11)

The parallels to this from the writings of the composer-educators are clear and powerful. Their model for musical education is not about method, but about changing the life of the musical learner. In reality, all of the arts are about what society can do to improve life, but public education in its present state is not

capable of doing what is envisioned unless some fundamental changes are made (Davis in Rockefeller, 1977, p. 245).

Permanently accomplishing such changes requires a self-renewing cycle. Indeed, the Hungarian experience has shown that elementary school principals who attended daily singing schools in their childhood have remained strong supporters of the music curriculum. This is a case in point of musically well-trained children becoming musical amateurs rather than professionals, but who make "a big place for the arts when they become administrators" (Herboly-Kocsár, 1993, p. 3). Once a single generation has been touched by profound artistic experiences, this original generation will ensure that the cycle perpetuates itself. This principle, too, has been applied elsewhere: "Souls cannot be reshaped by administration. But souls reshaped by beauty and knowledge are easy to administer" (Kodály in Bónis, 1964, p. 147).

Gardner's (1991) corresponding solution for American schools is to simultaneously identify and combine national artistic values with effective teaching practices and school mechanisms which provide a stable application of them (p. 261). Though painful and time-consuming, he adds, the effort is critical, worth doing and worth doing correctly (p. 261). This is the same combination of reforms applied to musical education at various times in England, Germany, Hungary and Switzerland.

A Prospectus

Literate musicianship has a profound developmental contribution to make to the wholeness of learning through the structure, beauty and power of ideas embedded in musical literature (Whitehead, 1929, 1957, p. 11). "It is a mistake to relegate the arts to the periphery" because "they constitute a route or a bridge to the underlying order and structure in all the disciplines" (Eames

in Rockefeller, 1977, p. 56). Howard Gardner (in Rockefeller, 1977) likewise asserts that "the educational establishment is being derelict and delinquent if it neglects ways of knowing" (p. 53). As Kodály (in Bónis, 1964) put it, "..a single experience will open the young soul to music for a whole lifetime. This experience cannot be left to chance, it is the duty of the school to provide it" (p. 120). Yet, schools continue to deny our senses and actually contribute to our "senselessness". By contrast, says Rockefeller, a school filled with singing and movement could be a house of "wonderful information", instead of the all-too-common "fearful, gray fortresses" (pp. 3-4).

It is imperative that a place for artistic education be made which is separated from commercialism and any other financial connotation which withholds learners from naturally deep, consistent and lasting musical experiences. These economic barriers range from an overemphasis on instrumental experience for only those who can afford it, to overdependence on technology which requires some sort of machine interface for music-making, to slick trade textbooks which supplant teacher decision-making, to the school administrator who "knows the price of everything and the value of nothing, because for him the value is the price" (Nibley, 1984, pp. 46-47).

American music educators must also come to some sort of consensus about the systematic teaching of the reading of music such as has been in place in European schools for centuries and which opens the way to the very art music we wish our students to "appreciate" (Kodály in Bónis, 1964, p. 128). It has been amply demonstrated in other countries that the appropriate cultivation of the fluent reading and writing of music is the pathway from musical illiteracy to a genuine musical culture for the general population (Szönyi, 1973, p. 15). It has been likewise demonstrated that the inverse is true: general illiteracy in music actually retards the growth of national musical

culture, including a subsequent reduction in serious concert attendance (p. 12).

The Hungarian experience provides the most immediate and recent example of how widespread educational reform is taking place because of the arts. The pillar concepts of this reform are: 1) Education in the arts is necessary for the cultivation of the whole personality; 2) Every learner has the right to be musically educated and it is the duty of the school to ensure this; 3) Singing is the quickest, surest path to musical education for everyone because it allows every learner to participate immediately and because it is the key to the rapid internalization of ear-training; 4) Learners should find that great music is immediately accessible without being led through artificial steps to get to it; 5) Musical knowing should logically and sequentially progress from known to unknown; and, 6) Music instruction must be developmentally matched to the learner and not vice-versa (Sanders, 1975, p. 1).

The Hungarian vision is not restricted to music. Even the special music primary schools in Hungary are not only music schools, but also humanities schools. The increased time allotted to music is accompanied by increases in contact hours for dance, art and languages (Kodály, 1966, p. 74). Kodály himself went through considerable public and private agony while insisting on providing more arts in the schools by taking some time away from the so-called "academic core". He and his colleagues were naturally overjoyed when the reports began coming back that the children from the schools with more music, art and dance were actually achieving better in the so-called core academic subjects (Dobszay, 1972, p. 30). A generation earlier, Jaques-Dalcroze had predicted these very same results (Kodály, 1966, p. 76). Additionally, others report that Hungarian elementary classroom teachers prefer teaching in the daily singing schools because the children in them show

more interest and achievement in math, writing, drawing, languages and physical education (Nemes, ca 1980, p. 2; and Szönyi, 1973, p. 41).

Pestalozzi had said early on that "the whole of the community must be shown the way to singing and to music", and Szönyi now affirms that this one issue alone is so crucial that it supersedes any consideration of which method to use (Szönyi, 1973, p. 12). Therefore, a fundamental premise of reform in American musical education must be the restoration and raising of the standard of school singing instruction. England, Germany and Hungary have already demonstrated that on a nationwide basis, the general populace is quite able and willing to achieve a "viable musical culture" through in-tune singing leading to relative solmization, which expresses tonality which in turn accesses underlying meaning and form in notation (p. 15).

Researching Musical Literature for Teaching

The model of literature-based musical education presented here implies that the solution for its implementation lies within music itself. It further implies that the very act of defining the literature base will powerfully reorient our music educators to the same general direction, for it is a project of such magnitude as to keep many generations of researchers busy. But the significance of such a project is found in the English experiences early in this century which brought to light the remarkable affinity for folksong of the English schoolchildren. Teachers and administrators alike were astonished at the ease with which children learned even the more difficult modal melodies and stamped them with their highest approval by singing them while away from the school, in the playground and on the streets (Sharp, 1965, p. 176). In America, by such a simple means as likewise refocusing the singing curriculum, we would see immediate changes in our own schools.

Literature-based musical education naturally depends on a competently researched and carefully organized collection of musical works, including authentic folksong. It would not be difficult to provide school singing literature representing our constituent Hispanic, Native American and African-American cultures to complement the extensive body of English song now available. British scholars have done much foundation work in English-language folksong classification including the American and Canadian traditions. Sharp and Karpeles (1965) alone account for twelve thousand tunes and variants (pp. 181-184). These have been assembled into volumes according to either region or function (Young, 1964, p. 144) and are available for research at the English Folk Dance and Song Society archives in London. Getting this oral tradition into the schools is crucial "at the end of this Twentieth Century when social contact is paralyzed by the media...and the parents and children...are more involved in machine music" than in direct, spontaneous music making which is truly representative of their own cultures (Forrai, 1994, p. 5).

In addition to making connections with the body of folksong already collected and classified in England and at the Library of Congress, ongoing field collecting in folksong and children's singing games should be sustained. Sharp reported that as late as 1965, hitherto unknown variants were still being discovered in England (Karpeles in Sharp, 1965, xi). Vikár (1993) suggests that even more folksong field work is probably already being done by ethnographers, linguists and anthropologists, and that dialogue with them should begin (p. 19).

I asked Professor Vikár how he would approach the task of discovering and organizing for school use America's various musical oral traditions. His response was to suggest that American scholars regionalize the work, then for

these same researchers to have ample and regular opportunity to communicate and share findings. According to Vikár, their first task would be to find and evaluate all known collections of folksong recordings and transcriptions within each region. Their next task would be to transcribe all of these into the international classification format in order to answer the question of what the most characteristic and beautiful folksongs are for the cultures represented. Though a complete answer will take may years to research, the ongoing process will already reveal a great many trends in just one year's work (Vikár, 1993, pp. 16-19). Another ongoing task will be to connect these folksong streams to the parent cultures and countries from which they evolved (1969, p. 11). Making these connections to historical antecedents also enables teachers to create the necessary bridges between oral tradition and art music.

American music education would greatly benefit from the interest of top-ranked composers who would resume the folksong-related work such as that begun by Aaron Copland. It would not be impossible for a teacher-training institution to sponsor a composer's symposium about music for children whereby some mutually beneficial collaborations could be established. As a teacher of composers, Kodály (in Bónis, 1964) once advised "...the composers of symphonies to drop in sometimes at the kindergarten...It is there that it is decided whether there will be anybody to understand their works in twenty years' time" (p. 151).

Establishing Instructional Traditions

The rapidly developing American educational interest in, and validation of, qualitative research has many implications for the establishment of literature-based music education in our schools. Applying qualitative research and portfolio assessment procedures to music specialist teaching would not

only provide a rich fund of information about musical learning, but also empower teachers to be researchers, if only for the improvement of their own teaching. The inevitable result of thus enabling specialist teachers is that they will begin to develop a common vocabulary, a common set of issues, and an ever-growing exchange network for resolving those issues. This same phenomenon can be observed developing alongside the whole language movement.

This ability to discourse about a body of work is crucial to its vitality, its dissemination and its further refinement. For this reason alone, any connotation of a strict methodology must be avoided. Improving teacher's musicality, their ability to analyze and interconnect bodies of literature, and their knowledge of child musical development will continually bring increased insight to musical pedagogy. Investing trust in teachers who have been trained to expertly apply underlying principles in their own way will produce a body of research questions and investigative methodologies which will continuously fuel a growing body of viable teaching traditions. Above all, these kinds of activities will unify, rather than polarize, general music teaching in our country.

There seem to be some apparent starting points, expressed as kinds of research and development questions, around which teacher-as-researcher activities might revolve in order to initiate the self-perpetuating process described above. For instance, teaching literature: Which bodies of oral tradition should be used? What are their essential musical characteristics? To what other bodies of musical literature do they logically connect? What developmental sequences are suggested by these connections? How far back into history do these connections extend and what do the answers imply about what to teach and when? What is the nature and structure of musical reading and writing materials suggested by the teaching literature? What kinds of

choral and instrumental ensemble performance literature are suggested by the teaching literature?

Pedagogical traditions might form another category. Deriving from the use of the teaching and performance literature, teaching issues abound: What instructional sequences are suggested by natural learner development? How do these sequences interface with the literature sequences? How can these two kinds of sequences be reconciled in favor of the learner's sure musical development and successful construction of meaning? From these questions, other subsets of pedagogical issues can be derived. Though too numerous to list completely here, these kinds of research questions deal with the specific techniques and approaches used for each musical element occurring in the teaching literature. Examples of these kinds of questions might be as follows: Is it more effective to teach beat and rhythm by counting or through the learner's discovery of ratios and proportions relative to movement? Do syllable systems aid in the mastery of rhythm and meter? Yet other subsets of questions derives from the combining of pedagogical and literature issues. These include questions concerning the effectiveness of applying predictable literature in classroom situations, page layout in singing texts, and certain unexplored issues of musical dictation, improvisation and composition.

The third, and potentially most powerful category of research questions might revolve around what learners themselves have to reveal about their musical learning. Observations and interviews of learners involved in the musical learning process might yield unique insights into the learner's own musical metacognition. This kind of information provides an important reality check between what the teacher may perceive about what is being learned and what is actually being assimilated by the learners. Additionally, this kind of

data may also be correlated with those gleaned from other measures of how the acquisition of musicality affects the other ways of knowing.

Even more powerful yet may be the contribution learners themselves have to make to the literature base. Current playground collecting by singing teachers shows that the oral transmission of singing games is very much alive and is still producing considerable numbers of new variants. Even adult learners demonstrate the ability to recall authentic songs and singing games learned in earlier years. Above all, the key principle underlying all of these research suggestions is that the cultural ascent to the highest art music involves the combined resources of teachers, learners, composers and musicologists.

Teacher Training and Preparation

Establishing instructional traditions based on this model naturally depends on teacher training. "Everything depends on the leader. And this is where urgent reforms are required" (Kodály in Bónis, 1964, p. 123). A hundred and fifty years ago, Lowell Mason (1854, 1967) likewise recognized how important the thorough training of teachers was to the success of reform in musical education. He therefore took steps to insure that there were teachers "capable of making music a valuable curricular addition rather than a short-lived experiment in the public schools" (p. 87). His successful Boston Academy of Music and national singing teacher conferences focused on teacher training by bringing together often teachers who were bound by a common curriculum and set of teaching traditions (p.87).

Junius Eddy (1981), a member of the Rockefeller panel on arts in education, sees that arts education in the elementary grades is already "too dependent on somebody's packaged curriculum unit" because the teachers are not well-enough prepared (p. 7). Swanwick (1988) also agrees that

"ultimately all depends on the teacher" who plans "for consistency of effectiveness" and formulates curricula "with a clear rationale" (p. 17). Planning is essential because it empowers the teacher to take control of the teaching-learning process. "Professionals are always in control of their own work" (K.S. Goodman, 1986, p. 75).

A lack of competent curriculum and lesson planning leaves an unmistakable mark on music education. Swanwick's (1988) description of many school music situations in Britain is not very far from the current American experience. He reports that "...many teachers operate a 'pick and mix' curriculum...The general picture is of a music curriculum in schools that is somewhat arbitrary, depending on one of several theoretical belief systems or on the immediacy of what resources and know-how are available..." (p. 17). Willems implies that a loose curriculum is reflected in the actual learning which occurs: "Total and unconditional liberty does not lead to art. Art demands choice and limitation" (Willems, 1979, p. 13). For instance, allowing children to only improvise their own melodies without continuous learning of their own musical culture is seen as a weakness, in the same way that educators do not allow children to create their own language (Kodály in Bónis, 1964, pp. 130-131). What should be encouraged is for children to create their own expression within the large framework of their language (p. 131).

In order for this to happen, music specialists must see themselves as more than musicians, continually re-energized by the constant renewal of their pedagogical arts. Vikár relates that a music teacher "should be intelligent in understanding folksong research and then the large horizon of how this whole music education goes will be clear..." (1993, p. 7). But the concept also reaches far beyond the discipline of music alone: "...we cannot miss knowing what is happening around us...in...musical literature, poetry or painting, or the

(rest of the arts). This is because their affect is much better if seen together as a larger context" (p. 7).

These kinds of music teacher qualifications and attitudes coincide with what Kenneth S. Goodman (1986) envisions for the language educator, who is expected to participate in or draw heavily upon the fields of linguistics, language development, sociolinguistics, psycholinguistics, anthropology and education (p. 25). Therefore, the teacher's multiple roles must include building curricula, planning instruction and evaluating progress so that the teaching-learning process continues to self-perpetuate (p. 25).

Recommendations for Further Research

A great number of issues for ongoing research have already been mentioned. They imply some specific projects for the immediate future. For instance, the ongoing compilation and revision of a canon of musical teaching literature is critical to the implementation of the model discussed in this dissertation. László Vikár suggested that American research of this kind be regionalized in order to be more sensitive to the music of its various cultures and populations. Advances in computer software and multi-tasking make it possible to accelerate the time-consuming preparation of folksong and art music for comparative analysis.

There is a particular need to thoroughly research the compositions of women composers for inclusion in the curriculum, a matter which has been left unattended for far too long. A preliminary study for this dissertation outlined a chain of influential women composers going as far back as the twelfth century. In addition, there are some important connections to be made between the music of nature - such as birdsong and whalesong - and composed music, such as certain works of Vivaldi, Beethoven, Resphigi and Hovhaness' to mention a very few.

As a complement to folk- and art music research, children's and adult treble choral literature should be collected and systematized for teaching and performance purposes. Once the two research collections have been established, composers may be invited to enrich and expand them as partners in the pedagogy-musicology-musicianship processes of general musical education. Additionally, the genres of children's language literature treating musical subjects can not only be correlated to the folksong and choral literature collections, but expanded by them as authors and illustrators draw upon them for new material.

In order to apply the principles of predictability discovered in this dissertation, the musical literature research discussed above can provide the materials for new music textbook editions. Regionalizing the folksong research will allow for texts which are much more authentic in their representation of specific cultures. In the possible absence of commercial publishing support, regional research institutions may consider pooling publishing resources in order to print smaller numbers of more editions. The precedent for this approach has been set in other countries.

Accomplishing this more sensitive kind of publishing will enable the expansion of application of the literature-based musical pedagogy into schools where there are many different cultures represented. New developments in world-music resources will especially enrich the musical literature base available to learners. Carefully researched pedagogy will help learners find the many musical commonalities between the various bodies of musical literature.

Effort should also be directed to completing the English translations, begun for this dissertation, of Jaques-Dalcroze's, Kodály's, and Willems' works pertaining to musical literature research, school reform, and

pedagogical traditions. The portions already translated suggest that there is a wealth of information bearing on the acquisition of musicality yet available. Of particular interest may be the historical evolution of Pestalozzian musical pedagogy.

The long-term and systematic gathering of individual learner data should accompany applications of the model described in this study. The careful analysis and evaluation of this data should inform the refinement of constructivist musical pedagogy for schools. Cross-disciplinary data-gathering is indicated to develop a clearer picture of the interconnections between ways of knowing. Qualitative data-gathering techniques seem particularly suitable for these projects.

APPENDIX A

AN EXPLORATORY STUDY OF THE ACQUISITION OF SINGING

Using the criteria listed below in order to quantify the progress of each child's singing, the data listed below was obtained by assessing each sample:

Table 2 Singing Acquisition Criteria and Data

4 Sings securely and expressively in the head register
3 Able to control registers and sing in tune with self for duration of song
2 Able to control registers for part of the song or chooses to sing in chest
1 Cannot locate registers, sings in tune in chest register
0 Cannot locate registers and cannot sing in tune in chest register
* Denotes that this child had an older sibling who was experiencing the same kind of singing-ear training instruction taught by the same teacher in the same school

Sample:	#1	#2	#3	#4	#5
ID: AB	0	0	1	3	
AC	2	2	2		
AK	2	2	3		
AM	0	1	3	1	
JO*	1	3	3	4	4
AR*	3	3	4	4	
AS*	0	0	1	2	3
BC*	0	1	3	4	
BL	3	3	3		
CC	0	1	3		
CD*	2	2	2	3	3
CR	1	1	2	3	
DB	1	3	2		
DL	3	3	4		
DR*	3	4	4	4	
DS*	3	2	2	3	4
GH*	0	1	2	2	3
HC	3	4	4	4	
HK*	0	1	0	3	
JU*	1	1	3	4	
JV	0	1	2	3	
KB*	2	2	3		
KH*	2	3	4		
KJ*	3	4	4	4	
KR	2	2	2	3	4
KS	3	3	4	4	
LB*	1	2	3	3	4
MB	0	1	1	3	3

ML*	0	2	3	3	3
MM*	3	3	3	4	
MR	0	1	2	3	4
MSP*	0	2	3		
NS	2	3	3	3	
PM	1	1	1	1	
RC	3	3	3	3	4
RD	4	4	4	4	4
RK*	3	3	4	4	
RR*	1	0	0	2	3
RW	1	2	3	4	
SA	3	3	4	4	
SF	3	3	3	4	
SF*	1	1	3	4	
SH*	1	3	4		
SK*	1	2	3		
SV*	0	1	2	2	
TM*	3	3	3	4	
WG*	3	4	4	4	4
ZD	2	2	1	3	2

APPENDIX B

AN EXPLORATION OF ADULT AURAL LEARNING

The evaluation criteria are listed with the data below. After the numeric values for each student, a "Y" denotes musical involvement prior to the course [usually childhood piano lessons] and an "N" denotes no prior musical involvement. This is followed by a classified comment drawn from each student's exit essay concerning their most significant area of musical progress.

Table 3 Aural Progress Criteria and Data

5 Achievement of pure intonation in singing and solmization
4.5 Partial achievement of pure intonation in singing and solmization
4 Perfect in-tune singing and solmization
3.5 Partially incorrect use of voice or solmization
3.0 Register difficulties, flatting/sharping or completely wrong solfa
2.5 Unstable vocalization or intonation
2.0 Mostly out-of-tune singing in either register
1.0 Incorrect register and intonation throughout

Sample:	1	2	3	4	Essay
ID: 1.0	2	2.5	3	3.5	N Miscues vs mistakes enabling.
2.0	3.5	3.5	4.	3.5	Y Now able to independently sound out song
3.0	4	4	4	4.5	Y Applying literate musicianship out of class
4.0	4	4	4.5	5	Y Now able to sight-sing independently
5.0	3.5	4	4.5	4	Y Now able to sight-sing independently
6.0	3	4	4	4.5	Y Now able to sight-sing independently
7.0	4	3.5	4.5	4.5	Y Now able to sight-sing independently
8.0	4	3.5	4	4	Y Now able to sight-sing independently
9.0	4	4.5	4.5	4.5	Y Now able to sight-sing independently
10.0	3.5	3.5	4	4	Y Now able to sight-sing independently
11.0	3.5	3.5	4	4	Y Exp/Exp enabled ability to r/w rhythm
12.0	4	4	4.5	4.5	Y Now able to sound out alto part w/out help
13.0	3	4	4	4	Y Now able to sight-sing independently
14.0	4	4	4.5	4.5	Y Now able to sight-sing Messiah choruses
15.0	2	2	3.5	3.5	Y Now able to sing in tune and to sight-sing
16.0	3	4	3	4	Y Now able to sight-sing independently
17.0	1	NA	1	NA	N Miscues vs mistakes enabling

18.0	1	3	3	4	N	Now able to sing in tune and alone
19.0	3	4	4	4	Y	Now able to sight-sing independently
20.0	4	4	3	3	Y	Now able to identify key signatures
21.0	1	2	3	3	Y	Gaining confidence in voice and ear
22.0	4	4	4	4	Y	Now able to sight-sing independently
23.0	3	NA	3	3	Y	Still learning to sound out unknown songs
24.0	3	4	4	4	Y	Being reconnected to childhood tradition
25.0	4	4	4	3	Y	Now able to sight-sing independently
26.0	2	3	3	3	N	Now able to sing in tune in front of others
27.0	3	3.5	4	4.5	Y	Now able to sight-sing independently
28.0	3	3.5	4	4.5	Y	Now able to hear internally and notate it
29.0	4	4	4	4	Y	The ability to teach others to sing in tune
30.0	4	4.5	4.5	NA	Y	Now able to sight-sing independently
31.0	3	4	4	4	Y	Miscues vs mistakes enabling
32.0	2	3	3.5	4	Y	Now able to sight-sing independently
33.0	3	3.5	4	4.5	Y	Miscues vs mistakes enabling
34.0	3	3.5	4	4	Y	Now consistently thinking in solfa
35.0	4	4	4.5	4.5	Y	Beginning to sight-sing independently
36.0	3.5	3.5	4	4	N	Now able to sight-sing independently
37.0	3	3.5	3.5	4	Y	Now able to sight-sing independently
38.0	4	4.5	4.	4.5	Y	Now able to sight-sing independently
39.0	4	4.5	4.5	3.5	Y	Gaining confidence in solmization
40.0	4	4	4	4	Y	Now able to sight-sing independently
41.0	4	4	4.5	4.5	Y	Now able to sight-sing independently
42.0	4	4	4.5	4.5	Y	Now able to sight-sing independently
43.0	3.5	4	4	4.5	Y	Now able to sight-sing independently
44.0	3	3.5	4	NA	Y	Now able to sight-sing independently
45.0	4	2	4	4	Y	Now able to sight-sing independently
46.0	2	3.5	4	4	Y	Now able to sight-sing independently
47.0	4	4	4.5	4.5	Y	Now able to sight-sing independently
48.0	3.5	3.5	4	4	N	Ability to teach others to sing in tune
49.0	3.5	3.5	4	4	N	Now able to sight-sing independently
50.0	2.5	2.5	3.5	3.5	Y	Still learning to sound out unknown songs
51.0	NA	3.0	3.5	3.5	Y	Still learning to sound out unknown songs
52.0	3.5	4	4	4	Y	Now able to sight-sing independently

APPENDIX C

PREDICTABILITY IN CHILDREN'S MUSICAL LITERATURE

Table 4 Criteria For Measurement Of Predictability In Notated Music

Vocal Characteristics:
3 Appropriate range-to-key relationship
2 Reasonable range-to-key relationship
1 Inappropriate range-to-key relationship
0 Range of song too wide or intervals too complex for developmental stage in any key

Visual Characteristics:
3 Phrase-by-phrase layout
2 Phrases discrete but not separated in layout
1 Phrases run-on

Tonal Characteristics [compared to precedent/succedent]:
5 Same scale system, key, incipits **and** cadences
4 Same scale system, key and incipits **or** cadences
3 Same scale system **and** same key
2 Same scale system
1 Same key as precedent
0 Not same key [unless change to same-key grouping]

Metrical Characteristics [compared to precedent/succedent]:
5 Same syllable scheme
4 Same number of bars-per-phrase
3 Same crucis/anacrusis
2 Same meter/same beat unit
1Same meter/different beat unit
0 Not in same meter

External Redundancy [relationship to precedent/succedent]:
5 Variant of same folksong
4 Same formal structure and composer
3 Same formal structure
2 Same style group within period [or culture]
1 Same stylistic period [or culture in folksong cases]
0 Through-composed or dissimilar

Internal Redundancy [relationships within each song]:
4 Three phrases have same rhythm-melody; sequential or tonal answers
3 Two phrases have same rhythm-melody; sequential or tonal answers
2 Two phrases have the same melody but not rhythm
1 Two phrases have the same rhythm but not melody
0 No repetitions of rhythm or melody

Textual Characteristics [compared to precedent/succedent]:
3 In same language, text in sync with notation
2 Not in same language, text in sync with notation
1 In same language, text out of sync with notation
0 Not in same language, text out of sync with notation

Table 5 Predictability Percentages for Selected Singing Books

Andrasné and Szmrecsányi (1971) First Grade Singing Book	93%
Kodály (1941) 333 Elementary Reading Exercises	90%
Dobszay (1966) The World of Sounds - Book One	88%
Jaques-Dalcroze (1906) Study of the Musical Staff	65%
Macmillan Publishing Company (1995) Share the Music	59%
Willems (ca 1956) Songs of two to five notes	48%
Ives (1832) The American Elementary Singing Book	43%
Holt, Rinehart and Winston (1988) Holt Music - Grade 2	41%
Hall (1963) English version of Orff Schulwerk Volumes 1-5	37%
Ji Junshi (1988) Grade One - Chinese National Music Textbooks	37%
Silver Burdett & Ginn (1995) The Music Connection	36%
Mason and Webb (1844) The Juvenile Singing School	15%

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